PLANT SCIENCE TODAY
Vol 12(sp4): 01–09
https://doi.org/10.14719/pst.9904

eISSN 2348-1900

RESEARCH ARTICLE

Impact of the ODL-based diploma in agri-inputs program on agri-input dealers in Tamil Nadu

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Received: 06 June 2025; Accepted: 28 October 2025; Available online: Version 1.0: 01 December 2025

Cite this article: Kathiresan S, Balasubramaniam P, Sriram N, Gangai SR, Shanmugam PS. Impact of the ODL-based diploma in agri-inputs program on agri-input dealers in Tamil Nadu. Plant Science Today. 2025;12(sp4):01–09. https://doi.org/10.14719/pst.9904

Abstract

Open and distance learning (ODL) in India has emerged as a crucial mode of education, with 45.73 lakh enrolments in 2021-22 across various courses. In agriculture, ODL plays a vital role in promoting skill development and entrepreneurship. This study evaluates the impact of the diploma in agri inputs (DAI) program, offered by Tamil Nadu Agricultural University (TNAU), on 350 learners who have successfully established agri-input businesses. An *ex-post-facto* research design was adopted, with respondents selected from seven ODL study centres using the simple random sampling method. Primary data were collected using a well-prepared questionnaire. The study assesses both social and economic impacts. Socially, DAI-trained dealers reported significant improvements in leadership (94.57 %), strategic planning (81.71 %), product expertise (80.57 %), convincing ability (80.28 %), empathy (78.85 %), follow-up and supervision (78.29 %), financial management (78.00 %), accountancy (77.43 %), human resource management (74.57 %), technical communication (73.43 %), vendor relations (71.14 %), advisory skills (70.29 %), risk management (69.14 %) and supply chain management (62.57 %). Economically, they experienced increased income (94.57 %), expanded market linkages (86.00 %), money savings (82.29 %), improved financial stability (81.43 %), achieved economic independence (78.00 %), asset creation (77.71 %), purchased farm implements (77.43 %), improved livelihood security (76.86 %), invested in inventory (76.29 %) and enhanced access to credit (76.00 %). The findings underscore the DAI program's effectiveness in enhancing business acumen and socio-economic stability among agri-input dealers. Strengthening and expanding such initiatives can further empower entrepreneurs, improve agricultural extension services and contribute to rural economic development. Despite the growing importance of ODL in agriculture, limited studies have evaluated its direct socio-economic impact on agri-input dealers, highlighting a critical research gap that this study addresses.

Keywords: agricultural inputs; diploma; open and distance learning; socio-economic impact

Introduction

Education is a crucial and transformative force in balancing the socio-economic structure of the country. Open and distance learning (ODL) system is a system wherein teachers and learners do not necessarily be present either at same place or at the same time and is flexible regarding modalities and timing of teaching and learning as also the admission criteria without compromising necessary quality considerations (Department of Higher Education, Ministry of Education, Government of India).

To expand access to higher education, universities offer distance learning programs, particularly benefiting individuals in remote regions and those balancing employment with studies. In India, approximately 4.57 million students are enrolled in distance education, including 2.01 million women and 2.57 million men at various academic stages (1). Undergraduate programs account for the largest share, comprising 64.7 % of enrolments, while postgraduate courses represent 26.6 %. Notably, distance learning constitutes nearly 47.3 % of total university admissions in the country (1). Technological advancements have further revolutionized the ODL system, incorporating digital tools like online learning platforms, virtual classrooms and interactive study resources. E-learning resources, video lectures and online assessments have significantly enriched distance education, enhancing engagement and accessibility for students across the country.

However, despite these advantages, ODL systems continue to face challenges such as limited internet connectivity in rural areas, varying levels of digital literacy among learners, reduced opportunities for direct interaction and occasional issues with course quality assurance. Addressing these challenges through improved infrastructure, learner support systems and policy interventions is essential for ensuring the sustained effectiveness of ODL programmes in India. Additionally, government policies and institutional initiatives continue to strengthen ODL programs, ensuring quality education and skill

development for learners from diverse backgrounds. The enrolment distribution for ODL programs in India across different educational levels, showcasing the increasing acceptance of flexible learning as a viable alternative to conventional education systems (Fig. 1).

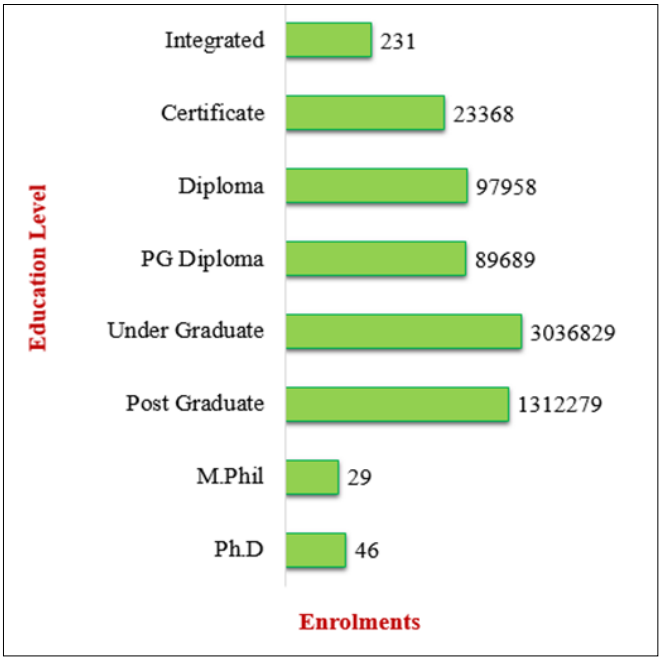

Fig. 1. Enrolments in universities and its constituent units through distance education mode in India (2022).

The Directorate of Open and Distance Learning (DODL), TNAU, Tamil Nadu, India

Tamil Nadu Agricultural University (TNAU) established the Directorate of Open and Distance Learning (DODL) in April 2005, becoming a trailblazer among State Agricultural Universities (SAUs) in India. This initiative was significant because TNAU was one of the first SAUs to institutionalize distance education in agriculture through a structured framework and comprehensive curriculum. The primary aim of DODL is to provide practical and technical knowledge in agricultural technologies and agri-based industries to individuals who do not have access to traditional campus-based education. For nearly two decades, TNAU-DODL has been offering a wide array of programs, including the Diploma in Agri Inputs (DAI), certificate courses, diploma courses, online certification programs, specialized short-term courses and intensive crash courses. These skill-driven courses aim to enhance the technical expertise of learners while providing the essential knowledge needed to pursue a career in the agricultural sector. The enrolment statistics for various ODL courses by TNAU-DODL are presented in Fig. 2.

A strong emphasis is placed on skill development and entrepreneurship, encouraging learners to start their own ventures and enhance their financial well-being. Many learners who have completed these courses have successfully established businesses in agriculture and allied industries. TNAU-DODL has played a crucial role in fostering entrepreneurship through programs such as the Diploma in Agri Inputs (DAI), Bachelor of Farm Technology (B.F. Tech) and training in specialized fields like coconut farming, tea plantation management, sericulture, sugarcane cultivation, mushroom farming and beekeeping. The success of these initiatives is reflected in the number of entrepreneurs emerging from the program. The growth of successful entrepreneurs who have benefited from various ODL courses offered by TNAU-DODL between 2005 and 2023, demonstrating the impact of distance learning in advancing agricultural skills and self-employment opportunities (Fig. 3).

Diploma in Agri Inputs (DAI) programme in TNAU-DODL

Over the years, diploma and certificate programs have seen a significant rise in enrolment, with the DAI standing out as one of the most popular choices. This program has consistently attracted many students over the past seven years. In 2015, the Government of India revised the Fertilizer Order and Pesticide Regulations, making a *Diploma in Agriculture* a mandatory qualification for individuals seeking an agricultural inputs dealership (2). To address this regulatory requirement and meet the professional needs of existing input dealers, the TNAU-DODL introduced the DAI program in 2016. The course is offered through various ODL centers, including agricultural colleges, research institutions, Krishi Vigyan Kendras (KVKs) and other allied study centers.

The primary aim of the DAI program is to help participants obtain the fertilizer dealership licence, a compulsory credential under the Fertilizer Control Order - 2015 for those applying for dealership authorization. In addition to licensing, the course is designed to enhance knowledge, promote self-employment and support entrepreneurial ventures in the agricultural sector. This program serves a wide range of learners, including farmers, rural

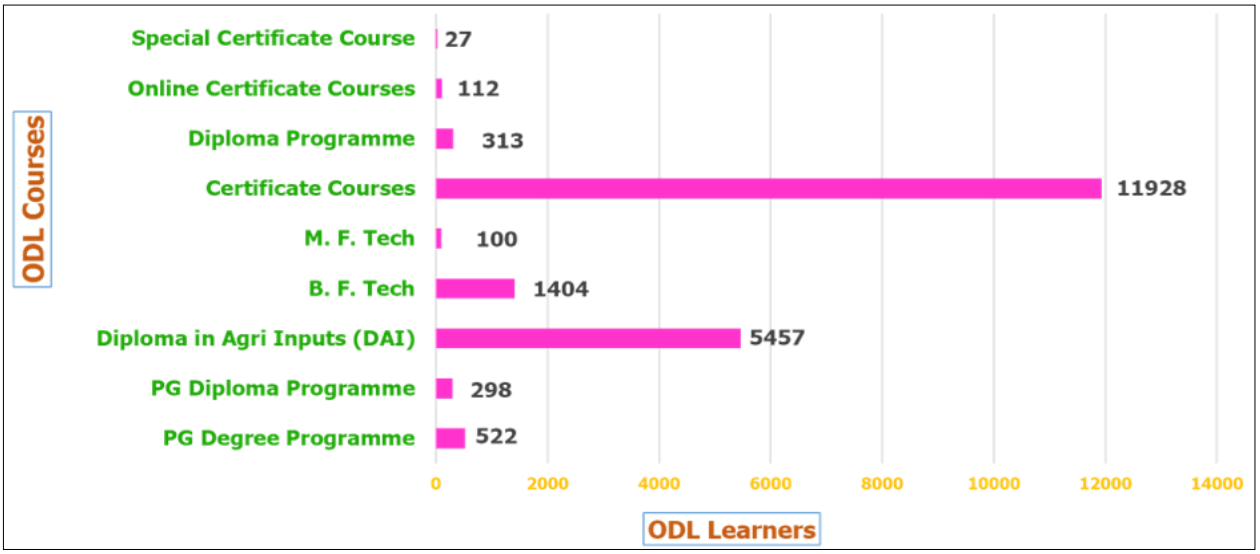

Fig. 2. Student enrolment status of ODL courses in TNAU-DODL (2005-2023).

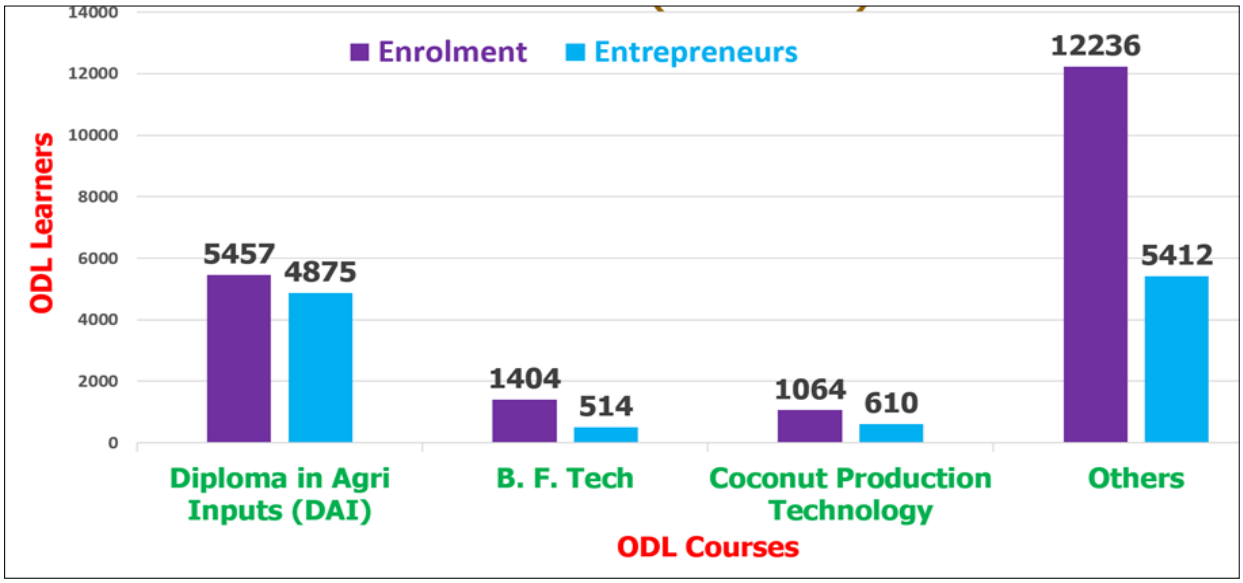

Fig. 3. Successful entrepreneurs from TNAU-DODL through ODL courses.

youth, government and private employees, agricultural field service providers, aspiring entrepreneurs, non-governmental organizations (NGOs), unemployed individuals and school dropouts.

By offering specialized education in agricultural inputs, the program plays a vital role in strengthening the knowledge base and technical skills of stakeholders in the farming and agribusiness sectors. The enrolment trends in the DAI program, reflecting its growing acceptance and relevance in supporting agricultural professionals and businesses (Table 1). The increasing participation demonstrates the effectiveness of distance education in bridging knowledge gaps and improving professional competency in the agricultural input sector.

Table 1. Students' enrolment details of DAI programme (2016-2024)

S. no.	Academic year	Number of enrolments
1.	2016-2017	1905
2.	2017-2018	423
3.	2019-2020	238
4.	2020-2021	616
5.	2021-2022	833
6.	2022-2023	721
7.	2023-2024	708

Materials and Methods

Research location

The Directorate of Open and Distance Learning (DODL) at TNAU was specifically chosen for this study, as it has been offering the DAI programme since 2016 through 19 ODL study centres across Tamil Nadu (Fig. 2).

Among these, seven ODL study centres were purposefully selected for the research based on their maximum student enrolment and active participation in the DAI programme during 2016–2021. These centres were identified as having the largest learner base and consistent course delivery performance, making them representative of the programme's overall impact. The selected centres are listed and the geographical distribution of the study area is illustrated in Table 2 and Fig. 4.

Table 2. List of TNAU-ODL study centres across Tamil Nadu

S. no.	ODL study centre	Place
1.	The Directorate of Open and Distance Learning	Coimbatore
2.	Agricultural College & Research Institute	Echangottai
3.	Agricultural College & Research Institute	Killikulum
4.	Agricultural College & Research Institute	Madurai
5.	Agricultural College & Research Institute	Vazhavachanur
6.	Anbil Dharmalingam Agricultural College and Research Institute	Trichy
7.	Tamil Nadu Rice Research Institute	Aduthurai
8.	Oilseeds Research Station	Tindivanam
9.	National Pulses Research Centre	Vamban
10.	Grapes Research Station	Theni
11.	Agricultural Research Station	Virinjipuram
12.	Regional Research Station	Vridhachalam
13.	Krishi Vigyan Kendra	Papparapatti
14.	Krishi Vigyan Kendra	Sandhiyur
15.	Regional Research Station	Paiyur
16.	Krishi Vigyan Kendra	Thirupathisaram
17.	Agricultural Research Station	Kovilpatti
18.	Horticultural Research Station	Ooty
19.	Cotton Research Station	Srivilliputhur

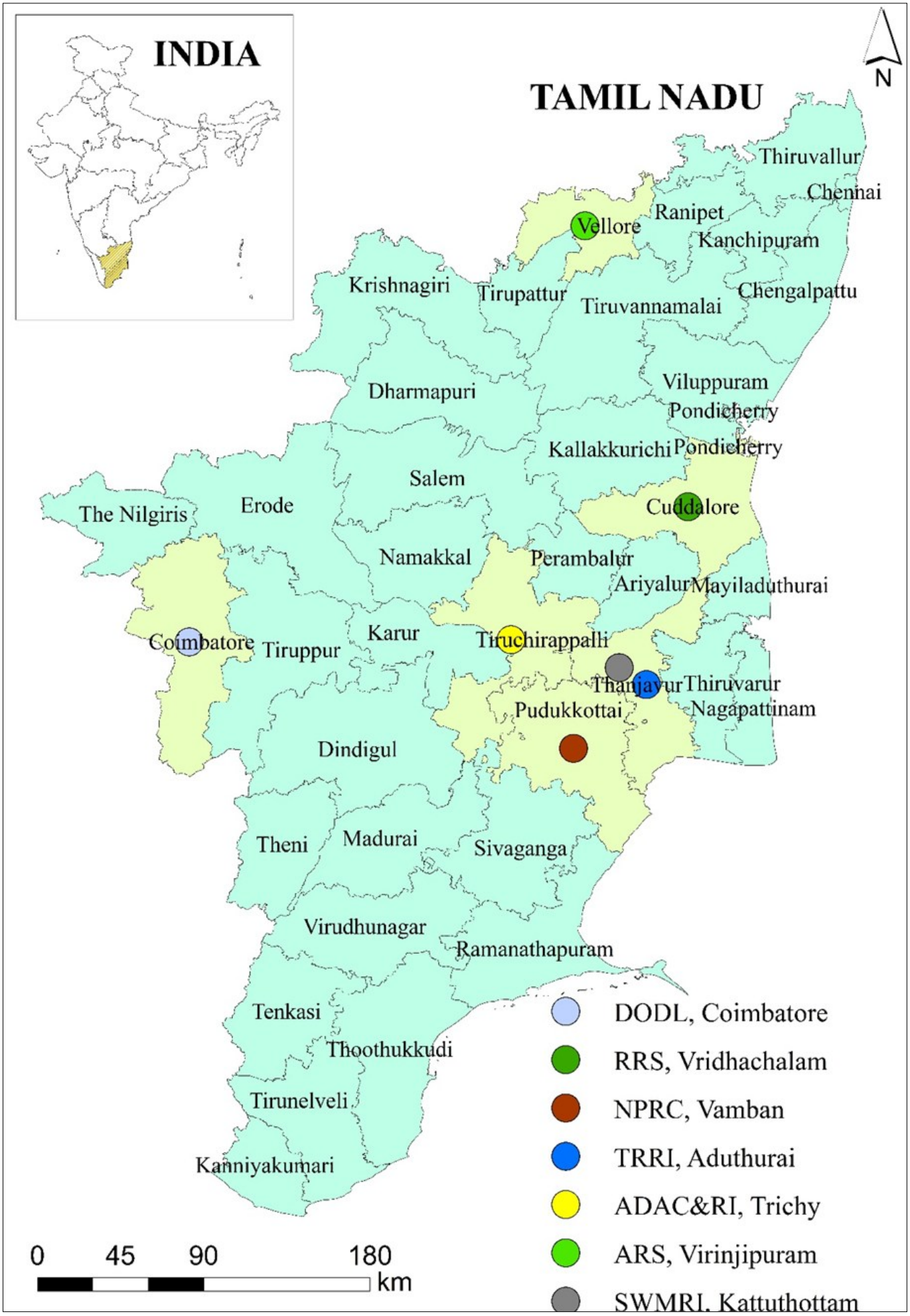

Fig. 4. Map of the study area.

Sampling procedure and data collection

The Taro Yamane formula was utilized to determine the appropriate sample size. In survey research, Yamane's formula is a popular technique for estimating the appropriate sample size for a particular population while taking accuracy and usefulness into consideration (3). This formula estimates the sample size by considering the total population and the desired margin of error. The calculation is provided below, and 95 % confidence levels are taken into account while applying this method.

$$n = \frac{N}{1 + Ne^2} \quad \text{Eqn. 1}$$

$$n = \frac{1569}{1 + 1569\ (0.05)^2}$$

n = 318.74

Where,

n = sample size

N = population size

E = error (0.05) reliability level 95 %

Since 318 is the minimal number needed, the study's sample size was set at 350 from seven ODL study centres. A total of 50 learners were randomly chosen from each ODL study centre using the simple random sampling technique. Data collection was carried out through direct interviews and telephone surveys with respondents, utilizing a carefully designed questionnaire. The details of the selected ODL study centres and their enrolment numbers are provided (Table 3).

Results and Discussion

By enhancing the technical expertise, business acumen and market access, the DAI programme empowers agri-input dealers to achieve greater financial stability, social recognition and resilience. These benefits extend beyond the individual dealers to positively affect the broader agricultural community, promoting sustainable development and improved agricultural productivity. As a result, DAI-trained dealers are better equipped to secure their livelihoods and contribute to the economic and social well-being of their communities. The impact has been assessed under two aspects: social impact and economic impact.

Social impact

The DAI programme plays a significant role in enhancing the social status of agricultural input dealers by providing them with the tools and knowledge to improve their professional standing, social influence and community engagement. This impact goes beyond just financial benefits as it fosters respect, recognition and leadership opportunities that elevate the dealers' roles within both their local communities. The social impact was studied under various components using a 5-point Likert scale comprising: 5 - to a very high extent; 4 - to high extent; 3 - to some extent; 2 - to low extent; 1 - to a very low extent (Table 4).

Leadership skills

Regarding leadership skills, the DAI trained dealers were agreed that the programme had a strong impact on their ability to motivate farmers (94.57 %), in-depth product knowledge and expertise (80.57 %), convincing ability to adopt innovative farm practices (80.28 %), empathy on unique needs and challenges of farmers (78.85 %) and products and maintain consistency in vendor relations to ensure product availability (71.14 %).

The DAI programme effectively equips dealers with leadership qualities and motivational skills. This ability to inspire and encourage farmers can lead to better adoption of recommended practices and increased productivity. Dealers reported improved communication skills, which enabled them to articulate the benefits of modern agricultural practices more effectively. This builds trust and rapport with farmers, fostering a positive environment for change and innovation. The programme successfully imparts detailed knowledge about agricultural inputs, enabling dealers to provide accurate and reliable information to farmers (4-6). This expertise enhances their credibility and trustworthiness. In-depth knowledge allows dealers to make better-informed decisions regarding product recommendations, leading to more effective and tailored solutions for farmers' needs.

The DAI programme fosters the development of persuasive communication techniques, which help dealers effectively promote new technologies and methods to farmers. The programme emphasizes understanding and addressing the specific concerns of farmers, fostering a customer-centric approach. This empathy helps build stronger relationships and trust between dealers and farmers. By empathizing with farmers, dealers can offer more personalized advice and solutions, enhancing the effectiveness of their recommendations and improving farmer satisfaction.

The DAI programme enhances dealers` supply-chain management skills, ensuring steady supply of quality products. This is critical for maintaining business operations and meeting farmers' needs. Building and maintaining strong relationships with suppliers ensures consistency in product availability (7). This is crucial for the dealer's reputation and for meeting the farmers' demands promptly.

Table 3. The selected ODL study centres and its enrolment details of DAI programme (2016-2021)

S. no.	ODL study centres	Number of student enrolments	Number of respondents selected
1.	DODL, Coimbatore	352	50
2.	ADAC & RI, Trichy	256	50
3.	ARS, Virinjipuram	241	50
4.	TRRI, Aduthurai	198	50
5.	RRS, Vridhachalam	192	50
6.	SWMRI, Kattuthottam	187	50
7.	NPRC, Vamban	143	50

Table 4. Impact of DAI programme on social status of trained dealers

S. no.	Statements	5	4	3	2	1
A)	**Leadership Qualities**					
1.	Motivational ability	166 (47.43)	165 (47.14)	10 (2.86)	5 (1.43)	4 (1.14)
2.	Empathy on unique needs and challenges of farmers	102 (29.14)	174 (49.71)	30 (8.57)	25 (8.57)	19 (7.14)
3.	In-depth product knowledge and expertise	130 (37.14)	152 (43.43)	38 (10.86)	22 (6.29)	18 (5.14)
4.	Convincing ability	116 (33.14)	165 (47.14)	40 (11.43)	15 (4.29)	14 (4.00)
5.	Maintain consistency on vendor relations for ensure the product availability	82 (23.43)	167 (47.71)	50 (14.29)	25 (7.14)	26 (7.43)
B)	**Managerial skills**					
1.	Strategic planning on market demands and customer needs	182 (52.00)	104 (29.71)	20 (5.71)	25 (7.14)	19 (5.43)
2.	Risk management	100 (28.57)	142 (40.57)	38 (10.86)	52 (14.86)	28 (8.00)
3.	Accountancy	116 (33.14)	155 (44.29)	50 (14.29)	11 (3.14)	18 (5.14)
4	Supply chain management	102 (29.14)	117 (33.43)	70 (20.00)	25 (7.14)	36 (10.26)
5.	Human resource management	139 (39.71)	122 (34.86)	18 (5.14)	37 (10.57)	34 (9.71)
6.	Financial management (pricing, inventory control and cost management)	132 (37.71)	141 (40.29)	21 (6.00)	34 (9.71)	22 (6.29)
C)	**Technical skills**					
1.	Follow up and supervision	87 (24.86)	187 (53.43)	53 (15.14)	21 (6.00)	12 (3.43)
2.	Proficiency in providing technical advice to the farmers	106 (30.29)	140 (40.00)	35 (10.00)	20 (5.71)	49 (14.00)
3.	Ability to explain technical information in understandable manner	103 (29.43)	154 (44.00)	9 (2.57)	60 (17.14)	24 (6.86)
D)	**Rapport building**					
1.	Call from the farmers	87 (24.86)	155 (44.29)	52 (14.86)	38 (10.86)	28 (8.00)
2.	Invitation for fairs/festivals	116 (33.14)	125 (35.71)	47 (13.43)	41 (11.71)	21 (6.00)
3.	Field visits	142 (40.57)	127 (36.29)	30 (8.57)	25 (7.14)	26 (7.43)
4.	Sharing personal problems	99 (28.29)	102 (29.14)	58 (16.57)	57 (16.29)	34 (9.71)
5.	Inviting for guest lecturer as a resource person	117 (33.43)	81 (23.14)	56 (16.00)	44 (12.57)	52 (14.86)
E)	**Social/self empowerment**					
1.	More confidence in dealing with people	175 (50.00)	107 (44.86)	42 (12.00)	18 (5.14)	13 (3.71)
2.	Increased public relation and social participation	131 (37.43)	136 (38.86)	27 (7.71)	35 (10.00)	21 (6.00)
3.	Get recognition in neighbourhood/ society	121 (34.57)	148 (42.29)	25 (7.14)	24 (6.86)	32 (9.14)
4.	Social networking with farmers, suppliers, agricultural experts and local authorities	159 (45.43)	102 (29.14)	38 (10.86)	37 (10.57)	14 (4.00)
F)	**Business principles and ethics**					
1.	Integrity	140 (40.00)	135 (38.57)	62 (17.71)	18 (5.14)	0 (0.00)
2.	Compliance on legal and regulatory requirements	171 (48.86)	147 (42.00)	17 (4.86)	15 (4.29)	0 (0.00)
3.	Providing quality inputs	161 (46.00)	158 (45.14)	25 (7.14)	6 (1.71)	0 (0.00)
4.	Giving correct recommendations	225 (64.29)	125 (35.71)	0 (0.00)	0 (0.00)	0 (0.00)

5 - to a very high extent; 4 - to high extent; 3 - to some extent; 2 - to low extent; 1 - to a very low extent

Managerial skills

In terms of managerial abilities, the DAI trained dealers felt that they had a stronger influence on strategic planning on market demands and customer needs (81.71 %), financial management (Pricing, inventory control and cost management) (78.00 %), accountancy (77.43 %), human resource management (74.57 %), risk management (69.14 %) and supply chain management (62.57 %).

The DAI programme effectively develops the dealers' ability to understand and anticipate market trends and customer preferences. This enables them to make informed strategic decisions that align with market demands. With enhanced strategic planning skills, dealers can tailor their product offerings and services to better meet customer needs resulting in increased customer satisfaction and loyalty. Dealers gain the skills for effective management of inventory as it reduces costs associated

with overstocking or stockouts, ensuring that products are available when needed without tying up too much capital in inventory.

The programme enhances dealers' abilities to maintain accurate financial records, which is crucial for tracking business performance and making informed financial decisions. Better accountancy skills ensure that dealers can comply with financial regulations and reporting requirements, reducing the risk of legal issues and enhancing business transparency (8). The programme helps dealers identify potential risks in their operations, such as market fluctuations, supply chain disruptions and financial uncertainties. With better risk management skills, dealers can develop strategies to mitigate these risks, ensuring business continuity and stability. Enhanced supply chain management skills enable dealers to streamline their operations, reducing delays and ensuring timely availability of products (9).

Technical skills

With regard to technical abilities, the DAI trained dealers felt greater influence on follow-up and supervision (78.29 %), improved ability to communicate technical information in an intelligible way (73.43 %) and enhanced capacity to adequately advise farmers on technical matters (70.29 %).

Agri-input dealers felt more capable of communicating technical information in an understandable way. The ability to convey complex technical information in a simple and understandable manner is crucial for effective farmer education. This skill ensures that farmers can easily grasp and apply new knowledge and techniques. Improved communication fosters better relationships between dealers and farmers. By ensuring that technical information is accessible, dealers can build trust and credibility with their customers. These enhanced technical abilities not only improve the dealers' service quality but also contribute to better agricultural practices and outcomes for farmers, ultimately leading to the overall advancement of the agricultural sector (10-12).

Rapport building

In terms of establishing rapport, the DAI trained dealers believed that they felt greater influence over a number of elements including home visits (76.86 %), call from the farmers (69.15 %), invitations to fairs and festivals (68.85 %), sharing personal issues (57.43 %) and inviting a guest lecture as a resource person (56.57 %).

Field visits allowed them to build personal connections with farmers, showing a commitment to understanding their specific needs and challenges. This personal touch fosters trust and strengthens relationships. This allowed them to provide more tailored advice based on direct farm observations and its conditions, enhancing the relevance and effectiveness of their recommendations. The willingness of farmers to call dealers indicates a high level of trust and accessibility. They were seen as reliable sources of information and support. Regular communication through phone calls helps maintain continuous engagement with farmers, enabling dealers to provide timely advice and support. Moreover, attending fairs and festivals of farmers provides opportunities for dealers to network with farmers and other stakeholders, enhancing their visibility and influence within the community.

The willingness of farmers to share personal issues indicates a deep level of trust and rapport. Dealers were viewed not just as business contacts but as trusted advisors and friends. Understanding personal issues allows dealers to offer more holistic support, addressing both professional and personal challenges faced by farmers, further strengthening the relationship. Thus, these enhanced rapport-building abilities not only improve the dealers' business prospects but also foster a supportive and integrated community environment (13).

Social / self empowerment

When it came to social and self-empowerment, the DAI programme trained dealers concurred that they experienced increased confidence in interacting with others (94.86 %), improved social participation and public relations (79.72 %), gained recognition in their society or neighbourhood (76.86 %) and social networking with farmers, suppliers, agricultural experts and local authorities (74.57 %).

Increased confidence allowed dealers to present themselves and their products more convincingly, facilitating better business negotiations and customer interactions. Improved public relations skills helped dealers build and maintain positive relationships with various community members and stakeholders, contributing to a favourable public image. The training and skills acquired through the DAI programme helped dealers establish a strong professional reputation, earning respect and recognition from their peers and community members. Recognition in society enhances dealers' credibility, making them trusted sources of agricultural inputs and advice (14). The DAI programme equips dealers with networking skills that help them build and expand their professional networks. This includes connections with farmers, suppliers, agricultural experts and local authorities. In this way, the DAI programme significantly enhances the social and self-empowerment of agri-input dealers.

Business ethics and principles

Regarding business ethics and principles, the DAI trained dealers felt that they had a greater impact on giving accurate recommendations (100 %), providing quality inputs (91.14 %), complying with legal and regulatory requirements (90.86 %) and maintaining integrity for acceptance mistakes (78.57 %).

The dealers agreement on giving accurate recommendations underscores the DAI programme's success in emphasizing the importance of providing precise and reliable advice to farmers (15). Accurate recommendations ensure that farmers can make correct decisions, leading to better agricultural outcomes (16-19). They were better able to provide quality inputs and it indicates that the programme instills a strong focus on quality assurance, ensuring that dealers supply high-quality agricultural inputs to farmers. Moreover, their behaviour on accepting mistakes fosters transparency and trust, both with customers and within the business. It demonstrates a commitment to continuous improvement and accountability. As a result, these higher ethical requirements strengthen the dealers' credibility and professional reputation.

Economic impact

The DAI programme serves as a catalyst for the economic empowerment of agricultural input dealers. By providing comprehensive training and fostering market linkages, the programme enhances the dealers' ability to generate higher incomes, expand their businesses and achieve financial stability (Table 5).

Table 5. Impact of DAI on economic status of trained dealers (n=350)

S. No.	Items	SA	A	UD	DA	SDA
1.	Income generation through sales and services	166 (47.43)	165 (47.14)	14 (4.00)	5 (1.43)	0 (0.00)
2.	Possibility of money savings	175 (50.00)	113 (32.29)	42 (12.00)	16 (4.57)	4 (1.14)
3.	Investment in inventory	131 (37.43)	136 (38.86)	37 (10.57)	35 (10.00)	11 (3.14)
4.	Gaining market linkages	121 (34.57)	180 (51.43)	25 (7.14)	24 (6.86)	0 (0.00)
5.	Access to credit facilities to expand business	159 (45.43)	107 (30.57)	38 (10.86)	37 (10.57)	9 (2.57)
6.	Financial stability through diversified income	170 (48.57)	115 (32.86)	42 (12.00)	18 (5.14)	5 (1.43)
7.	Achieving economic independence	131 (37.43)	142 (40.57)	37 (10.57)	26 (7.43)	14 (4.00)
8.	Enhancement of livelihood security	121 (34.57)	148 (42.29)	45 (12.86)	24 (6.86)	12 (3.43)
9.	Opportunity of purchasing farm implements	159 (45.43)	112 (32.00)	38 (10.86)	37 (10.57)	4 (1.14)
10.	Creation of assets	165 (47.14)	107 (30.57)	47 (13.43)	18 (5.14)	13 (3.71)

SA - strongly agree; **A** - agree; **UD** - undecided; **DA** - disagree; **SDA** - strongly disagree

The DAI trained dealers strongly believed that the DAI program had a significant influence on their ability to generate income through sales and services (94.57 %), gain market linkages (86.00 %), money savings (82.29 %), achieve financial stability through diversified income (81.43 %), achieve economic independence (78.00 %), assets creation (77.71 %), purchase farm implements (77.43 %), improve livelihood security (76.86 %), invest in inventory (76.29 %) and access to credit facilities to expand their business (76.00 %) (Table 4).

The training provided by the DAI program equipped dealers with the skills and knowledge necessary to boost their sales and improve their service offerings, leading to increased revenue. The programme facilitated connections between dealers and potential buyers, suppliers or other market players thereby expanding their market reach and business opportunities. Dealers reported saving money through improved financial planning, cost control techniques and business practices, owing to their exposure to effective business models through the DAI programme (20-23).

Their financial stability was improved by the DAI program's encouragement or facilitation of diversification in their company operations, which lessened their reliance on a single source of income. Moreover, the DAI programme also facilitates the dealers for credit accessibility because it is crucial for business expansion as it allows dealers to invest in new opportunities, scale their operations and enhance their overall business potential. Thus, the DAI program helped enhance their overall economic security and quality of life, possibly by stabilizing their income and reducing financial uncertainties.

Conclusion

The DAI program's influence on social empowerment, leadership qualities and economic stability highlights its role in transforming the socio-economic landscape of agri-input dealers. This underscores the importance of maintaining and scaling such educational interventions. From all of these findings and discussions, we can conclude that the DAI program has significantly improved the trained dealers' capacity to earn revenue, save money and attain financial stability. Additionally, by facilitating market connections, asset building and credit facility access, the program has helped agri-input dealers become more financially independent and secure in their entire way of life.

Acknowledgements

The authors thank the Department of Agricultural Extension and Rural Sociology (DAE & RS) and the Directorate of Open and Distance Learning (DODL), Tamil Nadu Agricultural University, Coimbatore for providing direction and technical support during the research process.

Authors' contributions

KS contributed to conceptualization, methodology, data curation and writing of the original draft. BP was involved in conceptualization, supervision, funding acquisition and writing and editing. SN contributed to conceptualization, methodology, supervision and validation. GSR was responsible for software and formal analysis, while SPS provided resources, validation and visualization. All authors read and approved the final manuscript.

Compliance with ethical standards

Conflict of interest: Authors do not have any conflict of interests to declare.

Ethical issues: None

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the authors used ChatGPT to improve the language and readability. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the final version of the publication.

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Additional information

Peer review: Publisher thanks Sectional Editor and the other anonymous reviewers for their contribution to the peer review of this work.

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