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Business Analytics for Sales Performance, Profitability Assessment, and Payment-Mode Decision-Making in Retail Commerce

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ABSTRACT

The retail commerce is getting reliant on systematic elucidation of transaction records to comprehend the strength of sales, profit behaviour and business results linked to payments. This article has analyzed the data on retail transactions to assess the performance of sales, trend of profitability, and decision-making on payment-mode based on product categories, sub-categories, regions and monthly. An order level and product line descriptive business analytics approach was used with the information of sales amount, quantity, profit, customer location, category, sub-category and mode of payment. The findings indicated that total sales were 437,771, total profit was 36,963 and overall profit margin was 8.44% with 500 orders made and 1,500 product-line entries. The highest sales value of 166,267 was registered by Electronics and the highest profit of 13,325 by Clothing meaning that being the leader in terms of revenue did not automatically translate to being the leader in terms of profit. The analysis of payment-mode revealed that COD generated the highest sales value of 155,181 and the highest profit margin of 14.51 was obtained by the credit card. The sales showed a distinct performance difference on a regional and monthly basis as well with Maharashtra showing sales ahead and the high profit margin of 21.73 in February. The results showed that descriptive business analytics is able to make feasible business choices in retailing by pinpointing lucrative classifications, feeble segments, geographical differences, and payment methods that possess greater managerial worth.

KEYWORDS: Business analytics; Retail commerce; Sales performance; Profitability assessment; Payment-mode decision-making.

1. Introduction

Retail business has evolved from "intuition" to "business intelligence", where business performance is measured through the analysis of sales, transactions, product categories and payment methods. In a fiercely competitive retail environment, managers must not only comprehend the total sales, but also how a combination of products, time, locations and payment methods contribute to profitability. This is a recent trend as retail businesses are being digitized and companies need to re-invent their processes, technology deployment and data analytics platforms to improve agility and efficiency (Kusuma et al., 2024).

Business analytics has emerged as an important means of understanding retail performance because it is able to transform structured data into managerial insight. Contemporary business analytics involves the use of descriptive, predictive and prescriptive analytics, to describe the past, predict the future and prescribe actions for business decisions (Raghupathi & Raghupathi, 2021). In the retail sector, descriptive analytics is useful to analyse sales value, volume, profit, product class, geographical, and customer purchase behaviours. This type of analysis is used as a starting point for identifying profitable segments, unprofitable segments and other information which can be extracted from the transaction data.

Retail analytics is a field of research and practice. It helps to connect retail business performance with operational strategies, customer, pricing, assortment and marketing strategies. Previous research on retail analytics has shown that the academic and practitioner community are increasingly viewing analytics as a vital tool to better understand customer behaviour, retailer/channel performance and management in retail companies (Roederkerk et al., 2022). Therefore, the analysis of sales, profit and payment is not only a technical but also a business-management activity that is crucial to improve competitiveness and profitability.

The increasing use of data-driven processes in retail also highlights the need for leveraging transactional data. Retail firms have an abundance of data from operations such as orders, product movement, payment transactions and customer-location data. When organised properly, they can be used to analyse sales performance, movement, demand and profitability, both by markets and products (Qi et al., 2020). In this context, sales-performance analysis is an important tool to determine the profitable product categories and sub-categories, while profitability analysis helps determine if sales are profitable.

Market and customer insights are also important in retail analytics. Retailers are now using customer analytics to gain insight into consumer behaviour, sales of product segments and opportunities for growth based on customer data. However, for retail firms to be successful with customer analytics, they need quality data, data analytics capability, organisational readiness and the ability to take action (Griva et al., 2022). Even without customer data, transaction data (customer name, city or state, product category and payment mode) can be used to gain insights into regional sales and preferences.

Digitalization has also changed business models in the retail sector through its effects on firms' customer interaction, transaction processing and performance evaluation. Retail digitalization has also led firms to embrace technology and analytics, and create new business models, to create value and improve efficiency (Mostaghel et al., 2022). The rise of e-commerce and digital retail platforms has also led to greater adoption of big data analytics for innovation, marketing and decision-making, making performance assessment a critical factor to consider when carrying out research in business and commerce (Alsmadi et al., 2024).

Nowadays, payment mode is an important part of retail performance. Cash on delivery, debit and credit cards, UPI, EMI, QR code and mobile payments influence payment convenience, transaction completion and business performance. Studies on digital payment acceptance have shown the impact of payment technologies on retailer performance, particularly in developing markets, in which digital payments are changing the face of retail (Adhikary et al., 2021). Research on mobile QR payments also demonstrate that convenience of payment is critical for improving user satisfaction and payment experience (Lou et al., 2017). Similarly, QR code payments and mobile payments have been recognised as a disruptive technology in retail due to their effect on payment and retail transactions (Yan et al., 2021).

The importance of retail key performance indicators (KPIs) is that they enable managers to understand the efficiency of commerce and to interpret commercial performance (Panay et al., 2021). As such, this research sought to offer a commercial interpretation of the role of sales performance, profitability and payment modes in the managerial decision-making process of retail businesses. The objectives of this study are:

1. To analyse sales performance across product categories, sub-categories, regions, and monthly periods in retail commerce.

2. To assess profitability patterns and payment-mode performance for supporting managerial decision-making in retail commerce.

2. Methodology

2.1 Research Design and Data Orientation

The research adopted quantitative business analytics to understand the sales and profitability, and payment mode decision-making in retail. Data was derived from the transactions of retail, which included the order details, location of the customer, category, sub-category, sales, quantity, profit and payment mode. The data was considered as the transaction record of business that can be described and compared. The purpose of the research design was to explore business patterns, rather than testing a hypothesis (Samruddhi Bhosale, 2024). As such, the research design used was descriptive statistics, category-wise, payment mode, monthly trend and profit-loss analysis to inform managers' decision-making.

2.2 Sales Performance Analysis

Order and line-item sales data were grouped to assess sales performance. The sales amount and quantity were employed to assess the revenue total and order volume by categories, sub-categories, states, cities and months. Within product categories, sales were compared to identify key segments of business, and within sub-categories sales were examined to identify revenue drivers. Monthly sales trends were reviewed to detect monthly fluctuations in retail sales. Average order size was used to measure transactional performance. This enabled an assessment of the relative importance of product categories and sub-categories, and geographical markets, for retail sales.

2.3 Profitability Assessment

The authors assessed profitability by calculating the ratio of the sales amount to the profit for categories, sub-categories, payment types, states and months. The profit margin was defined in concept as profit/sales amount, and helped the authors to segment high sales and high profit. The authors also classified the product lines and order groups as profitable and unprofitable (positive and negative, and zero-profit). This enabled the investigation of whether sales led to profit. So the profitability analysis added to the managerial accounting analyses to understand the efficient and inefficient areas of the retail business.

2.4 Payment-Mode Decision Analysis

Decision-making on payment mode was evaluated by comparing the amount of sales, profit and profit margin made under COD, credit card, EMI, UPI and debit card transactions. All payment modes were considered based on their contribution to the revenue, as well as profitability performance. This strategy aided in establishing whether the most often used or the highest-selling payment method was the most economically advantageous as well. The payment-mode analysis was adjusted to the managerial decision making since payment systems determine the customer convenience, cash flow, and profit performance. The results were understood in favour of retail payment strategy and improvement of the business performance.

3. Results

3.1 Overall Sales Performance

Retail entries indicated that the total sales in 500 orders and 1,500 entries in the product-line books was 437,771. The overall sale was 5,615 units and this implies that there is actually a product circulating in the business period under consideration. The average order value was 875.54 meaning that each order was making significant but varied contribution towards the total sales (Table 1). The categorical results indicated that the Electronics was sold the most with 166,267 sales, Clothing with 144,323 sales and Furniture with 127,181 sales. These findings showed that there was distribution of the sale activity in all the major retailing categories (Table 2).

Table 1. Overall Retail Sales and Profitability Summary

Indicator	Value
Total orders	500
Product-line entries	1,500
Total sales amount	437,771
Total profit	36,963
Total quantity sold	5,615
Average order value	875.54
Overall profit margin	8.44%

Table 2. Category-Wise Sales, Profit, Quantity, and Profit Margin

Category	Sales amount	Profit	Quantity sold	Profit margin
Electronics	166,267	13,162	1,154	7.92%
Clothing	144,323	13,325	3,516	9.23%
Furniture	127,181	10,476	945	8.24%

3.2 Category and Sub-Category Profitability

The profitability analysis revealed that the total profit was 36,963 with a total profit margin of 8.44%. Despite the fact that Electronics achieved the greatest sales, Clothing achieved the greatest profit of 13,325 as opposed to 13,162 of Electronics and Furniture. Sub-category analysis revealed that Printers had sales of 59,252 and a profit of 8,606 with a healthy margin of 14.52. Nevertheless, the Electronic Games produced a sale amount of 39,168 with a loss -644, which is indicated in Table 3. This proved that increased sales did not necessarily mean an increase in profitability.

Table 3. Leading and Weak Sub-Categories by Sales and Profitability

Sub-category	Sales amount	Profit	Quantity sold	Profit margin	Business interpretation
Printers	59,252	8,606	291	14.52%	High sales and strong profit
Saree	59,094	4,057	795	6.87%	High sales with moderate margin
Bookcases	56,861	6,516	297	11.46%	Strong sales and profit
Phones	46,119	1,847	304	4.00%	High sales but low margin
Electronic Games	39,168	-644	297	-1.64%	High sales but loss-making
Furnishings	13,484	-806	310	-5.98%	Loss-making sub-category
Kurti	3,361	-401	164	-11.93%	Low sales and loss-making
Skirt	1,946	-315	248	-16.19%	Weakest margin among listed items

3.3 Payment-Mode Performance

Analysis of payment mode revealed that COD yielded most sales of 155,181 hence it was the preferred channel of revenue. But the highest profitability performance was brought about by Credit Card whose sales stands at 86,932, its profit stands at 12,612 and profit margin of 14.51. Compared to that, UPI had recorded sales of 68,641 yet achieved a profit amounting to 3,286 with a margin of 4.79%. The EMI transactions generated 77,881 sales and 4,824 profit as shown in Figure 1. These findings indicated that the most profitable payment mode did not necessarily have to be the most lucrative.

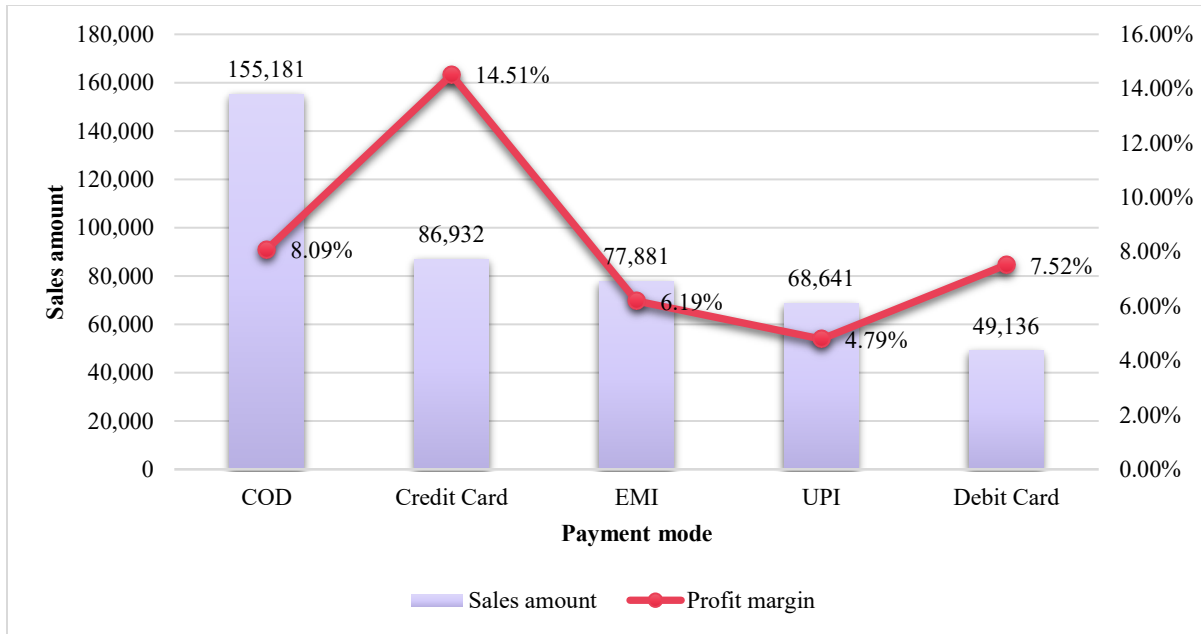


Figure 1: Payment-mode comparison based on sales amount and profit margin

3.4 Regional and Monthly Business Outcomes

Regional analysis showed that Maharashtra achieved the highest sales amount of 102,498, while Madhya Pradesh followed with 87,463. Madhya Pradesh generated profit of 7,382, slightly higher than Maharashtra’s 6,963, indicating stronger relative profitability. Rajasthan showed weaker performance, with sales of 22,334 but profit of -323. Monthly results also varied considerably. February produced a strong profit margin of 21.73%, while July recorded a negative margin of -16.49%, as shown in Figure 2. These findings confirmed that location and time period had important effects on retail business performance.

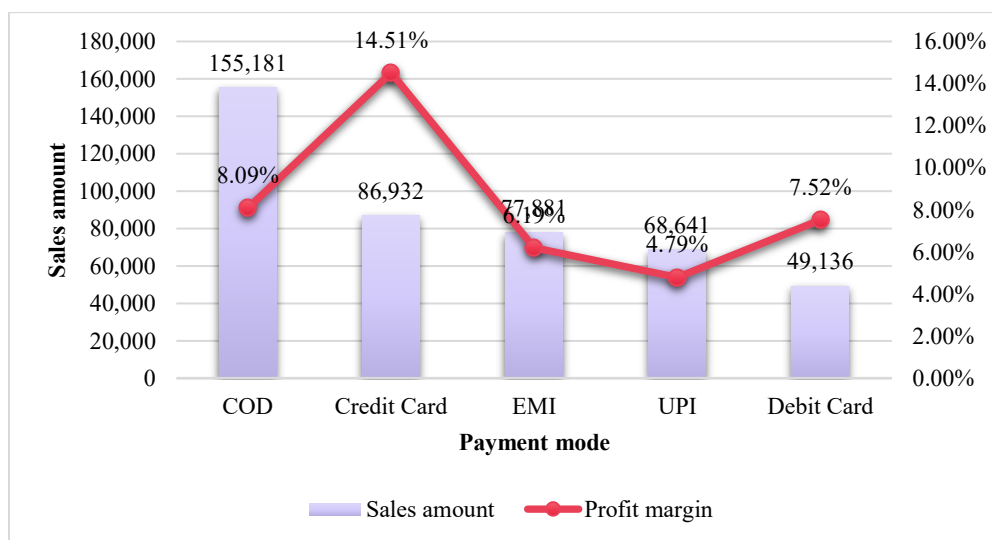


Figure 2: Payment-Mode Sales and Profit Margin

4. Discussion

The results indicated that business analytics provided a fair platform to narrate the sales performance, profitability and decision making as far as mode of payment is concerned in retail trade. The cumulative sales of 437,771, cumulative profit of 36,963 and cumulative profit margin of 8.44% meant that the retail operation was profitable in general though not the distribution of the profit across categories, regions, months and payment modes were equal. The findings revealed that the amount of sales might not be a robust indicator of business. The greatest sale was made under electronics in 166,267 and the greatest profit made under Clothing in 13,325 thus indicating that the leadership in revenue and profit varied according to the categories. Likewise, the sub-category analysis revealed that Printers sold well with 59,252 and made a profit of 8,606 and Electronic Games sold well with 39,168 and loss at -644. This meant that there were product lines consuming business value but added to revenue. This interpretation was also supported by the results of payment-mode. COD registered the best sales at 155,181 and the Credit Card registered the best profitability at 12,612 profit and 14.51 profit margin. Thus, the findings implied that profit efficiency is a factor to be employed in retail decision making, rather than the volume of transactions made, and sales volume. Regional and monthly results also showed that the performance of business was also location and time sensitive. The 102,498 sales and profit of 7,382 was slightly greater in Maharashtra and Madhya Pradesh respectively as compared to Maharashtra 6,963. In contrast to negative profit margin of -16.49% in July, the profit margin in February was 21.73% which shows that seasonal and operation differences played a significant role in determining the profitability.

The results obtained were consistent with the literature that data-driven interpretation, performance measures, and sales analytics are of great significance in decision-making by retail businesses. The category and monthly sales performance results supported the aspect that sales forecasting, market analysis and performance evaluation were the core of the results of the retail companies (Wang & Gu, 2022). The application of various dimensions of the business such as sales, type of product, payment modes and performance in regions were also in tandem with the 360-degree retail business analytics strategy (Alqhatani et al., 2022). The average order value, profit margin, category performance, and interpretation of product-level profitability was aligned with the tradition of retail analytics that were based on operational indicators to make business decisions (Okunev, 2022). It also resembled studies on predicting performance of retail companies, which

discovered the profitability as decided by a sum of interacting measures of the business yet not sales. (Vukovic et al., 2023). The emphasis on the quantifiable performance results was also consistent with predictive sales-performance evaluation methods that were grounded on business pointers to guide managerial evaluation (Calixto & Ferreira, 2020). The general method of the analysis also helped to illustrate the thesis that sales analytics have helped in the evidence-based managerial decision-making (Ferguson, 2020). The payment-mode findings, i.e. the comparison of supremacy of COD sales to the profit efficacy using Credit Card, were similar to other authors who equated digital sales and payment mechanism-related payments and outcomes with the profitability outcomes (González Morales & Cavero Rubio, 2023). The payment-mode also made sense to the research done by merchant based studies on alternative payment system where the payment mode affected the sales and profitability as perceived by the seller (Berg et al., 2025).

The results had implications on the retail managers, business analysts and accounting oriented decision makers. Firstly, the managers cannot solely rely on the sales volume in determining the success of the business as there would be high sales segments with less or even zero profit margins. Product level monitoring should therefore be used in identifying the profitable and loss making sub-categories. Second, since Clothing was doing well in profit generation, the product categories that were recording moderate sales and high profitability, ought to be approached strategically. Third, payment-mode analysis revealed that COD is an effective mode of generating revenue, but credit Card transactions have higher returns in percentage terms. This knowledge can assist the retailers in coming up with payment plans that encourage the economically efficient payment plans without undermining the convenience of the customers. Fourth, regional and monthly differences may indicate that state-specific and seasonal planning can be more useful in improving inventory location and promotional timing and market segmentation. On the whole, the study revealed that simple business analytics could support feasible sales planning, product selection, profitability management, and payment strategy decisions.

The study had some limitations. The analyzed data were a small sample of 500 orders and 1,500 records of product-lines; therefore, the findings cannot be applied to a bigger retail environment. The numbers just captured the previous year 2018, thus, not capturing the long-term trends, post-pandemic retail changes, the effect of inflation and new digital payment behaviour. The data encompassed the level of sales and profit, yet they did not break down the elements of cost, such as the cost of procurement, the cost of shipping, discount cost, tax, labour cost or platform

commission. Accordingly, the profit variable was the only variable that could be analyzed in terms of profitability. No demographic, income, loyalty or behavioural variables were given, only name and location of customers. In addition, it was a research that used descriptive business analytics only, and no predictive or causal modelling was done. Despite these limitations, the data were quite sufficient to explore the sales performance, profitability measure and decision-making regarding the payment modes in the retail business.

5. Conclusion (12, Bold)

The performance of any retail business is pegged not just on their overall level of sales but also profitability, product mix, regional contribution and payment behaviour are all factors that define the commercial performance of a business. The analysis revealed that the retail operation sales are 437,771 with a total profit of 36,963 with the overall profit margin of 8.44. Nevertheless, the findings also indicated that the sales strength and profit strength did not necessarily co-occur in locations. Electronics sold the most and Clothing the most profit so that it is important to keep a watch on the profitability of different categories. Even the products whose sales had been high like Electronic Games according to the findings of this sub-category may end up in losses. The performance in terms of payment-mode was also insightful. COD recorded the highest sales, and the Credit Card transactions recorded the highest profit margin, which shows that the payment strategy can affect the financial performance. The presence of regional and monthly variances implied that there was a geographical and temporal variation in the performance of business and this inclined towards a specific planning. In general, the overall descriptive business analytics was helpful to determine profitable segments, records that are not performing well, and viable decision-making in retail business. The results will also allow the managers to make sales planning, product selection, regional strategy and payment-mode decisions to enhance the profitability of retail.

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