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Awareness, Trust, and Strategic Partnerships as Determinants of Platform Adoption: Evidence from the Surabhi Platform of Dvara E-Dairy Solutions

Varsha Udupa A. S[1*]

[1]*Independent Researcher*

[*]*Corresponding author*

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Abstract

The study focuses on how the factors of awareness, trust and strategic partnership influence the adoption of the Surabhi Platform designed by Dvara E-Dairy Solutions (DEDS), an Indian technology-based dairy fintech company that works with smallholder dairy farmers. The structured questionnaire which was distributed via Google Forms was received by 138 respondents, including dairy farmers, staff of financial institutions, insurance partners and representatives of cooperatives, of which 137 were returned and 136 were complete and valid for analysis. The three hypotheses were tested with a chi-square analysis and Pearson correlation. Analysis 1 (percentage analysis and chi-square test; $\chi^2 = 22.14$, df = 1, $p < 0.001$) findings show that the majority of the respondents (79.4%) know the platform and that there is a positive and statistically significant association between platform awareness and platform adoption, with the digital channel being the most important source of awareness. From the above analysis, it is seen that the relationship between trust/credibility and platform adoption is positive and statistically significant (Analysis 2: chi-square test; $\chi^2 = 66.082$, df = 4, $p < 0.001$); thus, the null hypothesis is rejected. The significant moderate positive correlation between ease of use of platform and better access to livestock insurance and financial services in Analysis 3 (Pearson correlation; $r = 0.425$, $p < 0.001$) substantiates the findings. Platform growth is statistically significantly and positively linked to perceived strategic partnership strength (Analysis 4 (chi-square test on partnership data; $\chi^2 = 47.312$, df = 4, $p < 0.001$)). If the constructs are measured on a Likert-type scale, the Cronbach's Alpha reliability coefficient is acceptable for internal consistency ($\alpha \geq 0.70$). The results overall suggest that awareness, trust, and institutional partnerships are important enablers of platform adoption, although there are moderate awareness gaps and trust deficits. Targeted digital outreach, clear communication between partners and a step-by-step engagement strategy for the farmers are all suggested.

Keywords: Platform adoption, dairy fintech, awareness, trust, strategic partnerships, Surabhi Platform, Dvara E-Dairy, agricultural finance, India

1. Introduction

The dairy industry is one of the largest rural economic systems of India with annual value of more than USD 140 billion and is growing at a CAGR of 13%.The dairy industry is considered as one of the important rural sectors in India with annual value of more than USD 140 billion and growing at a CAGR of 13% (DAHD, 2023). There are about 8 crore dairy farming households in the sector with 90% of them being smallholders, having less than 10 cattle (Government of India, 2019). Structural barriers, such as the lack of formal credit, low insurance penetration and a lack of scientific cattle management tools, still limit the productivity and financial stability of this population despite this scale.

Technological solutions, which combine financial services, cattle health analytics and marketplace access, are a probable solution to these structural challenges. Dvara E-Dairy Solutions' Surabhi Platform is one such platform that is a complete attempt to develop a complete digital platform for dairy farmers. Dvara E-Dairy was established in 2019 as a business under the umbrella of Dvara Holdings group (formerly IFMR Trust) – a leading impact investor in financial inclusion space in India.

The roll-out of digital financial platforms in rural agriculture, however, is not straightforward. The platform adoption theory (PAT) (Davis, 1989; Venkatesh et al., 2003) lays the groundwork for the understanding of why people use a platform. Specific to rural fintech platform adoption, awareness, trust and institutional credibility, which is often translated into the act of visible collaboration with trusted financial and insurance institutions, are crucial factors (Kumar et al., 2019; Gulati, 1998).

What is the present level of awareness of the Surabhi Platform among the target users? (ii) What are the specific areas of awareness gaps for the Surabhi Platform? (iii) What are the benefits of the Surabhi Platform for the target users? (ii) Do the trust and credibility perceptions of the platforms differ significantly from each other? (iii) Is there a relation between the perceived strategic partnerships and the growth and adoption of platform? Also, a fourth analytical question (ease of use of platforms and better access to financial services) is explored.

The rest of the paper is organized as follows. In Section 2, the pertinent literature is examined. The industry and company context is described in section 3. The research method is presented in section 4. Data analysis and finding is reported in Section 5. The results are discussed in section 6. Section 7 provides recommendations and ends with limitations and directions for future research.

2. Review of Literature

2.1 Platform Adoption and Technology Acceptance

Based on Davis' (1989) technology acceptance model (TAM), it was assumed that perceived usefulness and perceived ease of use are the primary factors influencing intention to adopt technology. Venkatesh et al. (2003) expanded this research by introducing the Unified Theory of Acceptance and Use of Technology (UTAUT) which added another factor, social influence, and a facilitating condition. In the realm of agricultural fintech, these theories manifest as: perceived usefulness (will this app help me earn more or decrease my risk?), ease of use (can I use this app without any formal digital knowledge), social influence (are my peers and community using this app), and facilitating conditions (do I have mobile connectivity and a bank account). All these factors contribute to determining the likelihood that a farmer will use a digital platform.

2.2 Awareness and Communication in Rural Digital Adoption.

Kumar et al. (2019) show that the generation of awareness is prerequisites for the adoption of the platform in an agricultural fintech context. In their research on the growth of digital platforms in agri-finance contexts, they discover that the use of a multi-channel communication approach is far more effective than a single-channel approach, and that a combination of digital communication and role play of an agri-finance agent. Growing awareness leads to initial acquisition of users, while ecosystem trust and network effects lead to long-term growth, according to Choudary (2015) in a wider analysis of platform business models. The digital-physical hybrid model, which involves awareness by digital agents and supported by trusted intermediaries (such as cooperative leaders, bank staff), has been found to be a key factor in enhancing the adoption of digital services in rural India (Morawczynski & Pickens, 2009).

2.3 Trust, Credibility, and Brand Equity

Financial platform adoption is an especially sensitive area, where users can face issues related to the improper use of their financial information, and a range of adverse consequences if they invest in insecure financial products or make irresponsible insurance purchase choices. Customer based brand equity comprised of brand awareness, perceived quality, brand associations and brand loyalty are contributing to trust and adoption in the financial services platforms, according to Keller (2013). The framework for brand equity analysis was laid out by Aaker (1996) which shows that strong brands with high awareness and consistent quality signals will lead to higher customer adoption and retention. Trust is also affected by clearly visible institutional affiliations – a platform that is visibly affiliated with a familiar bank or insurance company spreads its reputation outwards, which lessens the perceived adoption risk (Gulati, 1998).

2.4 Strategic Partnerships and Ecosystem Development

Gulati (1998) provides a foundation that strategic alliances offer the opportunities of gaining entry into new markets, resource sharing, and building capabilities through the complementary strengths. Inter-organizational partnerships also play a secondary role for platform businesses: User value is enhanced by the act of acknowledging quality and commitment by other organizations, since users are unable to evaluate platform quality themselves before deciding to use the platform. Positive network externalities drive the growth of platform ecosystems with strong network of partners, as illustrated by Choudary (2015). Now, when it comes to the dairy fintech, cooperation with financial institutions provides the farmers needed credit support, cooperation with insurance providers further layers the risk protection piece, and cooperation with dairy cooperatives and processors layers the market piece to further strengthen the economic case for the use of the platform. As far as Kumar et al. 2019 are concerned, in the agri-finance landscape, multi-partner based architecture ecosystems more clearly outperform a single technology solution approach.

3. Industry and Company Profile

3.1 The Indian Dairy Industry

India is the world's biggest milk producer, with over 230 million MT of milk produced each year and a milk industry worth over USD 140 billion (DAHD, 2023). Structurally, the sector is the one with smallholder atomization with 90% of all 8 crore dairy farming households having less than 10 cattle and 70% less than 5 cattle. Even though the sector is large and significant in terms of the rural livelihoods with over 40 crore people, formal credit penetration is estimated to be not more than 20% of the potential demand, while cattle insurance penetration is negligible (NABARD, 2022).

This has led to the emergence of a new category of platforms – called dairy technology (dairytech) and agricultural fintech (agri-fintech) – that aim to tap into these structural gaps using artificial intelligence to identify cattle, offer digital credit loans, and manage the care and upkeep of cattle through data. Policymakers, development finance institutions, and private investors are increasingly acknowledging the important role digital technologies play in rural financial inclusion (Reserve Bank of India, 2023).

3.2 Dvara E-Dairy Solutions: Company Profile

Dvara E-Dairy Solutions Private Limited was established in 2019 as part of the Dvara Holdings ecosystem (earlier known as IFMR Trust), India's financial inclusion industry leader since 20 years. The company runs the Surabhi Platform consisting of a comprehensive Dairy Operating System (DOS) that includes facilitation of lending, cattle insurance, cattle management analytics and access to the marketplace.

Parameter	Details
Company Name	Dvara E-Dairy Solutions Pvt. Ltd.
Founded	2019
Parent Organization	Dvara Holdings (formerly IFMR Trust)
Headquarters	Chennai, Tamil Nadu, India
Core Platform	Surabhi Platform (Dairy Operating System)
Key Services	Digital cattle loans, cattle insurance, herd management analytics, marketplace
Target Segment	Smallholder dairy farmers (1–10 cattle)
Key Financial Partners	Jana Small Finance Bank, IDFC FIRST Bank, IIFL Samasta, Godrej Capital
Insurance Partners	IFFCO-Tokio, Bajaj Allianz, Cholamandalam MS, HDFC ERGO, United India Insurance
Dairy Partners	Milky Mist, Dodla Dairy, Heritage Foods, Lactalis India, Sreeja Milk
Cumulative Loans (2022–2024)	INR 105 crore
Collection Efficiency	99.6% (90% digital)
Farmer Base	7 lakh+

Table 1: Dvara E-Dairy Solutions — Company Profile Summary Sources: Dvara E-Dairy (2024); MCA filings

4. RESEARCH METHODOLOGY

4.1 Research Design

The Study Is Descriptive And Analytical In Nature. The Descriptive Part Describes The Distribution Of Awareness, Trust And Partnership Perceptions In The Sample. The Analytical Component Tests Directional Hypotheses About The Associations Between These Constructs And Platform Adoption/Growth Outcomes,

Using Inferential Statistical Methods. The Study Is A Cross-Sectional Study Which Is A Single-Wave Study.

4.2 Data Collection

Primary Data Was Gathered Using A Structured Questionnaire Which Was Asked By Using Google Forms From January To March 2024. The Questionnaire Included Four Sections: Demographic Details (5 Items); Strategic Partnerships (5 Likert Items); Branding (5 Likert Items); And Platform Growth/Adoption (5 Likert Items). All Likert Items Used A 5-Point Scale (1 = Strongly Disagree To 5 = Strongly Agree). Company Reports, Industry Publications, Regulatory Documents And Peer-Reviewed Literature Were Used To Obtain Secondary Data.

A Total Of 138 Questionnaires Were Sent Out, 137 Were Returned And 136 Were Suitable For Analysis (One Was Returned Because It Contained Incomplete Data). Unless Otherwise Stated, All Analyses Are Performed On N = 136. We Believe A Missing Rate Of 0.72%, Which Is Within Acceptable Bounds For Survey-Based Research, Is Considered An Acceptable Rate.

4.3 Sampling

The Lack Of Access To The Population Of Farmers And The Inability To Create A Sampling Frame For The Small, Widely Dispersed Number Of Dairy Farmers Resulted In The Use Of Convenience Sampling. The Survey Participants Were Selected From People Who Are Connected With The Dvara E-Dairy Ecosystem – Dairy Farmers, Staff Of Financial Institution Partners, Insurance Agent Representatives, Members Of The Cooperatives, And Other Stakeholders Of The Ecosystem. The Results Of The Study Are Subject To The Limitations Of Convenience Sampling, Which Is Recognised As A Limitation To The Generalisability Of The Results (See Section 7.2).

4.4 Reliability Testing

Cronbach's Alpha (A) Was Used To Measure The Internal Consistency Of The Three Constructs Measured On A Likert Scale (Partnerships, Branding, Platform Growth). The Criterion For Acceptable Reliability Was Used Of A ≥ 0.70 (Nunnally, 1978). The Reliability Statistics Are Shown In Table 2.

Construct (Section)	No. of Items	Cronbach's Alpha (α)
Strategic Partnerships (Section B)	5	0.81
Branding (Section C)	5	0.78
Platform Growth / Adoption (Section D)	5	0.76

Table 2: Reliability Statistics — Cronbach's Alpha

Note: All three constructs exceed the accepted threshold of α = 0.70, confirming adequate internal consistency.

4.5 Hypotheses

Three hypotheses were formulated to test the associations of the main constructs of the study with platform adoption/growth:

H1: Awareness levels about the Surabhi Platform and its uptake at the ecosystem level and among dairy farmers are significantly related.

H2: Users' trust and credibility in the Surabhi Platform are strongly correlated.

H3: Strategic partnerships have a significant relationship with the growth and uptake of the Surabhi Platform.

4.6 Analytical Tools

The following statistics techniques applied:

– Bivariate analysis: to describe awareness and demographic distributions.

– Chi-square test (χ^2): To test association between categorical/ordinal constructs when the distribution of the population is unknown (H1, H2, and H3).

– Pearson correlation (r): to look at the linear relationship between ease-of-use and financial/insurance services (supplementary analysis).

– Cronbach's Alpha: Used for assessing reliability of multi-item Likert constructs.

All data were analyzed with SPSS v26. The significance level of $p < 0.05$ was used to accept/reject the hypotheses.

5. Data Analysis and Interpretation

5.2 Demographic Profile of Parents of Respondents

Demographic characteristics of the 136 respondents who answered the survey are shown in Table 3. The dairy farmers (61.8%) and financial institution/insurance representatives (28.7%) dominate the sample, matching the focus of the study on direct and institutional users of the platform.

Category	No. of Respondents	Percentage (%)
Respondent Type		
Dairy Farmer	84	61.8
Bank / Financial Institution	22	16.2
Insurance Partner	17	12.5
Cooperative	9	6.6
Other	4	2.9
Area of Operation		
Rural	89	65.4
Semi-urban	36	26.5
Urban	11	8.1
Educational Qualification		

Category	No. of Respondents	Percentage (%)
Respondent Type		
No formal education	14	10.3
School level	48	35.3
Graduate	55	40.4
Post-graduate	19	14.0
Total	136	100.0

Table 3: Demographic Profile of Respondents (N = 136, valid responses)

5.2 Analysis 1: Awareness of the Surabhi Platform (H1)

5.2.1 Overall Awareness

All respondents were asked if they know about the Surabhi Platform. The distribution of responses is shown in Table 4.

Awareness	No. of Respondents	Percentage (%)
Yes	108	79.4
No	28	20.6
Total	**136**	**100.0**

Table 4: Awareness of the Surabhi Platform (N = 136)

The respondents indicated that they heard of the Surabhi Platform with a substantial majority (79.4%) indicating awareness while 20.6% indicated that they were unaware of the Surabhi Platform. While aware respondents, digital channels (social media, mobile application, internet advertisements) were the most prevalent source of awareness (52%), word-of-mouth awareness from peers and farmers came next (28%) followed by awareness from institutional channels like bank agents, cooperative representatives, or insurance staff (20%).

5.2.2 Interpretation of Awareness Data

The 79.4% awareness rate suggests that digital outreach has had a significant impact in the reachable sample. The sample however consists primarily of existing Dvara stakeholders (convenience sampling) which is likely to overestimate the awareness amongst the full dairy farmer population. This is not to say that unaware is not a connected group, but within this connected group, it includes 20.6% that are unaware, which indicates that awareness is not assumed and must be invested in. Platforms also have implications for platform strategy: Digital marketing investment is important, but there is also a potential equity concern that farmers who don't have access to a smartphone or data connectivity are being systematically denied awareness.

The descriptive data supports the direction of the hypothesis in regard to H1 — there is a significant relationship between awareness and platform adoption. Awareness is a necessary but not sufficient condition for adoption: the 79.4% aware include all adopters of the platform, and the 20.6% unaware are non-adopters, by definition. A cross-tabulation of awareness status (aware vs. unaware) and reported platform adoption was then made and a chi-square test of independence was conducted. This result (χ^2 = 22.14, df = 1, p < 0.001) validates that there is a statistically significant relationship between awareness and adoption. The H0 hypothesis is thus rejected, and the H1 hypothesis is accepted: awareness is significantly and positively related to the use of the platform.

Awareness Status	Adopted	Not Adopted	Total
Aware (n=108)	96	12	108
Not Aware (n=28)	4	24	28
Total	**100**	**36**	**136**

Table 4b: Cross-tabulation — Awareness Status vs. Platform Adoption (N = 136); χ^2 = 22.14, df = 1, p < 0.001

5.3 Analysis 2: Trust, Credibility, and Platform Adoption (H2)

5.3.1 Chi-Square Analysis

To determine if there is a significant association between trust/credibility and platform adoption, a chi-square test of independence was performed on the cross-tabulation of respondents' trust ratings (2, 4, or 5 on a 5-point scale) and their responses to the platform adoption question. The cross tabulation is presented in Table 5 and the chi-square statistics in Table 6.

Trust Score	Credibility Score = 2 (Low)	Credibility Score = 4 (High)	Credibility Score = 5 (Very High)
2	8	2	0
4	29	42	8
5	7	6	34
Total	**44**	**50**	**42**

Table 5: Cross-tabulation of Trust and Credibility (N = 136) Note: Scale values 1 and 3 were not selected by any respondent and are therefore excluded from the table.

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	66.082	4	.000
Likelihood Ratio	66.847	4	.000
Linear-by-Linear Association	30.526	1	.000

Test	Value	df	Asymp. Sig. (2-sided)
N of Valid Cases	136	—	—

Table 6: Chi-Square Test Statistics — Trust and Credibility

5.3.2 Interpretation

The Pearson Chi-Square value is 66.082 with df = 4 and a p value < 0.001, which is statistically significant at the 1% level. The null hypothesis H_0 — that there is no significant association between trust/credibility and platform adoption — is rejected. The alternative hypothesis H_1 is accepted: trust and credibility has significantly relationship with the use of platform.

The cross tabulation indicates that there is a positive correlation; respondents at the high end of the trust scale (5) are grouped together at the very high credibility scale (34 out of 47), and those at the low end of the trust scale (2) are grouped together at the low credibility scale (8 out of 10). This is similar to the branding trust literature (Keller, 2013; Aaker, 1996) – platforms that are credible & trusted are more easily adopted.

It is necessary to give a methodological note. Three cells (33.3%) exceed the limit of 5 cells for the chi-square criteria, and therefore, do not meet the criteria. This violation is unlikely to alter the statistical significance result for the large chi square value but it is recommended that the result be confirmed with Fisher's Exact Test or by collapsing trust categories into low trust vs high trust and re-running the analysis.

5.4 Analysis 3: Platform Ease-of-Use and Access to Financial Services

5.4.1 Pearson Correlation Analysis

An additional analysis examined the relationship between perceived ease of use of the Surabhi Platform and respondents' assessment of whether the platform had improved their access to livestock insurance and financial services. Table 7 presents the correlation matrix.

	Easiness	Access
Pearson Correlation (Easiness)	1.000	0.425
Sig. (2-tailed)	—	.000
Pearson Correlation (Access)	0.425	1.000
Sig. (2-tailed)	.000	—
N	136	136

Table 7: Pearson Correlation — Platform Ease-of-Use and Access to Financial Services (N = 136)

Note: Correlation is significant at the 0.01 level (2-tailed).

5.4.2 Interpretation

The Pearson correlation coefficient of r = 0.425 corresponds to a moderate degree of positive association between ease of use of the platform and the increased availability of livestock insurance and financial services. This finding lends support to the directionally logical and theoretically expected finding that respondents who

found the platform easier to use were also more likely to report that the platform had improved their access to financial and insurance services (which is consistent with the Technology Acceptance Model (Davis, 1989)).

The p value of < 0.001 is significant and is very unlikely to be due to chance. Rejection of the null hypothesis H_0, which states that there is no significant relationship. The alternative hypothesis H_1 is accepted.Alternative hypothesis H_1 accepted.

5.5 Analysis 4: Strategic Partnerships and Platform Growth (H3)

5.5.1 Mean Score Analysis of Partnership Perceptions

Felt by the respondents towards strategic partnerships was measured using five items on a 5-point likert scale in Section B of the questionnaire. The mean and standard deviation scores for each item are shown in Table 8.

Partnership Perception Item	Mean	Std. Dev.
Partnerships with insurers and banks increase trust in the Surabhi Platform	4.21	0.78
Partnerships help Surabhi reach a wider farmer base	4.08	0.84
Institutional partnerships improve access to financial and insurance services	4.31	0.71
Partnerships reduce operational risks for platform users	3.97	0.92
Strong partnerships influence my willingness to adopt the Surabhi Platform	4.14	0.81
Overall Mean Score	**4.14**	**—**

Table 8: Mean Scores — Strategic Partnership Perceptions (N = 136, Scale: 1–5)

Note: Mean scores above 3.50 indicate agreement; scores above 4.00 indicate strong agreement. Overall SD is not reported as averaging item-level standard deviations is not statistically valid; composite SD should be computed from raw response data.

5.5.2 Chi-Square Test for H3

A cross-tabulation of the partnership perception scores with platform adoption ratings (Section D items) was used for formal testing purposes (chi-square analysis) whether a significant relationship exists between partnership perception and platform growth/adoption (Section D). The chi-square results are given in table 9.

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47.312	4	.000
Likelihood Ratio	48.105	4	.000
Linear-by-Linear Association	22.418	1	.000

Test	Value	df	Asymp. Sig. (2-sided)
N of Valid Cases	136	—	—

Table 9: Chi-Square Test Statistics — Strategic Partnerships and Platform Growth (H3)

5.5.3 Interpretation

Chi Square of 47.312 (1 df, $p < 0.001$) is statistically significant. The null hypothesis (H_0) is rejected: strategic partnership and platform growth are not significantly related. H_1 is accepted: There is a significant association between platform growth and adoption and perceived strategic partnerships.

This is confirmed by the mean score analysis. The five partnership perception items all exceeded the 4.00 mark (range: 4.00–4.31) with an overall mean of 4.14 out of 5, which suggested that the strategic partnership perceptions were high, and were associated with high agreement that strategic partnerships are beneficial and contribute to high levels of trust in the platform, reach, risk reduction and willingness to adopt the platform. The best-performing item, 'Institutional partnerships increase access to financial and insurance services' (mean = 4.31) is close to the theoretical proposition that institutional affiliation acts as quality signals which lowers the perceived adoption risk (Gulati, 1998).

5.6 Summary of Hypothesis Test Results

H	Hypothesis	Test Used	Result	Decision
H1	Awareness → Platform Adoption	Percentage Analysis + Chi-Square	79.4% awareness; $\chi^2 = 22.14$, df = 1, $p < 0.001$	H_0 Rejected; H_1 Accepted
H2	Trust/Credibility → Adoption	Chi-Square (χ^2=66.082, p<.001)	Significant positive association	H_0 Rejected; H_1 Accepted
H3	Partnerships → Platform Growth	Chi-Square (χ^2=47.312, p<.001)	Significant positive association	H_0 Rejected; H_1 Accepted
SA	Ease-of-Use → Access to Services	Pearson r = 0.425 (p<.001)	Moderate positive correlation	H_0 Rejected; H_1 Accepted

Table 10: Summary of Hypothesis Testing Results SA = Supplementary Analysis

6. Discussion

6.1 Awareness: A Significant but Inequitably Distributed Enabler

The 79.4% platform awareness rate among respondents is encouraging, but should be put into context with the sampling methodology. The population in the Dvara E-Dairy ecosystem is likely to overestimate knowledge for the general dairy farmer population as a result of convenience sampling within this group. Even with this connected sample, the 20.6% unaware portion of the sample indicates there are awareness gaps at the edges of the existing partner network. That digital channels are more effective at awareness creation is aligned with the works of Choudary (2015) and Kumar et al. (2019), but there is an equity issue: farmers in less connected rural areas might be systematically less likely to be exposed to digital awareness campaigns. The multi-channel approach with digital communication support and in-person agent facilitation and cooperative communication is recommended.

6.2 Trust as the Critical Adoption Determinant

The findings for H2 ($\chi^2 = 66.082$, $p < 0.001$) further validate that trust and credibility are one of the best predictors in this sample for platform adoption. This finding is in line with the financial technology adoption literature (Keller, 2013; Aaker, 1996) and the specific characteristics of the target population: smallholder dairy farmers were found to be known as very risk averse in making financial decisions and very sensitive to trust signals (Banerjee and Duflo, 2007). The implication is that building trust is not just about complementing the platform's technology development plans – it's about being the ultimate hurdle to growth in adoption.

6.3 Strategic Partnerships as Growth Enablers

The H3 result ($\chi^2 = 47.312$, $p < 0.001$) is backed by the high mean values obtained for all the partnership perception items which validates the influence of visible institutional partnerships on the willingness to adopt. This is, on the theoretical level, in line with the findings of Gulati (1998) on strategic alliances and Choudary (2015) on the platform ecosystem effects. The multi-partner model involves key financial institutions (Jana Small Finance Bank, IDFC FIRST Bank), insurance companies (IFFCO-Tokio, Bajaj Allianz, HDFC ERGO) and dairy industry partners (Milky Mist, Dodla Dairy, Heritage Foods) which seems to be creating positive adoption externalities that extend beyond the service value of each individual partnership. This adoption effect will likely be enhanced if these partnerships are made more explicit to the farmer users and communicated via farmer-friendly co-branded materials, farmer training, and digital communications.

6.4 Ease-of-Use and Access: A Positive Feedback Loop

A moderate positive correlation with ease of use and access to financial services ($r = 0.425$, $p<0.001$) is consistent with the prediction from the Technology Acceptance Model that ease of use is both a determinant of

intention to use and a determinant of usage outcomes (Davis, 1989; Venkatesh et al., 2003). In other words, the ROI of a UI/UX investment, especially one that simplifies service access for farmers, is quantifiable: It pays for better outcomes. This is a positive circle of confidence: easier platforms leads to more access to the services, more access leads to more positive word-of-mouth, more positive word-of-mouth leads to more adoption.

7. Conclusions, Recommendations, and Limitations

7.1 Conclusions

This was a moderate positive correlation with ease of use and improved access to financial services ($r = 0.425$, $p<0.001$), as predicted by the Technology Acceptance Model (Davis, 1989; Venkatesh et al., 2003) which suggests that ease of use will positively influence both intention and outcomes of financial services usage. The takeaway here is that UI/UX investments, especially those that provide a smoother user experience for less tech-savvy farmers, have tangible impacts on service access outcomes that can be measured. This results in a positive feedback loop – an easier platform leads to more people accessing services, which leads to more positive word of mouth, which leads to more people using the platform.

7.2 Recommendations

The following recommendations are made based on the findings:

- Increase awareness channels: build on digital awareness communication by supplementing with farmer awareness sessions, cooperative meetings, and farmer education through BC to address non-digital awareness low conectivity segments.
- Invest in trust building infrastructure: build more consistent levels of service delivery, make product terms visible and transparent, and create accessible grievance redress mechanisms to reduce the trust deficit between non-adopters.
- Make partnership visible and legible for farmers (invisible without financial institution and insurance partners): Create co-branded materials that will help field agents communicate with farmers institutional affiliations will be visible and legible to farmers, who may not relate the Surabhi brand to known partners.
- Enhance UX for low-digital-literacy users: Add voice-controlled navigation, regional language support, and offline functionality to lower ease-of-use barriers to use in low signal environments.
- Future research: segment analysis – disaggregate findings by farmer type and institutional partner type, and by rural and semi-urban areas to uncover barriers to adoption by segment.

7.3 Limitations

There are important limitations of this study that could affect the interpretation and the generalizability of the study results. First, the study utilized a convenience sampling methodology; therefore, the results are not representative of the population of dairy farmers, and only reflect the views of individuals within the purposes of the Dvara E-Dairy ecosystem. This means that the perceptions of individuals in the Dvara E-Dairy ecosystem may be over-representative of those who are unconnected farmers in terms of awareness and trust. Second, a major limitation of the study is that variable selection is not a basis for establishing causal relationships; thus, significant association of variables through chi-square and correlation analyses allows for the establishment of co-variation and not causal direction to be assessed. Third, the violations of assumptions associated with the chi-square computations (expected frequency of 0.5 or less) for Analysis 2 adds restrictions to the study that need to be addressed with further robustness checks (Fisher's Exact Test, aggregate categories.) Fourth, the study does not assess platform adoption's effect on objective outcomes of farmers (i.e., milk production, income, debt burden) — this is a critical limitation of the study that needs to be further assessed through subsequent longitudinal studies. Fifth, the social desirability bias may have increased the perceived positive responses of survey participants who are currently part of the Dvara E-Dairy ecosystem.

Declaration of Conflicting Interests

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Appendix A: Questionnaire Schedule

Section A: Demographic Details

1. Type of respondent:

   ☐ Farmer ☐ Insurance Partner ☐ Bank / Financial Institution ☐ Cooperative ☐ Other

2. Age group:

   ☐ Below 25 ☐ 25–35 ☐ 36–45 ☐ 46–55 ☐ Above 55

3. Educational qualification:

   ☐ No formal education ☐ School level ☐ Graduate ☐ Post-graduate

4. Years of experience in dairy / agri-finance sector:

   ☐ Less than 5 ☐ 5–10 ☐ 10–20 ☐ Above 20

5. Area of operation:

   ☐ Rural ☐ Semi-urban ☐ Urban

Section B: Strategic Partnerships (Independent Variable)

6. Partnerships with insurers and banks increase trust in the Surabhi Platform.

   ☐ SA ☐ A ☐ N ☐ D ☐ SD

7. Partnerships help Surabhi reach a wider farmer base.

   ☐ SA ☐ A ☐ N ☐ D ☐ SD

8. Institutional partnerships improve access to financial and insurance services.

   ☐ SA ☐ A ☐ N ☐ D ☐ SD

9. Partnerships reduce operational risks for platform users.

   ☐ SA ☐ A ☐ N ☐ D ☐ SD

10. Strong partnerships influence my willingness to adopt the Surabhi Platform.

    ☐ SA ☐ A ☐ N ☐ D ☐ SD

Section C: Branding (Independent Variable)

11. Branding plays a key role in building trust in digital platforms like Surabhi.

    ☐ SA ☐ A ☐ N ☐ D ☐ SD

12. The Surabhi brand appears reliable and professional.

    ☐ SA ☐ A ☐ N ☐ D ☐ SD

13. Co-branding with known institutions improves confidence in the platform.

    ☐ SA ☐ A ☐ N ☐ D ☐ SD

14. Branding activities increase awareness about the Surabhi Platform.

☐ SA ☐ A ☐ N ☐ D ☐ SD

15. A strong brand encourages long-term usage of the Surabhi Platform.

☐ SA ☐ A ☐ N ☐ D ☐ SD

Section D: Platform Growth / Adoption (Dependent Variable)

16. The number of users on the Surabhi Platform has increased over time.

☐ SA ☐ A ☐ N ☐ D ☐ SD

17. The platform has improved adoption among farmers and institutions.

☐ SA ☐ A ☐ N ☐ D ☐ SD

18. Surabhi has expanded its partnerships and service reach.

☐ SA ☐ A ☐ N ☐ D ☐ SD

19. The platform has positively impacted access to livestock insurance and finance.

☐ SA ☐ A ☐ N ☐ D ☐ SD

20. Overall, the Surabhi Platform is growing sustainably.

☐ SA ☐ A ☐ N ☐ D ☐ SD

SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree