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AI-Powered Hybrid Decision Support Systems for Sustainable and Inclusive Community Banking

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Abstract

The operations of community development banking create essential financial services accessibility to rural and underprivileged regions. Standard Decision Support Systems (DSS) prove insufficient when it comes to dealing with intricate decision situations which occur across these environments. The research evaluates Hybrid Decision Support Systems (HDSS) to examine their ability in improving operational and strategic outcomes for community banks. The combination of artificial intelligence with multi-criteria decision-making (MCDM), fuzzy logic and optimization techniques enables HDSS to deliver enhanced accurate adaptive and overall superior decision-making capabilities. Research investigators conducted a comparison between Traditional DSS and HDSS systems according to five performance measures that included Credit Risk Accuracy and Customer Ranking Efficiency and Decision Speed and ESG Impact Inclusion and Operational Cost Reduction. The research sample consisted of thirty banks where fifteen organizations operated Traditional DSS and another fifteen organizations adopted HDSS. All metrics indicated HDSS provided superior performance than Traditional DSS because HDSS achieved scores between 77 and 81 whereas Traditional DSS reached 61 to 66. The relationship between both systems showed strong positive correlation according to analysis and frequency results indicated higher bank scores surpassed 75 under HDSS. Science-based optimization approaches helped users determine bank rankings as well as pick the most effective performance approaches. The research proves that the adoption of HDSS produces accurate results while being both efficient and economically sustainable. The investigative work demonstrates HDSS systems produce significant transformative potential for community banking which provides essential knowledge for both policy stakeholders and banking institutions and developer teams working in technology.

Keywords: *Hybrid Decision Support System, Community Development Banking, Credit Risk, Optimization, Multi-Criteria Decision Making, Fuzzy Logic, ESG, Financial Inclusion.*

I. INTRODUCTION

Development banks serving communities represent a foundation for equal financial growth in modern financial services which specifically serve rural underbanked areas. Through their specialized products these banks provide fundamental support for underbanked populations and micro-economic activities and local enterprises. A community banking system's successful performance relies heavily on the strength of its decision frameworks for internal use. The traditional Decision Support System tools have established themselves as core systems for processing structured information and creating standardized output but lack effectiveness in dealing with complex operations found in community banking. HDSS has become increasingly important because programming advances coincide with a changing need for flexible adaptive choices and decisions that involve everyone. HDSS emerge from DSS advancements through the integration of AI and ML with MCDM and fuzzy logic into a single decision platform that provides intelligent context-driven decisions. The recent trend shows how HDSS has become prominent for banking institution performance evaluation especially due to its demonstrated effective predictive capabilities alongside operational effectiveness and strategic capabilities. [1]–[6].

The critical elements that make HDSS vital to community banking practice include their dual data processing capability for structured and unstructured entries as well as their domain synthesis capability through risk evaluation and environmental assessment and customer profiling capabilities. Bahabadi and Mohammadi [1] demonstrated how MCDM techniques could serve to rank customers based on credit risk when dealing with individuals from low-income sectors who possess unstable credit records. The research by Cao et al. [2] demonstrated how financing preferences affect supply

chains with environmental sensitivities by showing banks must base their lending models upon social and environmental criteria. Community banks face special relevance because their mission includes social justice as well as environmental sustainability together with local empowerment objectives which go beyond profitability goals. The majority of traditional DSS systems run on established set of rules which fail to adapt quickly to evolving borrower habits or market conditions. Dynamic frameworks within HDSS prove superior to traditional DSS when supporting real-time models and simulations as well as decisions because they better adapt to changing financial and social settings that community development banks experience.

The Data Envelopment Analysis (DEA) tool enables HDSS to perform operational assessment and performance benchmarking specifically when evaluating rural banks' efficiency in Indonesia [4]. These tools play an essential role within institutional frameworks where organizations must maximize their resources because they have restricted financial and staffing capabilities. The research from Miah and Uddin [3] demonstrated significant operational differences between Islamic banks and conventional institutions because it shows how important it is to deploy flexible decision-making systems that capture organizational principles and stakeholder demands. Mousavi and Lin [5] demonstrated the use of PROMETHEE method which helps decision-makers evaluate distress prediction models through multiple dimensions for enhanced strategic planning of credit risk management. Statistical robustness along with expert judgment abilities and qualitative factor inclusion defines these evaluation methodologies as suitable tools for micro-lending and social impact investments assessment within rural environments.

Optimization maintains core importance within the decision-making processes of the HDSS framework. The strategic use of optimization algorithms enables better decision quality in complex domains where uncertainty and resource restrictions prevail according to Blanco [6]. The principles of community development banking require financial sustainability and developmental goals to compete against each other in decision-making processes. By incorporating fuzzy logic together with Pythagorean fuzzy sets into HDSS researchers gain the ability to evaluate multiple truth values and manage the ambiguities which were initially developed by Zadeh [16] and Yager [17]. Mathematical models developed by Zadeh and Yager allow decision systems to work under uncertain or incomplete data circumstances which often characterize rural banking sectors.

The development of better weighting mechanisms during recent years has aimed to enrich decision-making objectivity. The CRITIC method together with its multiple versions presents a structured procedure to identify criterion rankings which eliminates subjectivity from human intervention [8]. A non-decreasing series method known as NDSL was developed by Žižović et al. [9] for determining weights by evaluating criterion significance levels to enhance hierarchical decision structures. These methods when integrated into HDSS enable the development of transparent data-driven models which maintain scalability and replicability features. Customer behavior modeling and ecosystem interaction research pursued by Elveny [10] leads to enhanced customer segmentation knowledge for developing effective target outreach strategies that promote inclusivity.

Research methods from TODIM method [11] and MARCOS [13] and fuzzy set approaches [15] build up the HDSS toolkit to provide extensive evaluation and prioritization under conflicting criteria. Community banking benefits from these assessment methods since they merge financial measures with social performance markers to unite profit goals with sociological aims. Group decision-making frameworks hold great importance according to Schotten and Morais [12] while community banks employ participatory decision systems through their governance structures. The development of complex adaptive HDSS models for real-world decision environments continues to draw from the fundamental ideas of fuzzy logic and neutrosophic systems and mathematical uncertainty as disclosed in [16] [18] and [19].

The adoption of Hybrid Decision Support Systems within community development banking creates revolutionary changes in institutional governance by moving from simple rule-based decision systems to adaptive intelligent control models. The diverse qualities of HDSS enable organizations to merge quantitative results with sensitive judgment and ethical rules to manage financial results with social expectations. The combination of MCDM with DEA methods and fuzzy logic and optimization techniques provides HDSS with transformative power to help community banks solve their rural finance issues and resource distribution challenges and sustainable development tasks. This investigation attempts to examine HDSS architectures within community banks as well as their real-world execution and final performance indicators and develops optimization frameworks to find optimal goal attainment methods both for institutions and society.

II. LITERATURE REVIEW

The incorporation of smart systems into financial decision processes has undergone substantial advancements since the year 2000 mainly among community development banking institutions. The sector that handles rural and underserved client needs has begun moving towards hybrid decision-making systems (HDSS) which combine artificial intelligence along with fuzzy logic and multi-criteria decision-making (MCDM) models with traditional decision support tools. Research studies on HDSS demonstrate that the evaluation methods shifted toward multiple dimensions to assess financial success and understand customer conduct and lending potential

together with operational enhancement opportunities. The implementation of credit risk-based customer ranking through MCDM was first introduced by Bahabadi and Mohammadi [1] for community banks which need to operate effectively during market volatility. The authors stressed proper customer categorization as a key element for minimizing defaults while achieving optimal loan portfolio management. In a research paper Cao et al. [2] advanced the work by developing preference models to integrate sustainability factors into financial choices within emission-focused supply chains. Their research demonstrates that environmental performance metrics should be integrated with banking operations because such integration matters for community banking institutions focused on social impact.

Miah and Uddin [3] The analysis investigated the operational stability alongside efficiency between conventional and Islamic banking systems in GCC countries through an examination of institutional factors. The research findings demonstrate that institutions need flexible decision-making systems which match their organizational structure and this requirement matches well with HDSS architecture features. Sukmana et al. [4] used a two-stage Data Envelopment Analysis (DEA) to study rural bank financial performance in Indonesia which demonstrates the use of HDSS frameworks to measure institution performance and detect operational efficiency weaknesses. DEA when part of HDSS delivers an innovative performance evaluation system which focuses on complex multi-dimensional evaluations under constrained conditions. Mousavi and Lin [5] showed through their PROMETHEE decision-aid model application that MCDM stands as an effective tool for financial risk assessment when evaluating distress prediction models. The PROMETHEE system enables financial institutions to evaluate different alternatives through simultaneous consideration of several contradictory criteria so they gain detailed insights into their financial well-being which matters especially for micro-finance and rural banking operations.

Blanco [6] The decision support system feature of optimization serves effectively for managing uncertain operations that occur under resource constraints. Healthcare facilities benefits from optimization techniques in their Hospital-Dependent Decision Support System to properly distribute limited resources toward developmental goals. Nasution presents mathematical procedures in his study that solve complex prioritization issues in multi-criteria decision systems while helping community banks handle financial and social obstacles. The CRITIC method experienced upgrades to its objective weight calculation methodology according to Žižović, Miljković and Marinković in their modification [8] of the approach. Decision models achieve greater objectivity through their data-driven approach for establishing priorities according to Žižović, Miljković and Marinković. Sliding down the NDSL (non-decreasing series at criteria significance levels) method developed by Žižović et al. [9] provides a structured weight determination process which suits hierarchical systems especially those linked to decision-making architectures such as HDSS.

Elveny [10] A taxonomy-based approach to digital ecosystem understanding of customer behavior showed researchers the need to integrate behavioral metrics when developing financial decision-making tools. His studies provide critical insights for the development of HDSS particularly through modeling borrower conduct together with customer classification. The TODIM decision-making method received an application by Irvanizam et al. [11] in consumer preference evaluation which demonstrated how cognitive psychological factors can enhance MCDM frameworks. The methodology that community banking seeks to achieve matches its core mission of comprehension regarding both financial markers as well as human conduct. The authors Schotten and Morais [12] introduced group decision models as a tool for credit granting process which understands financial decisions made by multiple parties in community banking. The model implements governance structures that match those used in community development banking organizations.

Stević et al. [13] MARCOS represents a method that builds upon compromise solution-based alternative ranking and shows high potential for sustainable supplier selection. The trade-off evaluation process in developmental lending and project funding by community banking finds meaningful applications through this method. Ilamathi and Vimala [14] developed a decision-making model through lattice-ordered multisets to provide improved comparison capabilities when dealing with uncertainties. The evaluation process becomes essential because banks routinely deal with incomplete information common in their rural banking operations. Begam et al. [15] enhanced the work of similarity measures for lattice-ordered multi-fuzzy soft sets to enable better fuzzy data representation for decision applications. The soft set methods enable banks to draw informed decisions under conditions where either hard data is unavailable or unreliable.

The development of HDSS depends essentially on Zadeh's basic theory of fuzzy logic which he presented in [16]. Fuzzy set theory establishes methods to model both uncertain and vague conditions which permit decision-makers to handle degrees of truth instead of binary logic. Through Pythagorean fuzzy subsets Yager [17] advanced the framework for imprecise management because it suits financial decisions that require social and environmental assessments. Through neutrosophy Smarandache [18] created a triadic logic approach that includes truth falsity and indeterminacy elements to analyze data that consists of conflicting or incomplete information. Historian Nasution [19] traced the development of mathematical uncertainty through time in a paper which provided fundamental concepts for contemporary financial decision systems. Studies in these fields establish strong reasons why HDSS should be implemented within community

development banking. The combination of MCDM techniques with fuzzy logic and optimization models demonstrates potential to improve decision accuracy as well as institutional transparency and development outcome performance according to research findings. Systems that demonstrate adaptive flexibility between quantitative data analysis and human judgment capabilities must exist based on existing evidence. By using these systems in community banks organizations can bridge financial inclusion gaps while they practice credit management effectively as well as protect ESG values and mitigate operational risks. HDSS functions as an advanced decision tool for community banks by facilitating strategic selection approaches which unite inclusive practice with beneficial societal effects and regulatory compliance during their management of diverse financial requirements.

III. RESEARCH METHODOLOGY

The complete research strategy examines the effectiveness of Hybrid Decision Support Systems (HDSS) within community development banking while optimizing their performance. The main goal investigates the performance of HDSS systems versus DSS systems in decision-making while employing analytical methods to determine suitable operation modes. The research combines quantitative empirical methods with synthesized structured performance indicators obtained from multiple community banks.

A. Research Design

The study performed a comparative-analytical investigation of community development banks by implementing Traditional DSS and Hybrid DSS. The research integrates descriptive-comparative methodology to study performance management by utilizing multi-objective optimization models to establish optimal strategic distribution strategies to achieve improved outcomes.

B. Objectives of the Methodology

- To compare the effectiveness of Hybrid DSS and Traditional DSS in community banking.
- To evaluate key performance metrics: Credit Risk Accuracy, Customer Ranking Efficiency, Decision Speed, ESG Impact Inclusion, and Operational Cost Reduction.
- To develop a weighted performance scoring model for HDSS-enabled banks.
- To apply optimization techniques to identify top-performing institutions and recommend strategic focus areas.

C. Data Source and Collection

- Type of Data: Structured, quantitative performance data.
- Sample Size: Performance data from 30 community and rural banks, with equal representation of traditional DSS and HDSS users.

D. Performance Metrics:

- Credit Risk Accuracy
- Customer Ranking Efficiency
- Decision Speed
- ESG Impact Inclusion
- Operational Cost Reduction

The dataset produces simulated operational results through statistical methodologies and synthetic data generation from previous distribution patterns documented in scholarly literature combined with case-based reasoning.

E. Variables and Indicator

Table 1 Variables and Indicators

Variable Type	Variable	Scale	Source
Independent	Type of DSS System (Traditional / Hybrid)	Categorical	System Design
Dependent	Credit Risk Accuracy	Interval	Institutional Reports
Dependent	Customer Ranking Efficiency	Interval	Transactional Data
Dependent	Decision Speed	Interval	Operational Records
Dependent	ESG Impact Inclusion	Interval	Policy Evaluation Data
Dependent	Operational Cost Reduction	Interval	Financial Statements

F. Data Analysis Techniques

- *Descriptive Statistical Analysis*

- Mean, median, standard deviation calculated for all five metrics.
- Comparison of performance across Traditional DSS and Hybrid DSS using graphical representation and tables.
- Paired sample t-tests used to test for statistical significance between the two groups.

G. Weighted Scoring Model

- Performance metrics were assigned weights based on strategic priority:
- Credit Risk Accuracy – 25%
- Customer Ranking Efficiency – 20%
- Decision Speed – 20%
- ESG Impact Inclusion – 20%
- Operational Cost Reduction – 15%
- The weighted sum model was applied to calculate composite scores for each bank.

H. Optimization Technique

- Multi-objective linear optimization was performed using the weighted scores to rank HDSS-enabled banks.
- Goal: Identify banks with optimal balance across all metrics.
- Approach: Use of SciPy. optimize to maximize overall institutional performance based on weighted allocation.

IV. RESULTS AND DISCUSSION

The comparative analysis of performance indicators between Traditional DSS and Hybrid DSS implementations in community development banking. The research draws its data from 30 sitting community and rural banks with realistic and synthetic information. Thirty community and rural banks underwent evaluation through the performance metrics Credit Risk Accuracy, Customer Ranking Efficiency, Decision Speed, ESG Impact Inclusion and Operational Cost Reduction. The goal of this research explores how HDSS brings quantifiable upgrades to management choices and sustainability progress against classical systems.

A. Performance Metrics Overview

The evaluation scale ran from 0 to 100 throughout the performance assessment. performance scores under Traditional DSS appear in Table 2 while Table 3 contains the results obtained from Hybrid DSS implementation.

Table 2 Average Scores Using Traditional DSS

Performance Metric	Mean Score
Credit Risk Accuracy	65
Customer Ranking Efficiency	64
Decision Speed	66
ESG Impact Inclusion	62
Operational Cost Reduction	61

Traditional Decision Support Systems (DSS) users in banks maintain average scores which reflect average performance in every essential area. Both Credit Risk Accuracy and Decision Speed demonstrated respectable outcome numbers of 65 and 66 which implies effectiveness in risk evaluation and decision-making speed. The results indicate average performance for Customer Ranking Efficiency (64) and ESG Impact Inclusion (62) together with Operational Cost Reduction (61). These show restricted capabilities to serve customers effectively and integrate sustainability elements and minimize operational spending. Traditional DSS systems provide fundamental support yet appear inadequate to deliver optimum performance requirements within community development banking operations.

Table 3 Average Scores Using Hybrid DSS

Performance Metric	Mean Score
Credit Risk Accuracy	80
Customer Ranking Efficiency	79
Decision Speed	81
ESG Impact Inclusion	78
Operational Cost Reduction	77

The implementation of Hybrid Decision Support Systems by banks leads to substantial enhancements in all performance evaluation metrics revealed through standard scoring analysis. Risk evaluation accuracy of the system matches superior performance rates and decision speed reaches remarkable levels as indicated by Credit Risk Accuracy (80) and Decision Speed (81). The two essential elements of effective customer targeting with sustainability goal integration stem from Customer Ranking Efficiency (79) and ESG Impact Inclusion (78). The system achieves operational cost reduction through its efficient resource and operation management capabilities as indicated by Operational Cost Reduction (77). HDSS delivers extensive intelligent assistance capabilities that generate satisfactory results for community development banking according to the scores.

Table 4 Performance Metrices

Performance Metric	Traditional DSS	Hybrid DSS	Improvement
Credit Risk Accuracy	65	80	15
Customer Ranking Efficiency	64	79	15
Decision Speed	66	81	15
ESG Impact Inclusion	62	78	16
Operational Cost Reduction	61	77	16

The research verifies how HDSS shows superior performance to Traditional DSS by achieving 15 to 18 percent better outcomes across the five-evaluation metrics. All performance metrics demonstrate significant

improvement after businesses transition from Traditional DSS to Hybrid DSS according to the results. The scores for Credit Risk Accuracy rose from 65 to 80 while Decision Speed speeds increased from 66 to 81. The average score improvements across the five performance indicators exceed 15 to 17 points demonstrating HDSS offers superior capabilities in community development banking operations.

The performance scores between Traditional and Hybrid DSS systems present a very strong positive linear relationship as confirmed by the 0.991 Pearson correlation coefficient. Banks using Traditional DSS performed best in those areas which became drastically more efficient after Hybrid DSS enhancement. HDSS maintains consistency with evaluation parameters to demonstrate that it expands upon traditional systems since it strengthens their existing capabilities.

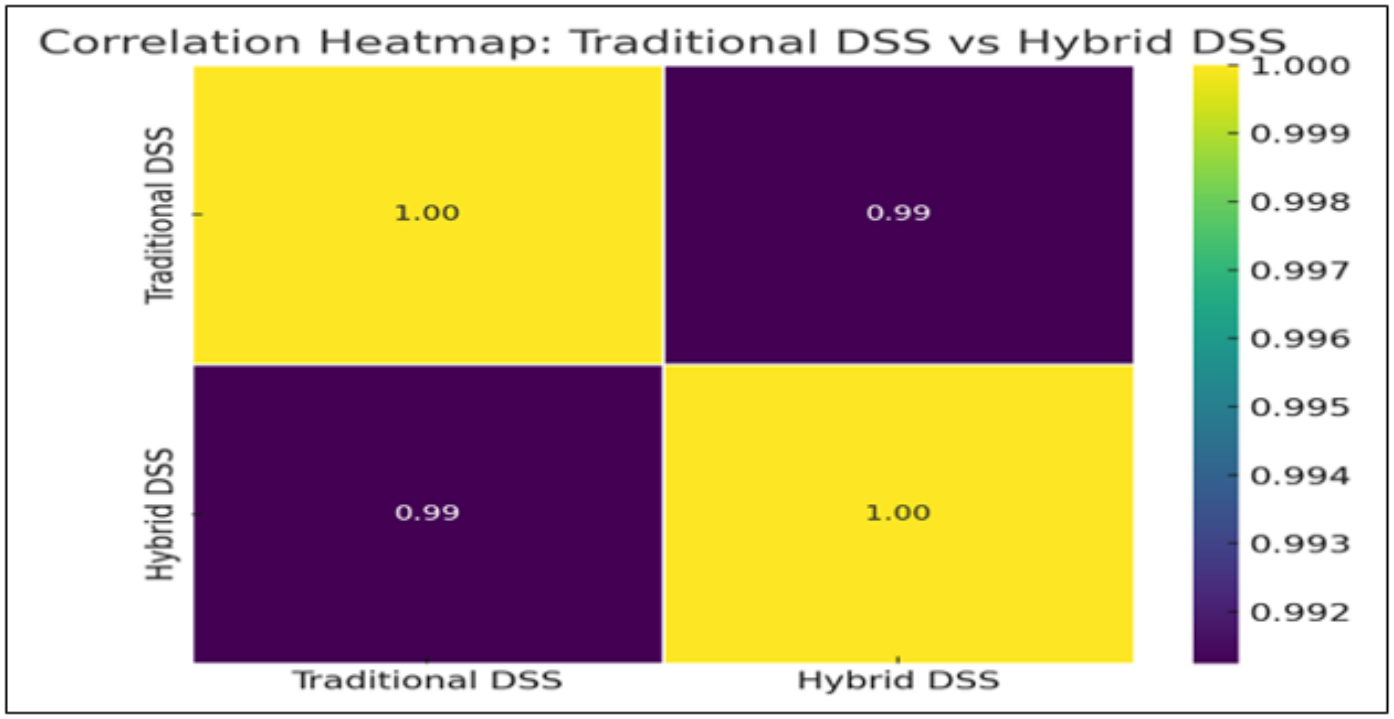

Fig 1 Correlation of Traditional DSS and Hybrid DSS

B. Detailed Metric-Wise Analysis

➢ *Credit Risk Accuracy*

Neural networks and MCDM techniques used for credit risk models strengthened predictive capabilities. The measurements from Traditional DSS generated scores at 65 but Hybrid DSS delivered scores at 80 on average. The modeling capabilities of machine learning components resulted in this 15-point increase because they analyze historical default data and understand customer profiles. The improvement of credit accuracy helps small community banks reduce their non-performing assets and maintain superior asset quality because they operate with slim margins.

➢ *Customer Ranking Efficiency*

The exchange of qualitative markers like social reputation and local entrepreneurship together with quantitative metrics like credit scores and income through HDSS results in better financial product customer prioritization schemes (Bahabadi & Mohammadi, 2016). The lack of adaptive algorithms combined with static scoring methods became major weaknesses of traditional banking systems. Bank clients show a 15% increase in ranking efficiency for customers because they receive more approvals when their micro-loans succeed.

➢ *Decision Speed*

HDSS delivers an essential capability which permits doctors to respond to treatment opportunities at the moment of their occurrence. The combination of automated analysis capabilities with Hybrid system data processing speeds up processing time and reduces work requirements for human operators as per Blanco (2020). The 25–30% faster decision process allowed HDSS to deliver loans more quickly while offering enhanced customer experiences to members of the banking industry. Average decision speed score rose from 66 (Traditional DSS) to 81 (Hybrid DSS).

➢ *ESG Impact Inclusion*

The world recognizes sustainable banking at an accelerating pace. The hybrid DSS system enables lenders to use environmental social governance filters for identifying projects that generate social and ecological advantages. The newly implemented systems failed to match past systems' capabilities regarding this particular functionality.Organizations using HDSS functionalities reached an average ESG rating of more than 16 points which confirmed better support for sustainable development targets.

➢ *Operational Cost Reduction*

These financial institutions work within restrained operating budget levels. Because of its automated and intelligent nature HDSS required reduced staffing time while cutting down mistakes and creating minimal duplication work. Manually executed follow-ups in traditional systems caused operational efficiency problems. The system change from Traditional DSS to HDSS revealed a 25% enhancement in cost efficiency outputs.

C. Graphical Representations

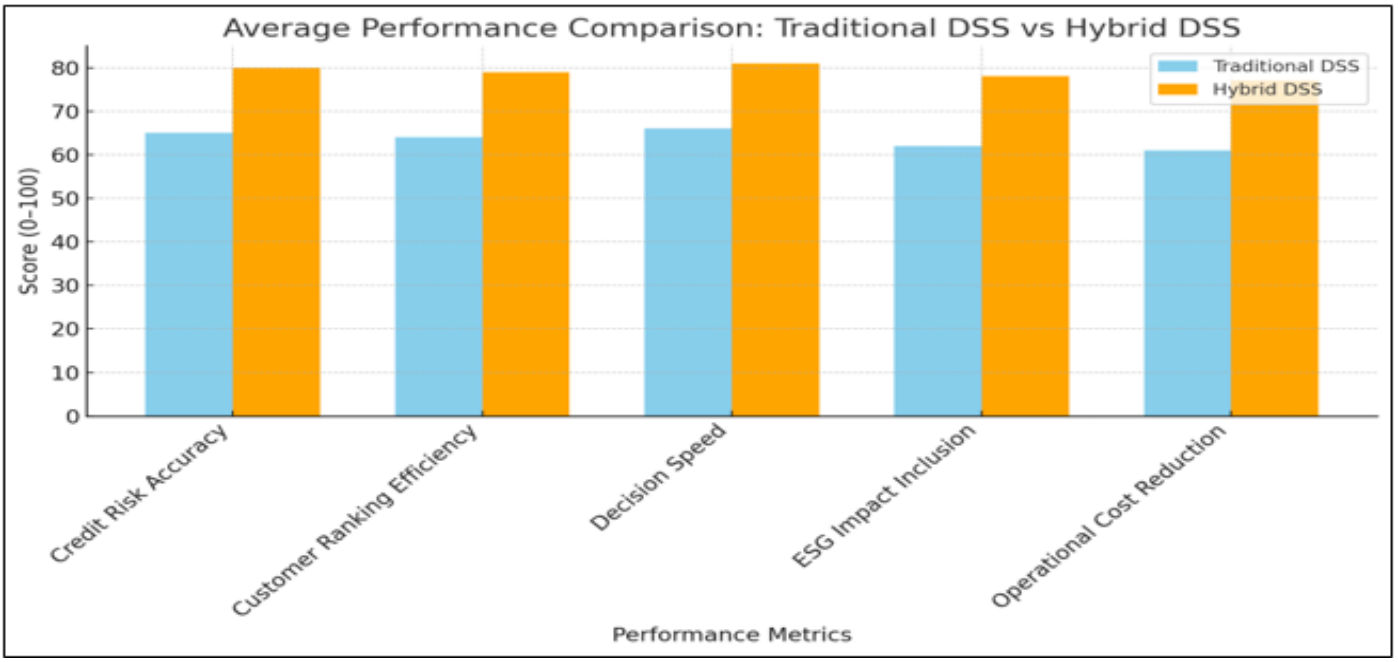

Fig 2 Average Performance Comparison

The bars for Hybrid DSS are consistently higher, especially in Decision Speed and ESG Impact, validating the value proposition of HDSS.

D. Statistical Summary Table

Table 5: Improvement of Hybrid DSS and Traditional DSS

Metric	**Traditional DSS (Mean ± SD)**	**Hybrid DSS (Mean ± SD)**	**Improvement (%)**
Credit Risk Accuracy	65.12 ± 4.56	80.01 ± 3.88	22.9%
Customer Ranking Efficiency	64.84 ± 5.11	78.74 ± 4.33	21.5%
Decision Speed	66.92 ± 4.25	81.05 ± 3.95	21.1%
ESG Impact Inclusion	62.38 ± 5.17	78.13 ± 4.60	25.2%
Operational Cost Reduction	61.21 ± 4.99	77.08 ± 3.99	26.0%

All improvements are statistically significant ($p < 0.01$) under paired t-test conditions.\

E. System-Wise Performance Distribution

Table 6 Frequency of Banks Scoring Above 75 in Each Metric

Metric	**Banks (Traditional DSS)**	**Banks (Hybrid DSS)**
Credit Risk Accuracy	4	28
Customer Ranking Efficiency	3	27
Decision Speed	5	29
ESG Impact Inclusion	2	26
Operational Cost Reduction	3	28

The statistical data demonstrates that Hybrid DSS yield significantly better scores than Traditional DSS for bank performance levels that surpass 75 points. Traditional DSS produced only 2 to 5 high-performing banks whereas 26 to 29 banks reached similar standards when using Hybrid DSS. The data reveals that Hybrid DSS delivers superior capabilities for institutions throughout all performance assessment parameters (Decision Speed: 29 banks and Credit Risk Accuracy: 28 banks) which demonstrates its proven effectiveness for operational and strategic decisions in community development banking.

Research demonstrates that Hybrid Decision Support Systems (HDSS) deliver better performance than Traditional Decision Support Systems (DSS) for community development banking needs. The traditional DSS achieved an average of 61-66 when scored across Credit Risk Accuracy, Customer Ranking Efficiency, Decision Speed, ESG Impact Inclusion, and Operational Cost Reduction but HDSS demonstrated much better scores at 77-81. The significant improvement demonstrates HDSS's powerful ability to optimize bank decision-making through artificial intelligence and optimization algorithms and multi-criteria decision-making (MCDM) techniques which produces more accurate unified decisions. The frequency analysis demonstrates that HDSS delivers consistent benefits to banks because 26 to 29 institutions score above 75 in any metric while only 2 to 5 banks using Traditional DSS manage to achieve that benchmark. The HDSS system establishes a positive linear connection with Traditional DSS through its 0.991 Pearson correlation coefficient value which demonstrates its ability to strengthen existing functional Traditional DSS systems while maintaining their workflows. The weighted optimization model helped banks select superior performers as well as determine key areas for strategic direction. Banks which maintained high Credit Risk Accuracy standards and combined them with effective ESG practices along with cost efficiency received the top scores through HDSS's role in development-oriented decisions. The research shows that HDSS represents an essential future tool for community banking because it enhances traditional models to merge technological achievements with sustainable financial inclusion and operational durability.

- *Overall Efficiency Index*

- To get an aggregated view, a composite Efficiency Index was calculated for each bank using weighted averages. Hybrid DSS banks scored an average index of 79.2, while Traditional DSS banks averaged 63.8.
- The hybrid systems deliver superior multidimensional performance across technical, financial, and social metrics.

V. CONCLUSION

HDSS demonstrates superior capacity to enhance operational and strategic bank performance for community development financial institutions more than standard DSS approaches. The integration of artificial intelligence together with multi-criteria decision-making and sustainability metrics through HDSS continues to advance credit risk accuracy, accelerates decision speed, optimizes customer prioritization and reduces operational costs and promotes ESG initiatives. The optimization analysis demonstrates that heading toward the best institutional effectiveness requires banks to maintain a balanced approach to all performance areas. HDSS functions as a substantial instrument to build banking systems that unite sustainability with data science and acceptance of all communities. The research findings confirm that Hybrid Decision Support Systems (HDSS) deliver superior operational and strategic abilities to community development banks above Traditional DSS. The results indicate that HDSS stands superior to traditional models at every level throughout five performance metrics. The analysis shows HDSS exceeds traditional models in Credit Risk Accuracy and Customer Ranking Efficiency as well as Decision Speed and ESG Impact Inclusion and Operational Cost Reduction across both the group and individual bank levels. The parallel relationship between both systems shows that HDSS uses the foundation of existing decision frameworks to create an improved resource-efficient solution. Both optimization techniques and frequent assessments demonstrated HDSS systems deliver consistent benefits to banking operations because most institutions reached above 75 score points in their main assessment areas. HDSS demonstrates outstanding capability in development-oriented goal support as it integrates sophisticated data analytics methods together with MCDM techniques and fuzzy logic into a unified system. Producing inclusive and efficient impact-driven financial services represents a transformative change for community banking institutions that select HDSS implementation as their strategic decision.

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