Impact of Business Analytics for Strategy Formulation and Enhancing Sales in Big Retail Stores

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Abstract

In the retail industry, significant transformational events have occurred, resulting in huge growth. Business analytics (BA) is the process of cleaning, analyzing, processing, and storing huge data from all levels of a company's functional divisions, and then applying statistical methodologies to generate business insight. Data Driven Decision Making (DDDM) is becoming more popular by the day, and it affects every aspect of business. By utilizing actionable insights, big retail stores create sales tactics that have had a positive impact on sales. The goal of this paper is to see if using business analytics may help establish lucrative strategies and, as a result, enhance sales for big retail stores. With the use of Google Forms, 126 responses from Business Analyst and Retail Analyst were collected. The statistical analyses were managed to perform using the Partial List Square Structure Equation Modelling (PLS-SEM) type of technique from SmartPLS software 3.3.9. The findings reveal a thorough understanding of Business Analytics and its impact on big retail stores.

Keywords: Retail Industry, Business Analytics, Data Driven Decision Making, Partial List Square Structure Equation Modelling, Big Retail Stores

Introduction

The comprehensive algorithmic analysis of data or statistics is known as analytics. It is a practice for categorizing, understanding, and presenting relevant data patterns. It also entails making better selections based on data patterns. Analytics emphases on the concurrent application of statistics, computer programming, and operations research to measure performance in areas where there is a lot of big data (Cooper, 2012).

We can get useful information via analytics that would otherwise be concealed in enormous amounts of data. In today's data-driven world, it is something that any leader, manager, or just about anyone can benefit from. Analytics is the forge that produces information, which has long

been seen as a powerful weapon. Analytics is converting everything not solitary in corporate, but also in exploration, sporting, health care, and just about every other field where vast bulks of data (Kovanović, et all, 2017).

Fredrick W. Taylor previously presented the formalized arrangement of business analytics during the 1800s in the United States. The development of business analytics came in the process of analyzing production techniques that would increase industrial production. Business analytics has a quintessence, an importance. The concept is a reflection and analysis on various happenings in corporations. In essence, business analytics is a merged idea, and its meaning should be rooted in the two free notions of business and analytics.

Today, every organization need a business analytics division that spends substantial time generating conclusions from available data or information that is not immediately accessible, should be mined out, and presented in a major way to the partners, enabling them to make an educated choice. For each business to succeed and remain cutthroat in its area, there is a requirement for constant upgrading and increment productivity in business cycles to compromise and smooth out the business. Business analytics doesn't just show inadequacies in business it additionally can the entertainment biz openings in the commercial center, consequently clearing way for advancement and development of the business (Ashrafi, et all., 2019).

Retailing is distinguished as the design that is to say operated by sellers to offer merchandise and benefits to the consumers by taking advantage of miscellaneous channels of distribution like distributer, retailer, power, and intermediary because benefit taking is advanced.

Due to the dawn of several new establishments, Indian merchandizing has arisen as the furthermost dynamic and fastest rising industry. It contributes for much more than 10% of India 's Gross domestic product as well as around 8% of employment. India is the fifth most famous shopping site in the world (Khadilkar,2021)

The retailing system includes various techniques like get-together data, dissecting information, giving arrangements with the goal that basic business choices are taken enough. It incorporates the heightening of a huge volume of information by utilizing cutting edge innovations, for example, large information and business investigation so that retailing business is improved. Because of technological progression data is expanding in its outstanding manner and exploration has demonstrated that methodical examination of hierarchical information can raise the business esteem.

As that of the organized retail deepens, the tendency to strengthen on having to serve business requirements whereas the agreeing to meet client preconceptions has never been more pertinent. As a byproduct, organizing and harnessing big data to continue pursuing client gratification while also going to produce sound financial advantages is absolutely essential to having to endure success regarding that, acknowledging clients who really are probably interested in specific object types derived from past purchase behavior, struggling to figure out the best way to encourage them thru all the effective promotional endeavors, and ultimately assessing out that whatever to sell people after then seems to be what helps shape the core of business analytic (Chandramana,2017).

Literature Review

Cooper, A. (2012) determined that analytics seems to be more around an individual and organizational approach on gathering and analyzing data for decision-making and activity than it is about how data is handled on a computer; interpreting, preparing, and implementing are all humanoid acts. The goal of this research was to describe analytics and determine its key potentials. Rather to providing clear definitions, the following generic yet separate explanation of analytics was presented: Analysis is the practice of transforming issues into actionable intelligence by explaining them and using predictive methods and assessment to present and/or anticipated future data. No one understands the full extent of analytics' potential in post-secondary education yet; we must discover it collaboratively and through experience, rather than merely following the path of other industries, blunders and all, or the IT industry's advice. The author of this paper believes that it will assist readers in making sense of "analytics" for

themselves, thinking about what it means in their environment, and anticipating where analytics can be beneficial in their company.

According to Germann et al. (2014) the focus of this research paper is on the retailing industry, which is characterized by slight profit margins that necessitate thorough evaluation of all business investments. Study analyzed data from 418 senior managers in the America, Eurasia, the Gulf Region, and Africa (EMEA), and Asia, they concluded that, of the eight areas assessed, companies in the retail industry had much more to gain from implementing consumer analytics. However, they revealed that several businesses not only do not recognize this potential profit, but also do not invest in customer analytics at a cost-effective level. As a result, they discovered a gap between perception and reality in the retail industry's capacity for customer analytics, which had both theoretical and practical ramifications.

Seetharaman et al. (2016) systematically investigated and studied four key elements in their research on the influence of vastdata in the grocery sector: source of data, analytic techniques, economic and financial repercussions, and data protection and privacy.The researchers looked into the functionality of big data analysis on retail companies that have used vast data and business analytics to keep improving decisions, also known as a data-driven decision-making (DDDM) technique. The findings revealed that macroeconomic effects had a real association with data analysis technology used throughout the retail segment.

Sample for this investigation were accumulated through with a questionnaire distributed of various retail corporate strategies and investments in digital technologies. According to the findings, retail firms who have used DDDM have maximum production.

Parks et al. (2017) researched whether corporations utilized their business analytics strategies throughout this research. They reported the analysis of a grounded theory research that researched how business analytics may help an organization dealing with the rising complexity of big data, intelligence, and business activities.

As a consequence, they decided to learn about the factors that could affect and are impacted by effective business analytics. They constructed a theoretical framework for evaluating the feasibility as well as impact of business analytics as a consequence of their investigation.

Their framework works the groundwork for future investigation into the effective implementation of business analytics. Business analytics has become a much more essential consideration of decision-making, and so as BA applications improve, enterprises will find more options for meaningful business impact.

According to Chandramana (2017), the quality of data obtained from purchasing online, socioeconomic interactions, and, increasingly especially, location-specific smartphone and tablet connections has blossomed into a separate structure for web transactions, and retail becomes positioned towards significant data-driven disruption.

Competitive advantage arises via big data management through achieving excellence, risk mitigation, and the capability to unearth findings that might otherwise pass undetected. Retail stores could certainly advantage enormously from such a formalized analytics-driven technique which thus help individuals to understand why their shoppers have been using their goods and/or services, why around their operations and supply chain have been going to perform, how and where to maintain about there working population, as well as how to highlight the key perils insight and perspective on something they can whereupon operate.

The rapidity as well as agility for which minuscule data is being collected. They can tweak their tariffs and add to the attractiveness by proclaiming on the spot significant reduction on the production floor depending on the current and events that occurred purchasing tendencies. This feedback, which is usually taken throughout retailers using responsive portable apps, empowers merchants to try and understand their buyers' needs and to make increasingly efficient merchandise wise choices.

Data collection process as well as analytics have made great strides throughout the last 2 decades, and so it's intriguing to witness where trends in data analytics have shaped the business. As when the Iot technology evolves and entire civilization becomes much more interlinked, this arena will continue to thrive.

As according Power et al. (2018), the concept BA is currently a step in the right direction. That there's no one, internationally acknowledged definition of business analytics. There have been plenty of definitions of the word in practice, curriculums, and research, quite an objective appears implausible. Additionally, what experts present as Business Analytics fluctuates from institution to university.Business analytics is now a way of looking at things which it incorporates qualitative, quantitative, as well as empirical computational processes and systems to analyze the big data, gain some insight, teach, and performance and decision.

Throughout every given investigation, a plethora of procedures, such as diagnostic, predictive, prescriptive, as well as optimization frameworks, may very well be implemented. Both business and data analytics constitute types of analytics. Diagnostic, predictive, & prescriptive analytics are also all subcategories of business and data analytics which correspond to diverse styles of algorithms. One such concept may well have been given without even any objective validation by someone with an expert, but again the perspective is furnished by that of the prologue, text summarization, and conclusions from the research study. Additionally, confirmation indicating the usefulness of this uncommon recurrence may indeed be provided in preceding sections.

Their intent was also to assist readers over explanatory studies can help them appreciate the implications of business analytics. Their eventual objective was to improve cognition then instead of remembering of a term.The priority and applicability were already on broad sense strategic decision making; there had been some detail about analytics, so not every feasible approach and tactic was listed; the distinction was constructive enough then to contribute to the formation of measures; and at last, the sentence construction as well as choice of words were recognizable and succinct.

According to Ashrafi et al. (2019), numerous organizations have invested substantial money in developing Business Analytics (BA) processes in order to increase profitability. BA has so many influences on the performance. This research assessed the effect of BA competencies on business agility such as through information disclosure as well as advanced applications. Then it considered the effect of environmental dynamism as little more than a moderating factor including both technology and customer disruption. The algorithm has been tested applying survey information representing 154 businesses, each of which has selected respondents.The statistical assessment had been carried out using PLS-SEM. About the findings indicate that BA capabilities have a serious influence on a company's business agility by facilitating knowledge quality and comprehensive potential. Researchers additionally emphasized how competition and business fluctuations undermine the legitimacy of enterprises' flexibility on achievement.

All through this research, Hallikainen et al. (2020) analyzed the influence of data analytics on customer engagement efficacy, including revenue and profit, which also focuses on the use of big data analytics in operating B2B relationships with customers. Researchers had to use a multi-industry database encompassing 417 B2B enterprises. The researchers have investigated if indeed the analytics culture of a processing facility these results.

And per the studies, incorporating commercial big data optimizes customer experience performance by increasing sales (i.e. monetary results) (non-monetary performance outcomes). The second crash was significant in corporations with either a corporate analytics-friendly analytics environment, meanwhile the matter how long was influenced by both the analytics culture. And according to findings of the study, commercial big data analytics optimizes customer engagement efficacy and market growth in business - to - business corporations.

According to Deshpande (2021), business analytics (BA) is a practice under which a corporation's data is gathered, cleansed, handled, and retained throughout all echelons from across all organizational departments, and thereafter turned into actionable knowledge applying computer simulations and incremental operations.

This type of practices is followed by organizations who are devoted to making data-driven judgments. The purpose of the study was to determine which industries in Pune have begun to use business analytics, managers' understanding

of business analytics techniques, the level of businesses' data-driven decision-making strategy, and the influence of business analytics use on complete growth.The study questionnaire was administered to corporate managers at the operational and strategic levels. CIOs, CTOs, VPs, and Key Executives were handpicked as participants because they are the ones who make day as well as strategic decisions across respective enterprises.

A questionnaire was designed as well as circulated to that same respondent in different large corporations. There were so many validresponses that were taken into consideration for further investigation. The manufacturing, information technology, pharmaceutical, agricultural, and automobile industries all sent comments to the researcher. Findings revealed that if multiple components responsible for the organization's overall growth were combined or coupled with BA, then organizational progress would be assured.

The research was an attempt, as according Rathod et al. (2021), was to look at how big data and business analytics may serve boost demand obsessed predictions in India's retail market. The study concentrated mostly on constraints and efforts to improve the retailing processes through use of big data and analytics. Gathering information, analyzing data, and delivering solutions are all part of the retailing process, which ensures that crucial business decisions are made properly.

It encompasses optimizing the retail sector by researching a massive amount of data using emerging technologies includes huge data and business analytics. The researchers looked as to how huge data and business analytics obstructed the big retail business leveraging secondary data from a wide range of sources. The research additionally explored as to how big data and business analytics help strengthen interaction with customers as well as engagement with shops all across the buying journey.It attempts to bridge the gap and cultivate a pleasant rapport with clients.

The researchers looked about how big data as well as business analytics can be used to acquire data regarding customer purchasing decision throughout various modes of communication also including media platforms, e-commerce, and in-store interactivity. As just a consequence of the analysis, it was discovered that a retail corporate may make enormous rewards in the form of earnings in consideration for based on the technology acceptance expenditures by appropriately leveraging big data and data analytics. Even though the retail business may face the challenges such like financial limitations & problem maintaining client expectations, through use of technologies will help the company to improve and compete.

According to Khadilkar et al. (2021) large retail players' entry into India has been a contentious issue. Most of the major corporations sought to take advantage of this opportunity because of strong industry tailwinds such as rising disposable incomes, favorable demographics, and rising urbanization.

However, several of the sector's problems, such as high real estate costs and infrastructure gaps, along with fierce competition from low-cost traditional format companies, make rapid adoption of organized forms challenging. In conclusion, in a very huge market like India, both organized and traditional modes will coexist.

Moorthi et al. (2021) looked about how data analytics could help researchers determine consumer and product priorities. As a result, e-commerce corporations and retailers benefiting from data analytics in e-commerce transactions. This research highlights distinct big data mining approaches towards e-commerce.Data analytics is significant in electronic commerce. Plenty of the electronic commerce corporations incorporated data analytics.

It moreover allows with improved tracking inventory, the development of a robust supply chain, data analysis to prevent fraud, the projection about what is in retail outlet for you, configurability of specific suggestions for your customers, stock levels projections for another season, marketing assessment, and personalized customer of the user's buying process.To engage, numerous e-commerce corporations used data analytics. The work was founded on data analysis. The capabilities of the big data, as per the findings, were expanding and evolving on a routine basis. As just a result, new methods and approaches for accumulating, holding, computing, interpreting, and reviewing big data in the context of e-commerce were essential.

Research Methodology

Research Objectives

1. To investigate the use of Business Analytics in big retail stores for strategic planning.

2. To identify the impact of business analytics for increasing sales in big retail stores.

Hypothesis Development

H1: Business Analytics (BA), which encompasses Data Aggregation, Data Analysis, and Data Interpretation, has been found to enhance sales in Big Retail Stores.

H2: Strategy Formulation using Business Analytics (BA) has a positive impact on sales of Big Retail Stores.

Survey Instrument and Data Collection

A questionnaire was created and delivered to Business Analysts and Retail Analysts in order to evaluate the hypotheses and answer the research question. Survey questionnaire were sent via LinkedIn messages, Gmail and Direct messages. Survey questionnaire was sent to 433 respondents out of which 126 got proper response.

Sample

The final sample consisted of respondents with roles directly related to retail operations. The smallest sample size required can be estimated using the criteria proposed by Marcoulides and Saunders (2006), which have been focused on the largest proportion of arrows (signs) directing to unobserved variables in the SRM. Previous research has shown that a representative sample of 100 to 200 participants is generally appropriate to begin path modeling (Hoyle, 1995).

Thus, data was collected from so many respondents. The samples were collected on the basic of Store Based Retailing, Service Retailing and Non-Store Based Retailing (Hameli, K., 2018). In the sample, from Figure 1, there was 41.3% response from store-based retailing, 34.9% response from service retailing and 21.8% response from non-store-based retailing.

In the sampling, from Figure 2, depending on the job level position of the respondents, 54.8% were white or blue-collar jobs in retailing, 22.2% of the respondents were from middle management, 13.5% of the respondents were entrepreneur and 9.5% of the respondents were from senior management. There were 73 responders with 1 to 5 year- of Business Analytics experience, 45 with 6 to 10 years of experience in BA, and 8 with more than 10 years of experience.

Figure 1: Classification of Retail Formats based on Respondent's Data

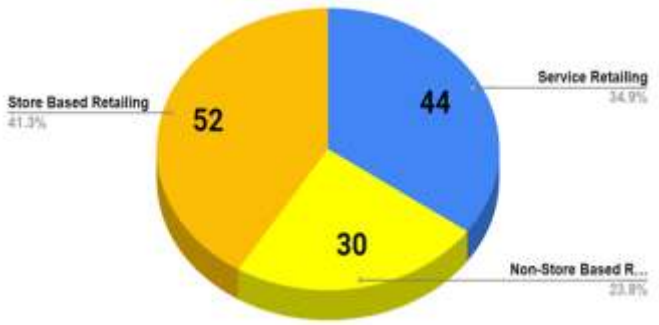


Figure 2: Participants by Respondents Job Level

Measurement of Variables

To evaluate the hypotheses, a structured questionnaire was distributed to senior management, middle management, white or blue working-class people, and entrepreneurs who considered necessary to address the research objectives. The sample was accumulated in the retail types or format for store-based retailing, non-store-based retailing, and service retailing.

The data collected for this study was done between the months of February to May 2022.The link between constructs is investigated using structural equation modelling.

SEM (structural equation modelling) is a procedure that syndicates factor analysis and multiple linear regression analysis to show numerous causal impact relationships between components (Hair et al, 2017). The questionnaire was modified, and constructs were evaluated using reflective modelling, followed by PLS-SEM in SmartPLS 3.3.9., a commonly used multivariate analytical tool.

Data Analysis and Interpretation

According to a thorough analysis of the survey questionnaire, it is a model based on the reflective model. When indicators are increasingly interdependent and interchangeable, they have seemed toward being reflective, and their validity as well as reliability should indeed be thoroughly investigated. In reflective measurement modeling, data has been analyzed in terms of internal consistency, indicator reliability, convergent, and discriminant validity (Garson G. David, 2016).

Interpretation of Variance in the Target Endogenous Variable

A set of variables in a statistical approach that is changed and perhaps even determined through its interaction with other variables in the system is acknowledged as that of an endogenous variable. In all the other utterance, an endogenous variable, like such a dependent variable, tends to be associated with certain other factors in the system under consideration. For the Positive Sales Impact of endogenous latent variable, the coefficient of determination, R2, stands 0.514. In systematic research, a value of R Square(R2) of 0.75 is taken into consideration significant, a value of 0.50 is viewed passable, and a value of 0.25 is regarded feeble. Thus, Business Analytics confirms the positive sales impact in retail stores. Thus, the positive sales impact in retail stores confirmed by Business Analytics.

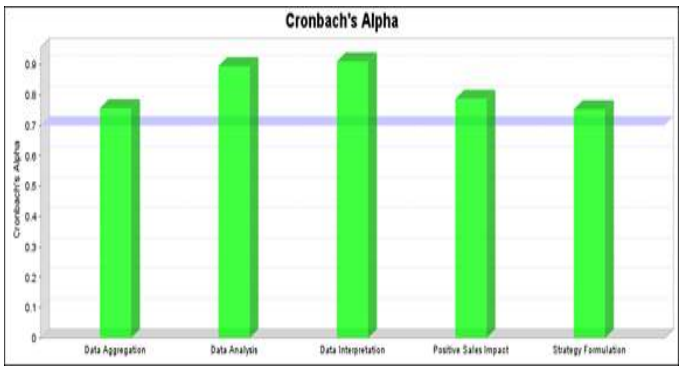
Table 1: Values of R2, Cronbach's Alpha (α), and AVE

Construct	R Square (R^2)	Cronbach's Alpha (α)	Average Variance Extracted (AVE)\
Data Aggregation		0.757	0.678
Data Analysis	0.374	0.895	0.762
Data Interpretation	0.073	0.911	0.850
Strategy Formulation	0.368	0.753	0.671
Positive Sales Impact	0.514	0.787	0.702

Internal Consistency (α)

Since Cronbach's alpha (α) is directly impacted by the number of items on the scale and frequently underestimates internal consistency reliability, I used composite reliability instead. Composite reliability has been prioritized over α as a test of convergent validity in a reflective model. As a convergent validity test in a reflective model, composite reliability has been prioritized over α. Composite reliability has conventionally been measured on a scale of0 to 1, with 1 representing flawless projected reliability. In a suitable model, the composite reliability values must really be equal to or greater than the value of 0.6 (Chin, 1998; Höck& Ringle, 2006).Here in Table 1, the analysis I found that the value of Cronbach's Alpha is 0.757 in Data Aggregation, 0.895 in Data Analysis, 0.911 in Data Interpretation, 0.753 in Strategy Formulation and 0.787 in Positive Sells Impact. It was found here that all Cronbach's Alpha (α) values are greater than the value of 0.6, so the composite reliability are established here.

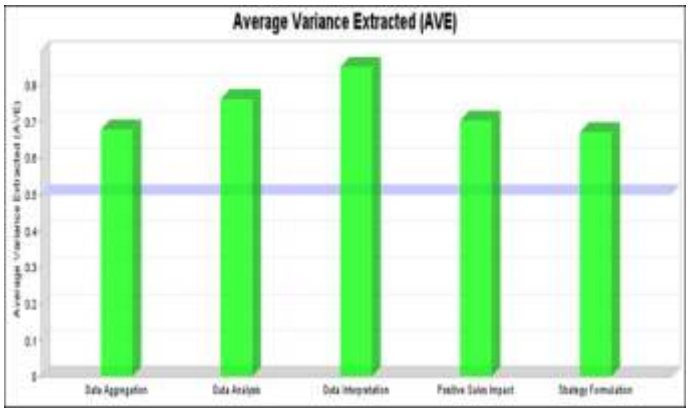
Figure 3: Bar Chart for Cronbach's Alpha Analysis for Checking Composite Reliability



Convergent Validity

The AVE is estimated by determining the mean of the squared loadings from each indicator attributed with such a construct. The Average Variance Extracted (AVE) is a convergent validity indicator which it pales in comparison the amount of variance recorded by a construct toward the variance attributable to measurement error.In an appropriate model, AVE should be significantly greater than 0.5, and cross-loadings should offer at least half portion of the variation of their corresponding indicators (Chin, 1998; Höck& Ringle, 2006).The value of AVE in Table 1, was found to be 0.678 in Data Aggregation, 0.762 in Data Analysis, 0.850 in Data Interpretation, 0.671 in Strategy Formulation and 0.702 in Positive Sales Impact. Thus, in the analysis, all values of AVE are greater than 0.5, so convergent validity is established.

Figure 4: Bar Chart for Average Variance Extracted Value for Checking Convergent Validity



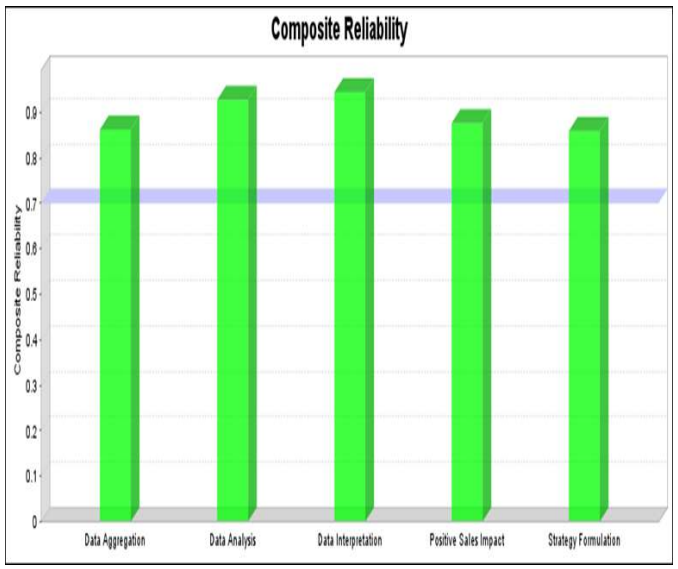
Analyzing Internal Consistency Reliability (Composite Reliability)

The internal consistency reliability is commonly verified in social science exploration by cronbach's alpha, but α is conservative in the PLS-SEM. Internal consistency is indeed a mathematical and investigations concept that describes to the commonalities around questionnaire items on the very same test. The practice of composite reliability as a replacement has been recommended in the literature (Bagozzi and Yi, 1998; Hair et al., 2012). All five reflective latent variables have established strong levels of internal consistency reliability because every composite reliability value in this case was greater than 0.6.

Table 2: Composite Reliability Value for Checking Internal Consistency Reliability

	Composite Reliability
Data Aggregation	0.862
Data Analysis	0.927
Data Interpretation	0.944
Strategy Formulation	0.859
Positive Sales Impact	0.876

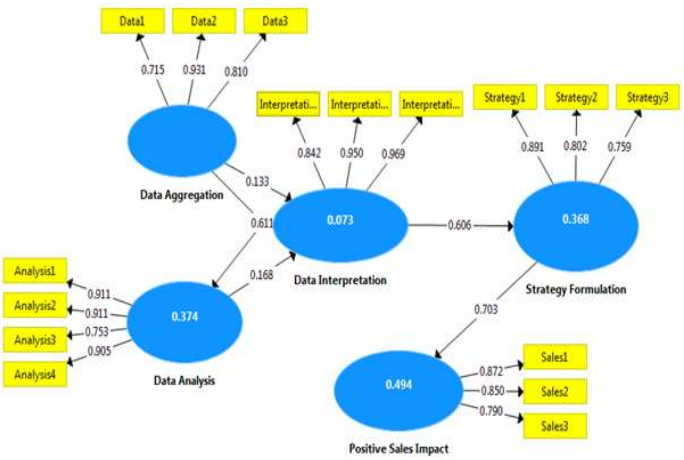
Figure 5: Bar Chart of Composite Reliability Value



Sizes and Relevance of Inner Model Path Coefficients

The inner model is the part of a Structural Equation Modelling (SEM) analysis that specifies the relationship between the latent variables that make up the model. According to the inner model, from Figure 5, Strategy Formulation (0.703) has the greatest impact on Positive Sales Impact, followed by Data Interpretation (0.1680, (0.133) and (0.611). Here all the values of the standardized path coefficient are greater than 0.1 (Hulland, 1999). The route association between Strategy Formulation and Positive Sales Impact that has been hypothesized is statically significant.

Figure 6: PLS-SEM Result



Discriminant Validity

The descriptor discriminant credibility refers to truthfulness interventions that emphasis on the construct (Cronbach & Meehl, 1955). The target of discriminant validity evidence has been to be capable of distinguishing respectively measures of different constructs. The stated goal of assessing discriminant validity is just to make sure that such a reflective construct throughout the PLS path model has the strongest links with their indicators(Hair et al., 2022).

The construct is also said to have discriminant validity when the square root of the average variance extracted outpaces the significant relationship among both the components. The square root of AVE is in the diagonal cells of SmartPLS output's Fornell-Larcker Criterion Table, with commonalities below it. For assessing correlations between latent variables, discriminant validity evaluation has become a widely acknowledged requirement.

Here the squared correlation was found to be less than the AVE value for the latent variable correlation of data analysis and data aggregation. This correlation was found to be less than the squared correlation each time from AVE everywhere.

Table 3: Latent Variable Correlations Value

Construct	Data Aggregation	Data Analysis	Data Interpretation	Strategy Formulation	Positive Sales Impact
Data Aggregation	1.000				
Data Analysis	0.611	1.000			
Data Interpretation	0.235	0.249	1.000		
Strategy Formulation	0.241	0.167	0.606	1.000	
Positive Sales Impact	0.232	0.199	0.849	0.703	1.000

Table 4: Criterion Analysis by Fornell and Larcker for Testing Discriminant Validity

Construct	Data Aggregation	Data Analysis	Data Interpretation	Strategy Formulation	Positive Sales Impact
Data Aggregation	0.678 (AVE)				
Data Analysis	0.373321 (Squared Correlation)	0.762 (AVE)			
Data Interpretation	0.058081 (Squared Correlation)	0.054756 (Squared Correlation)	0.850 (AVE)		
Strategy Formulation	0.055225 (Squared Correlation)	0.0225 (Squared Correlation)	0.367236 (Squared Correlation)	0.671 (AVE)	
Positive Sales Impact	0.053824 (Squared Correlation)	0.033124 (Squared Correlation)	0.720801 (Squared Correlation)	0.494209 (Squared Correlation)	0.702 (AVE)

Validating Indicator Reliability

The adaptability and potential of components designed for a specific construct in taking measurements the general gist in a research project is meant to refer to as indicator reliability. The indicator reliability is designed by squaring each value of the values of outer loading.

A value of 0.7 or higher for indicator reliability is better suited. A score of 0.4 or higher is satisfactory if indeed the study is exploratory in nature (Hulland, 1999). In this analysis, it was found that the value of indicator reliability is greater than 0.4 in all the latent variables, hence the indicator reliability is confirmed here.

Table 5: Summary of Reflective Measurement Model for Checking Reliability and Validity

Construct	Indicators	Outer Loading	Indicator Reliability	Composite. Reliability	Average Variance Extracted (AVE)	Discriminant Validity
Data Aggregation	Data1	0.715	0.511225	0.757	0.678	YES
	Data2	0.931	0.866761			
	Data3	0.810	0.6561			
Data Analysis	Analysis1	0.911	0.829921	0.895	0.762	YES
	Analysis2	0.911	0.829921			
	Analysis3	0.753	0.567009			
	Analyisis4	0.905	0.819025			

Construct	Indicators	Outer Loading	Indicator Reliability	Composite. Reliability	Average Variance Extracted (AVE)	Discriminant Validity
Data Interpretation	Interpretation1	0.842	0.708964	0.911	0.850	YES
	Interpretation2	0.950	0.9025			
	Interpretation3	0.969	0.938961			
Strategy Formulation	Strategy1	0.891	0.793881	0.753	0.671	YES
	Syrategy2	0.802	0.643204			
	Strategy3	0.759	0.576081			
Positive Sales Impact	Sales1	0.872	0.760384	0.787	0.702	YES
	Sales2	0.850	0.7225			
	Sales3	0.790	0.6241			

Examining the Significance of Structural Paths in Bootstrapping and Hypothesis Testing

To use a technology widely recognized as bootstrapping, SmartPLS can indeed yield substantial T- statistics for numerical validity of both of the inner as well as outer model types. The significance of extrapolated path coefficients is started testing in PLS-SEM that used a non - parametric bootstrap tactic. If indeed the T-Statistics is substantially greater than the value of 1.96, the path coefficient has really been substantial, as shown in a two - tailed t-test with such a significance value of 5%.

Table 6 shows that almost each of the T-statistics were substantially greater than the value of 1.96, revealing that such outer model loadings are highly relevant. As a necessary consequence, in this specific instance, all model loadings are crucially significant. For the endogenous latent variable Positive Sales Impact, the coefficient of determination has been 0.514.

An R2 of 0.75 is considered substantial in merchandising findings, 0.50 is taken into consideration moderate, and 0.25 is found to be insignificant. As aupshot, Business Analytics proved the beneficial sales impact in retail stores. The value of indicator reliability is larger than 0.4 in all latent variables in this analysis, indicating that the indicator reliability is confirmed. The use of business analytics, which involves the process of data aggregation, data analytics and data interpretation, has a positive impact on the growth of retail stores sales. Thus, the hypothesis H1 was accepted. The analysis conclusions are demonstrated in Table 1. As according my investigation, Cronbach's Alpha scores are 0.757 in Data Aggregation, 0.895 in Data Analysis, 0.911 in Data Interpretation, 0.753 in Strategy Formulation, and 0.787 in Positive Sells Impact.

Throughout this investigation, all the cronbach'salpha (α) values are substantially larger than the values of 0.6. Figure 6 shows that Strategy Formulation (0.703) has the biggest impact on Positive Sales Impact, according to the inner model. All of the standardized path coefficient values are more than 0.1 in this case (Hulland, 1999). The hypothesized relationship between Strategy Formulation and Positive Sales Impact is statistically significant. As a matter of fact, it was discovered here that strategy formulation using business analytics has a positive impact on retail store sales. As a result, hypothesis H2 was acknowledged.

Table 6: Sample Mean and T-Statistics for Path Coefficient

Construct	Sample Mean	T-Statistics
Data Aggregation -> Data Analysis	0.616	12.642
Data Aggregation -> Data Interpretation	0.142	1.986
Data Analysis -> Data Interpretation	0.163	2.007
Data Interpretation -> Strategy Formulation	0.610	13.908
Strategy Formulation -> Positive Sales Impact	0.706	16.461

Table 7: Hypothesis Results

Hypothesis	Statement	Status
H_1	The adoption of Business Analytics (BA), which includes Data Aggregation, Data Analysis, and Data Interpretation, has been shown to increase sales in Big Retail Stores.	Accepted
H_2	Strategy Formulation using Business Analytics (BA) has a positive impact on sales of Big Retail Stores.	Accepted

Conclusion and Future Potential Research

This research paper aims to investigate how the proper use of business analytics facilitates decision-making and how this information is important in the formulation of business strategies. As per the above-discussed facts, it was found that the elements of processing data, providing insights through reports, and developing a strategy for growing retail store sales are handled by business analytics. This study explains how the decision is taken using the data and it gives the right direction to the decision business.

In large retail stores, analytical skills can better direct entirely human decisions and provide automated decisions in particular operations. Here a study was done on business analyst and retail analyst, which revealed that with the help of business analytics, it is easy to create a sales strategy. A proposed model was examined by PLS-SEM. Both hypotheses were accepted. According to the findings of the study, retail organizations can earn significant sales returns by properly utilizing business analytics in correlation to investment opportunities obtained in the form of the adoption of technology.

While retail stores may encounter challenges such as financial constraints and difficulty meeting client expectations, technology adoption will aid the company's development and success. In data aggregation and data analysis, low-quality data does not give very accurate reports, so it should always be ensured that the quality of data is always high.

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