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A Study on Enhancing Operational Efficiency through Business Analytics at SLVA Investments

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ABSTRACT: In the contemporary financial services landscape, Non-Banking Financial Companies (NBFCs) face growing pressure to improve operational efficiency as transaction volumes increase and customer expectations evolve. This study examines how business analytics can enhance operational efficiency at SLVA Investments, a registered NBFC operating across Tamil Nadu and Andhra Pradesh. Primary data was collected from 109 employees using a structured 5-point Likert-scale questionnaire and analysed using percentage analysis, pivot table analysis, Chi-square tests, and one-way ANOVA.

Key findings reveal that 83.49% of respondents identified data entry errors as the most critical inefficiency driver, 87.16% valued MIS reports as essential monitoring tools, and 76.14% confirmed that manual processes constitute a primary operational bottleneck. The ANOVA test revealed a highly significant departmental variation in analytics productivity perception ($F = 8.54, p < 0.001$), with the Operations department recording the lowest mean score (2.696), indicating a critical analytics exposure gap. The study concludes that integrating business analytics through automation, dashboards, upgraded MIS systems, and targeted training can substantially improve operational productivity, reduce process delays, and enhance decision-making quality.

I. INTRODUCTION

In the contemporary business landscape, organizations are compelled to operate with greater precision, speed, and data awareness than ever before. Operational efficiency — the ability to deliver maximum output with minimum waste of resources, time, and effort — has become a cornerstone of competitive advantage. For financial services organizations, particularly Non-Banking Financial Companies (NBFCs), operational efficiency is not merely a strategic aspiration but an operational imperative.

NBFCs in India handle diverse and complex operational workflows encompassing customer documentation, credit evaluation, loan processing, regulatory compliance, MIS reporting, and interdepartmental coordination. Even marginal inefficiencies in these workflows can cascade into significant service delays, increased costs, and reduced customer satisfaction. According to Davenport (2006), organizations that compete on analytics demonstrate superior operational performance and decision quality compared to their peers.

SLVA Investments, a registered NBFC headquartered in Gudiyattam, Vellore district, Tamil Nadu, was founded in 2014 and operates branches in Vellore (Tamil Nadu) and Palamaner (Andhra Pradesh). The organization's operations are centred on loan processing, credit evaluation, customer documentation management, and MIS reporting. Like many small NBFCs, it relies heavily on manual processes and spreadsheet-based reporting, creating measurable operational inefficiencies. This study investigates employee perceptions of current operational processes, identifies key inefficiency drivers, evaluates the perceived utility of various analytics tools, and provides evidence-based recommendations for improving operational efficiency through business analytics implementation.

II. REVIEW OF LITERATURE

- Davenport (2006) demonstrated that organizations adopting business analytics improve operational performance through data-driven decision making. His research highlighted that analytics adoption leads to better process control and improved organizational effectiveness. McAfee and Brynjolfsson (2012) found that data-driven firms demonstrate higher productivity and are more capable of improving internal processes while reducing operational delays.
- Wamba et al. (2019) established that organizations with strong analytics capabilities perform significantly better in managing operations and improving efficiency. Chen et al. (2012) discussed the importance of business intelligence systems in improving operational performance, finding that BI tools help organizations generate reports, monitor KPIs, and enhance workflow efficiency.
- Turban et al. (2020) emphasized that decision support systems improve coordination and reduce operational errors, while Provost and Fawcett (2013) highlighted that predictive analytics significantly improves organizational forecasting and operational planning. Porter (1985) affirmed that operational efficiency is essential for achieving competitive advantage through optimization of internal processes and improved resource utilization.
- Raiyani (2011) studied operational efficiency in Indian banking institutions and found that technology adoption significantly improves operational processes. Saini (2024) found that financial analytics helps improve fraud detection and operational monitoring in financial institutions. A review of existing literature reveals a significant gap in research examining analytics adoption in small, district-level NBFCs in India, which this study addresses.

III. RESEARCH METHODOLOGY

Research Design

The study adopted a descriptive and analytical research approach using quantitative primary data. This method was selected because it enables systematic examination of current operational conditions and employee perceptions without altering ongoing processes — making it particularly appropriate for identifying real-world operational challenges in a functioning financial organization.

Data Collection and Sampling

Primary data was collected in March 2026 through a structured questionnaire distributed to employees of SLVA Investments via Google Forms, enabling efficient data collection across the organization's multiple branches. From the total workforce across all branches, 109 respondents were selected using convenience sampling. The response rate was approximately 85–90% of invited employees, representing a substantial proportion of the total workforce.

Questionnaire Structure

The questionnaire comprised six sections: Section A captured demographic information (gender, age, department, work experience); Sections B–D contained 11 Likert-scale items (1 = Strongly Disagree to 5 = Strongly Agree) covering operational process perceptions, operational challenges, and analytics perception; and Sections E–F captured training requirements and open-ended suggestions.

Statistical Tools

Data was analysed using percentage analysis (Microsoft Excel), Chi-square tests of association, and oneway ANOVA (SPSS). Pivot table analysis was used for cross-tabulation of group-level patterns. All hypotheses were tested at the 5% level of significance ($\alpha = 0.05$).

Hypotheses

Six null hypotheses were formulated and tested: (H₀₁) No significant association between gender and analytics implementation willingness; (H₀₂) No significant association between department and efficiency perception; (H₀₃) No significant association between work experience and manual process perception; (H₀₄) No significant difference in analytics productivity perception across departments; (H₀₅) No significant difference in MIS utility perception across experience groups; (H₀₆) No significant difference in automation perception across age groups.

IV. DATA ANALYSIS AND INTERPRETATION**Demographic Profile of Respondents**

The study sample of 109 respondents comprised 64 males (58.72%) and 45 females (41.28%), reflecting the typical workforce composition in the NBFC sector. The workforce is predominantly young, with 66.05% of employees below 30 years of age — a profile highly conducive to technology adoption and analytics initiatives.

Table 1: Demographic Profile of Respondents

Demographic Variable	Category	No. of Respondents	Percentage (%)
Gender	Male	64	58.72
	Female	45	41.28
Age Group	Below 25 Years	38	34.86
	25–30 Years	34	31.19
	30–40 Years	25	22.94
	Above 40 Years	12	11.01
Department	Finance	35	32.11
	Administration	25	22.94
	Operations	23	21.10
	Customer Support	14	12.84
	Field Executive	12	11.01
Work Experience	0–1 Year	28	25.69
	1–3 Years	23	21.10
	3–5 Years	24	22.02
	Above 5 Years	33	30.28

Likert Scale Response Analysis

The response distributions for all 11 Likert-scale items revealed clear patterns in employee perceptions of operational processes and analytics tools.

Table 2: Likert Response Distribution — Key Operational Questions

Q. No.	Statement	Agree + Strongly Agree (%)	Neutral (%)
Q3	Manual processes slow down work	76.14	22.94
Q4	Approval processes take too much time	77.98	21.10
Q5	Data entry errors affect efficiency	83.49	15.60
Q6	MIS reports help monitor performance	87.16	11.93
Q7	Data analysis helps decision making	76.14	22.02
Q9	Dashboards help track KPIs	77.06	22.02
Q10	Analytics identifies bottlenecks	77.06	19.27
Q11	Automation can improve efficiency	78.90	21.10

Q5 recorded the highest combined positive response (83.49%), indicating near-unanimous recognition of data quality as a critical operational issue. Q6 had the second-highest positive consensus (87.16%), reflecting widespread appreciation for structured reporting. Notably, Q8 (Business analytics improves productivity) showed the most polarized distribution, with 71.5% agreeing but 14.7% disagreeing — the highest disagreement rate among all items, explained by the significant departmental variation revealed in the ANOVA analysis.

Pivot Table Analysis — Department-Wise Mean Scores Table 3: Department-Wise Mean Scores Across Key Analytics Dimensions

Department	Q6: MIS	Q7: Data Analysis	Q8: Analytics Productivity	Q11: Automation
Administration	4.280	4.200	3.880	4.200
Customer Support	4.214	4.143	4.357	3.786
Field Executive	4.417	4.083	4.667	4.000
Finance	4.200	4.171	4.057	4.200
Operations	4.261	3.826	2.696	4.000

The pivot table reveals a critical paradox in the Operations department: while Operations employees score relatively high on MIS utility (4.261), they score dramatically low on analytics productivity (Q8: 2.696). This contradiction suggests that analytics is currently limited to passive reporting rather than active process improvement — a key insight driving the study's recommendations.

Chi-Square Tests of Association Table 4: Chi-Square Test — Summary of Results

Test	Variables	χ^2 Value	df	p-value	Decision
H ₀₁	Gender vs. Analytics Implementation	2.5865	2	0.2744	Fail to Reject H ₀
H ₀₂	Department vs. Efficiency Perception	14.0857	8	0.0796	Marginally Sig. ($\alpha=0.10$)
H ₀₃	Work Experience vs. Manual Process	4.4885	9	0.8764	Fail to Reject H ₀

Gender does not significantly influence analytics implementation preference ($p = 0.2744$), though males show a directionally higher 'Yes' rate (64.1% vs. 48.9%). The uniform recognition of manual processes as a bottleneck across all experience levels ($p = 0.876$) confirms that this is a systemic organizational reality rather than a perspective shaped by individual experience — providing particularly strong justification for automation investment.

One-Way ANOVA Results Table 5: One-Way ANOVA — Summary of Results

Test	Variables	F-Statistic	p-value	Decision
H ₀₄	Department vs. Q8 (Analytics Productivity)	8.5352	< 0.001	Reject H ₀ — Highly Significant
H ₀₅	Work Experience vs. Q6 (MIS Utility)	2.3939	0.0726	Fail to Reject H ₀ (Sig. at $\alpha=0.10$)
H ₀₆	Age Group vs. Q11 (Automation)	1.0122	0.3904	Fail to Reject H ₀

The ANOVA result for H₀₄ is highly significant ($F = 8.5352, p < 0.001$), with the Operations department recording a dramatically low mean of 2.696 — approximately 2 full scale points below the Field Executive mean of 4.667. This extreme difference indicates that Operations employees have the least exposure to analytics tools and cannot personally experience the productivity benefits that employees in analytics-rich roles can attest to. The non-significant automation result ($p = 0.390$) is strategically important: all age groups maintain mean scores above 3.90, confirming cross-generational consensus favourable to automation investment.

V. FINDINGS

Operational Process Findings

○ 76.14% of respondents confirmed that manual processes slow down operational work — consistent across all experience levels ($p = 0.876$), indicating a systemic organizational bottleneck rather than individual perception.

- 77.98% identified approval process delays as the most impactful operational inefficiency in terms of customer service and processing throughput.
- 83.49% agreed that data entry errors negatively impact operational efficiency — the highest positive consensus among all 11 Likert items, unambiguously identifying data quality as the most critical operational priority.

Business Analytics Perception Findings

- MIS reports received the strongest positive endorsement (87.16%), with the highest mean score (4.257) across all items, reflecting widespread appreciation for structured reporting.
- 77.06% agreed that dashboards help track operational KPIs, indicating significant pent-up demand for visual analytics tools despite limited current dashboard usage.
- 78.90% supported automation with zero respondents strongly disagreeing — a unanimous directional consensus providing ideal conditions for automation introduction.
- Q8 (Business analytics improves productivity) showed the most polarized responses, with the Operations department's dramatically low mean of 2.696 driving the significant ANOVA finding ($F = 8.54, p < 0.001$).

Integrated Finding — The Analytics Paradox

The most important integrated finding is the operational analytics paradox within the Operations department: employees score high on MIS reports (4.261) but dramatically low on analytics productivity (2.696). This reveals that analytics at SLVA Investments is currently limited to passive reporting rather than active process improvement. The path to operational efficiency therefore lies not just in providing more tools, but in transforming how analytics is conceptualized and used — from backward-looking reporting to forward-looking process optimization.

VI. SUGGESTIONS

Based on the analytical findings, the following evidence-based recommendations are proposed:

- Implement automated data validation systems with rule-based checks in all data entry interfaces to address the 83.49% consensus on data quality issues.
- Deploy Microsoft Power BI operational dashboards connected to existing data sources, tracking key KPIs such as daily applications processed, approval turnaround time, and error rates.
- Redesign the MIS reporting architecture from passive retrospective reporting to forward-looking analytics with exception-based reporting and trend analysis sections.
- Pilot Robotic Process Automation (RPA) using Microsoft Power Automate for high-volume routine tasks such as data extraction, weekly report generation, and automated follow-up notifications.
- Design and deliver targeted, role-specific analytics training for the Operations department, demonstrating practical applications using real operational data and scenarios.
- Establish a three-tier analytics capability framework (Basic, Intermediate, Advanced) and designate Analytics Champions from the 3–5-year experience cohort — the group with highest MIS appreciation (mean 4.583).
- Implement a lightweight CRM system and formalize 10–15 operational KPIs to be tracked monthly, supported by quarterly process audits using Pareto analysis.

VII. CONCLUSION

This study demonstrates that business analytics holds transformative potential for operational efficiency at SLVA Investments. The organization's workforce is analytics-ready — positive in attitude, aware of analytics value, and receptive to automation across all demographic groups. The barriers to adoption are structural: insufficient tools, inadequate training, and persistent process dependencies.

Manual process dependency is the primary systemic bottleneck, confirmed by 76.14% agreement that is consistent across all experience levels. The organization has strong analytics acceptance but weak analytics infrastructure — a gap between appreciation (87.16% value MIS reports) and capability (basic Excel spreadsheets). The Operations department requires priority intervention, as its analytics productivity score of 2.696 contrasts sharply with all other departments and represents the most consequential finding of the study.

The cross-generational consensus on automation (no significant age variation, $p = 0.390$) provides an ideal organizational window for automation investment before competitive pressures alter this favourable environment. Analytics training is an urgent prerequisite — 43.1% of employees explicitly requested it, with another 26.6% uncertain, indicating an analytics skill gap that will prevent successful adoption of even well-designed tools.

The broader implication is that small Indian NBFCs need not await large IT budgets to benefit from analytics. Thoughtful implementation of accessible, low-cost tools — Power BI, Power Automate, structured training — coupled with clear operational KPIs can generate significant efficiency gains in resource-constrained environments within 12–18 months.

REFERENCES

1. Barnes, R.M., 1997. Motion and time study: Design and measurement of work. New York: John Wiley & Sons.
2. Chen, H., Chiang, R.H. & Storey, V.C., 2012. Business intelligence and analytics: From big data to big impact. *MIS Quarterly*, 36(4), pp. 1165–1188.
3. Davenport, T.H., 2006. Competing on analytics. *Harvard Business Review*, 84(1), pp. 98–107.
4. Davenport, T.H., 2018. *The AI Advantage: How to Put the Artificial Intelligence Revolution to Work*. MIT Press.
5. Deming, W.E., 1986. *Out of the Crisis*. MIT Centre for Advanced Educational Services.
6. Drucker, P.F., 1999. *Management Challenges for the 21st Century*. Harper Business.
7. Evans, J.R., 2017. *Business Analytics: Methods, Models, and Decisions*. 3rd ed. Pearson Education.
8. Kothari, C.R. & Garg, G., 2014. *Research Methodology: Methods and Techniques*. 3rd ed. New Age International Publishers.
9. McAfee, A. & Brynjolfsson, E., 2012. Big data: The management revolution. *Harvard Business Review*, 90(10), pp. 60–68.
10. Porter, M.E., 1985. *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press.
11. Provost, F. & Fawcett, T., 2013. *Data Science for Business*. O'Reilly Media.
12. Raiyani, J.R., 2011. Effect of mergers on efficiency and productivity of Indian banks: A CAMEL's analysis. *Journal of Commerce and Trade*, 6(1), pp. 1–17.
13. Reserve Bank of India, 2024. *Annual Report 2023–24*. Available at: <https://www.rbi.org.in>
14. Saini, V., 2024. Financial analytics for fraud detection and operational monitoring. *SSRN Electronic Journal*.
15. Sharda, R., Delen, D. & Turban, E., 2018. *Business Intelligence, Analytics, and Data Science: A Managerial Perspective*. 4th ed. Pearson.
16. Turban, E., Sharda, R. & Delen, D., 2020. *Decision Support and Business Intelligence Systems*. 10th ed. Pearson.
17. Wamba, S.F., Gunasekaran, A., Akter, S., Ren, S.J., Dubey, R. & Childe, S.J., 2019. Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, pp. 356–365.



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