A STUDY ON BIG DATA RETAIL BUSINESS ANALYTICS AND ITS IMPACT ON CUSTOMER RETENTION IN INDIAN RETAIL SECTOR

Dr. Sunil Saxena
Assistant Professor, GNVS Institute of Management
SSnil1970@gmail.com

Dr. D. Henry Babu
Director, Atharva Institute of Management Studies
drhenry23@gmail.com

Dr. Aruna Henry
Associate Professor, Datta Meghe College of Engineering, Airoli
aruna.henry@dmce.ac.in

Dr. Urvashi Anand Ohri
Faculty, Atharva Institute of Management Studies
urvashiohri2gmail.com

Dr. Uma Durgude
Assistant Professor, Bharati Vidyapeeth's Institute of Management Studies and Research
dr.uma0909@gmail.com

Dr. Saloni Desai
Associate Professor, Bharati Vidyapeeth's Institute of Management Studies and Research
salonidesai07@gmail.com

Abstract

The creation of so-called big data analytics has been sparked by the rapid expansion of the internet and the consumer-generated content it produces in order to better understand and address business issues as well as to seize opportunities. The recent increase of digital data has ushered a new era in business where decision-making is increasingly evidence-based. Large amounts of data is being collected, stored, and analysed by retail organisations, and various tools of big data analytics are used to carry on these processes. Retailers are aggressively looking for projects to use big data analytics to provide their consumers better services that provide mutual, previously

unattainable benefits, which is not surprising given the massive volume of data generated by customers' transactions in retail outlets. Little empirical study has been done to explore and examine the aspects of big data analytics in the Indian retailing sector, despite the growing potential of big data. The purpose of this study is to ascertain how big data affects client retention in the Indian retail sector.

Key words: Retailing, Big data, Business analytics, Customer retention, Loyalty programs

Introduction

Existing retail business models have been drastically adjusted to satisfy the expectations of distinct consumers who desire unique experiences as a result of the amazing changes in consumer lifestyles, and the resulting changes in their consumption habits and purchase patterns. Retailers must understand the multi-channel shopping habits of today's consumers in order to meet changing and evolving customer expectations and requests. Therefore, it is necessary for the businesses to develop, expand, and provide them with unique goods. Retail managers should be more concerned with comprehending the shifting requirements and expectations of customers and guaranteeing their retention in an era of globalised economics.

Retailers must accept and embrace developing big data retail business analytics in order to achieve their strategic goal. The Indian retailing sector has not yet completely explored big data analytics' potential advantages. While much of the academic research on big data analytics is focused on technology, a deeper comprehension of the strategic implications of big data analytics is urgently needed and is now being studied. Additionally, a fresh, dynamic global transformation that is driving the Indian retail market adds to the sector's overall competitiveness. An unprecedented level of social variety, competitive intensity, and market complexity are characteristics of the global consumer marketplace being shaped by market forces today.

In order to overcome specific obstacles and achieve sustainable growth through customer acquisition and retention strategies, retailers are being forced to make significant changes to their retail policies, practices, and business models. To do this, they must develop compelling value propositions and distinctive retail communications that connect with customers. Client retention is the topic of the current study because customer acquisition and retention are two crucial strategic actions for merchants.

Significance of the Study

Maintaining long-term client connections for a business requires keeping the acquired customer with the company. It frequently aims to reduce customer churn and increase client retention. Retaining a customer is advantageous for a business since it leads to lower customer management costs, provides good referrals, and is more likely to accept higher rates (Singh and Saini, 2016).

To preserve long-term relationships with previously acquired customers, businesses can make use of a variety of retention strategies, including loyalty programmes, club memberships, special promotions, and value-added services (Buttle, 2014). Customer retention has evolved into one of the main strategies used by retail companies to strengthen their competitive edge. Therefore, an increasing number of retailers are attempting to leverage big data retail analytics. In order to discover purchase patterns, boost consumer happiness, forecast future trends, choose promotional techniques, and boost income; an increasing number of retailers are now attempting to apply big data retail analytics. In many ways, retail analytics has changed the game when it comes to client retention.

Statement of the Problem

The new assets are customers and customer relationships. Customers are still the most valuable asset of any firm even though they are not included on the balance sheet and are the backbone of retail. Customers today are more educated, alert, more focused, and impacted by the global internet of things market, making customer acquisition one of the most difficult problems in the retail industry. Customer retention has thus become a major concern for retail organisations in India as the retail environment became more and more competitive on a daily basis. To increase their base of devoted consumers, the majority of retail businesses prioritise client retention through retention techniques. The most crucial factor in evaluating which retention approach would be most successful is comprehensive customer information. The three key concepts to comprehend are demographics, usage or behaviour data, and lifetime value.

The extent to which the Indian retail industry is implementing cutting-edge big data retail business analytics technologies is like predictive analysis, sensitive analysis, sales mapping, basket analytics, CRM analytics, market share analytics, time value of money and time analytics, transactional analytics, retail strategy analytics, and finally Business Intelligence development in retail functional areas for better decision-making is of particular concern in the context of this study. This study examines the extent to which these strategies aid in client retention in the retail industry.

Review of Literature

In a recent research, Retailers Association of India stated that only 21% of brick and mortar retailers believed that customer retention was the most crucial goal, while 52% of them believed that client acquisition is the main marketing goal. Customer acquisition was cited as the main goal by nearly 44% of single-brand shops and 53% of multi-brand retailers. According to the report, since we have only recently begun to consider retention, 70% of marketing budgets are allocated to customer acquisition. We will remain in this position for the following three years, after which

the emphasis will shift to keeping the consumers we have already won. Therefore, retailers are interested in learning how to acquire and keep new clients.

According to Verhoef (2016), over the past ten years, the retail industry has been defined by an abundance of data - both at the level of the individual customer and the overall store level. Retailers have been able to gather a tones of data about customers, including information about their purchases, marketing efforts, and attitudes. Additionally, upstream suppliers could offer a lot of information that the retailer can use to improve consumer value.

Retaining customers is a rising concern for businesses across numerous industries. Companies that want to increase their sales and profits must invest a lot of time and money in finding and keeping successful consumers. Researchers have established that client retention costs are significantly less than customer acquisition expenses (Oliver, 2014). Getting new consumers could be five times more expensive than keeping and satisfying existing ones (Reichheld, 2012), if managed effectively, retention strategies are relatively inexpensive.

In their exploratory study, Reinartz and Kumar (2013) addressed several retention strategies such loyalty programmes, club memberships, sale promotions, and value-added services to keep in touch with once-acquired customers over the long term. Programs for customer retention aid businesses in keeping their profitable clients happy and keeping them as customers. Additionally, this aids companies in gathering client data and creating a customer database for later use.

Big data analytics has the ability to gather and analyse data with an unprecedented breadth, depth, and scale to address real-world issues, according to Devenport and Manyika's (2017) research. Big data decision-making is essential for achieving greater corporate performance. Industry executives seeking any competitive advantage imaginable in the challenging, high-pressure retail climate of the twenty-first century are increasingly depending on analytics. To make better decisions and take the appropriate actions, data analytics refers to the strategic and extensive use of data, quantitative analysis, and explanatory and predictive models. So-called business intelligence, which uses big data analytics to analyse consumers, competitors, market traits, goods, business environment, influence of technology, and strategic stakeholders like alliance and suppliers, is one of the application areas that is becoming increasingly important.

Delen, Camm, and Demirkan (2018), According to their analysis, the three basic types of analytics are prescriptive, predictive, and descriptive. Retailers can use descriptive analytics to describe and summarise sales by area and inventory levels because it is a set of strategies used to describe and report on the past (Camm et al., 2014). Several methods used in predictive analytics use past and present data to forecast future events (Gandomi and Haider, 2015).

Objectives of the Study

To give a comprehensive overview of big data analytics in retail industry and underline its potential role in customer retention strategies

Hypothesis

H_0: Retail organisations are not serious towards use of big data retail business analytics in formulation of customer retention strategies

Ha: Retail organisations are significantly serious towards use of big data retail business analytics in formulation of customer retention strategies

Research Methodology

Methodology: This study uses exploratory qualitative and quantitative research approaches. In order to conduct the exploratory research, semi-structured, in-person interviews with retail managers and retail IT specialists that work with big data analytics or have a close relationship with it were conducted in three different retail sectors: food and grocery, apparel, and consumer durables.

Data collection: Using the yellow pages, a total of sixty retail managers and IT professionals, twenty from each sector were chosen at random. For this study, researchers spoke with store managers and IT specialists who have experience with big data retail business analytics and are employed in specific retail industries.

Table 1: Business Analytics Capabilities in Retail Organisations

Business Analytics Capabilities	Food and Grocery sector (n=20)	Apparel sector (n=20)	Consumer durable sector (n=20)	**Total** (n=60)
Minimal	10 (50)	11(55)	10 (50)	31 (51)
< Adequate	6 (30)	5 (25)	7(35)	18 (30)
Adequate	3 (15)	2 (10)	1(5)	6 (10)
Excellent	1(5)	2(10)	2(10)	5 (8)
Total	20	20	20	60(100)

Source: primary data

Note: Values given in parenthesis are calculated in percentage of their column totals

Chi-Square test Summary	
Test statistics	18.14
Degree of Freedom	6
P- Value	.032

Table 2: Seriousness in use of big data analytics in formulation of retention strategies

Seriousness in usage of big data	Food & Grocery sector (n=20)	Apparel Sector (n=20)	Consumer durable sector (n=20)	Total (n=60)
Not taken seriously	9 (45)	11 (55)	9 (45)	26(48)
Little Seriously	5(25)	5(25)	5 (25)	15(25)
Seriously	4(20)	2(10)	5(25)	11(18)
Very Seriously	5	2	1	8(13))
Total	20	20	20	60(100)

Source: primary data

Note: Values given in parenthesis are calculated in percentage of their column totals.

Chi-Square test Summary	
Test statistics	2.86
Degree of Freedom	6
P- Value	.071

Table 3: Big data analytics versus customer retention in retail organisations

Big data analytics versus customer retention	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Predict which consumers may be experiencing issues with a product or service	26 (43)	21(35)	5 (8)	4(7)	4(7)	60 (100)
Offers companies a way to identify those shoppers who are the most valuable as returning customers.	29 (48)	22 (37)	2 (3)	3 (5)	4 (7)	60 (100)
Reduction of customer migration	36 (60)	14 (23)	1 (2)	8 (13)	1 (2)	60 (100)
	20 (33)	28 (47)	6 (10)	3 (5)	3 (5)	60 (100)

Make customized offers so that you can keep the customer satisfied and make a sale.						
It creates successful customer loyalty and retention programs, and personalize consumer interactions in meaningful ways	28 (47)	23 (38)	3 (5)	4 (7)	2 (3)	60 (100)
It prevents customer churn and detect up selling opportunities	21 (35)	18 (30)	12 (20)	4 (7)	5 (8)	60 (100)
Improve customer experience through real-time data	37 (62)	10 (17)	1 (1)	8 (13)	4 (7)	60 (100)

Source: Primary data

Note: Values given in parenthesis are calculated in percentage of their row totals

Interpretation

The afore mentioned study showed that survey respondents from three retail sectors viewed the use of big data analytics with comparable seriousness as shown by the Chi-square statistic results (χ^2 =2.86, df 6, p>0.05) (table 2). There is no discernible difference between how seriously respondents view the use of big data in retail business analytics. The findings suggested that there has been little significant use of big data retail business analytics in these three retail sectors, and the null hypothesis has therefore been accepted. The results of the Chi-square statistic results ($\chi 2$ = 18.14, df, 6, p < .05) (table 1) also imply that, as big data analytics being in its infancy in India, merchants are yet to discover a major business value from its deployment. The findings imply that one of the obstacles to the adoption and deployment of big data analytics in retailing organizations is the lack of conducive environment and specially, inadequate technological support.

Results shown in Table-3 reveal that most respondents strongly agree that big data retail business analytics influence customers retention by predicting which customers may be having problems with a product or service, followed by big data analysis's ability to help businesses identify the most valuable repeat customers, and then other related factors of customer retention.

Conclusion

The thorough exploratory research indicates a clear picture of how different big data analytics methodologies are now being adopted and used by three different types of retail sectors. The results of the current study show that, in the context of Indian retailing, big data retail business analytics

and its impact on customer retention is plausible. This empirical study offers a thorough grasp of big data analytics for retail industry and its crucial part in marketing outcomes. The results of this research have a lot of beneficial ramifications for the academic community and the Indian retail sector. Additionally, the majority of respondents opined during interaction that the most crucial component of big data analytics is technology, followed by the skill set needed to use big data analytics in retail organisations. Because of this, retailers may not be serious about using big data analytics due to a lack of suitable equipment and knowledgeable staff.

References

Bhattacherjee, A. (2012). Social Science Research: Principles, methods, and practices Book 3. (second. pp. 1–147). Open Access Textbooks. Book 3.

Brown, S. A., Massey, A. P., & Ward, K. (2016). Handle mergers and acquisitions with care: The fragile nature of the user IT-service provider relationship. *European Journal of Information Systems*, *25*(2), 170–186.

Chongwatpol, J. (2017)., "Integration of RFID and business analytics for trade show exhibitors", European Journal of Operational Research, 244(2), 662–673. 31. Christian Homburg, Viviana V. Steiner, Dirk Totzek (2009)., "Managing Dynamics in a Customer Portfolio", *Journal of Marketing: September 2009*

Fosso Wamba, S., Akter, S., Edwards, A., Chopin, G., & Gnanzou, D. (2015). How big data can make big impact: Findings from a systematic review and a longitudinal case study. *International Journal of Production Economics, xx* (1)

Davenport T, Barth P, Bean R (2012). How big data is different, MIT Sloan. *Management Review*, *54*(1), 22–24.

Davenport, T & Patil, D. (2016), "Data Scientist: The Sexiest Job of the 21st Century", *Harvard Business Review*, *90*, 70-76

Kwon O, Lee N, Shin B (2014)., "Data quality management, data usage experience and acquisition intention of big data analytics", Inter. J. Informat. Manage. 34(3):387–394.

Penchikala, S. (2015, January). Big Data Processing with Apache Spark – Part 1: Introduction. Retrieved from http://www.infoq.com/articles/apache-sparkintroduction.

Sanders, N.R. (2019)., "Big Data Driven Supply Chain Management: A Framework for Implementing Analytics and Tuning Information into Intelligence", 1st Edition, Pearson, NJ. Sanderson, M. (2013), "Maximize performance with BI and big data. Comparative analytics enables organizations to benchmark performance against their peers", Health management technology, 34(1), 18

Verhoef., Sandy Jap, Robert W., Palmatier, & Barton Weitz. (2016). Supply Chain Management and Retailer Performance: Emerging Trends, Issues and Implications for Research and Practice. *Journal of Retailing*, *85*, 84–94.