The Importance of Decision Tree Analysis on Strategic Management Practice: Evidence from Retail Industries in US

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Abstract

Decision trees have generally become an important tool for every decision maker, both as individuals and as an organization. Individuals are prone to strategic decision making every day of their lives as there are always various options for their daily activities. Organizations on the other hand need to be meticulous in their decision making as decisions can make or mar such organization and as well, can help in achieving the aims and visions of such organizations, hence, the need for strategic management practices. This study therefore seeks to examine the importance of the decision tree analysis in strategic management of US retail industries such as Amazon, Walmart and Costco. The study therefore adopted the case study research design among other research designs in order to achieve its objectives due to the concentration of the study on US retail industries (Amazon, Walmart and Costco) while employing the deductive research approach to draw conclusions from the observations made from the case study. The population of the study were the retail industries in US and data was collected from secondary sources such as journals, publications and so on. These data were analysed using the systematic review method which gave room to buttress some salient information concerning the case studies. The study therefore revealed that these retail industries have utilized the decision tree to make salient decisions in their various companies while strategically managing their organizations and recommends that organizations should have a clear description of the decision tree in any decision they are making as it has proven to always have an optimal result.

Introduction

Researchers (Twin 2021; Berger, Gerstenfeld and Zeng 2004; Sharma 2017) have drawn insights from the decision tree analysis and have overtime seen its need to be incorporated in the strategic management practices of various retail firms in US and around the world. In the words of Saimurugan et al. (2015), decision tree as the name comes is in form of a tree that shows the strategic decisions of the firm, not leaving out the possible consequences that alludes to the various put out strategies. Decision tree helps to improve the product of a firm, as it helps the firm to know the various means of how to reduce its cost of production given various other options which will be shown in the decision tree, hence, improves firms' output (Sugumaran, Muralidharan and Ramachandran 2007). Decision tree enhances the decision of the firm and allows for profit maximization as well as cost minimization (Mittal, Tewari and Khanduja 2017). Kaushik, Prikshit and Mittal (2016) stated that the decision tree helps the firm to make out strategic and a finite sequence of activities that only involves control statements and makes clearer the objective actualization of the firm. Decision tree have been known to have emanated from operations research and have overtime been used to achieve management goals and objectives. Specifically, decision tree helps in analysing various decisions that has earmarked overtime in a firm through some dialogue. To prevent decision loggerhead, decision tree will be useful.

On the converse, decision tree also helps firms, especially retail firms to better understand their customers and study their psychology (Kaushik, Dahiya and Mittal 2017). In other words, decision tree helps firms to study the decisions their customers are likely to take, given all other available options. Given the decision tree, producers are able to provide products that will suit the need of the consumers given that they know what the consumers want through the help of the decision tree. As a result, the consumers' experience is maximized.

Decision tree has been variously utilized by different firms such as some retail firms in the United States of

America (USA). Among other retail firms, Walmart, Amazon.com, Costco, Walgreens Boots Alliance, Albertson Companies and Apple stores have truly benefited from the adoption of the decision tree. This has been seen in their ability to gain more traffic and maximize sales with walmart, Amazon.com's, Costco's Wholesale's and Apple Stores's sales reaching $459.51, $217.79, $140.41 and $64.84 respectively as they are able to study the psychology of their customers and know what is needed by them (Amazon Inc. 2019; Costco Wholesale 2020). Also, these firms have the incorporation of the decision tree have been able to avoid loggerhead decision and come up with different successful decisions which has improved their welfare over the years (David et al. 2020). Based on the already metioned, this study seeks to investigate the importance of decision tree analysis and how it has been of great use in management practices, taking evidences from retail firms in the United State of America.

Aim of the study

the study seeks to investigate the importance of decision tree analysis on strategic management practices, with retail firms in the United State of America as a case study. The specific objective of the study is presented below:

Objectives of the study

- ➢ To present an overview of decision tree analysis on strategic management practices in US Retail Industries
- ➢ To examine the importance of decision tree analysis on cost minimization in US retail industries
- ➢ To examine the importance of decision tree analysis on the sales maximization of US retail industries

Research Questions

- ➢ What is the current development of decision analysis on strategic management practices in Amazon, Walmart and Cosco.
- ➢ How has the incorporation of decision tree analysis improved cost minimization in Amazon, Walmart and Cosco.
- ➢ How has decision tree analysis helped to improve sales of Amazon, Walmart and Cosco.

Literature Review

The Concept of Decision Tree Analysis

A decision tree shows a tree-like structure of the available solutions to a particular problem in order to come up with the optimal solution to the problem at hand (Chenaru, Popescu and Enache 2016). According to Janssens et al. (2006), this tree analysis is an important tool for decision making owing to the fact that it graphically represents various options that are under consideration for a particular decision that is to be taken with the list of the benefits of the various alternatives, their costs and their implications which gives room for comparison of the alternatives. As noted earlier, the decision tree serves salient management purposes such as management of cost, management of operations, management of the strategies of organizations and so on (Kaushik et al. 2012). Analysing a decision using the decision tree is what is known as decision tree analysis (Dey 2012). The decision tree analysis involves certain steps which include defining the issue that requires decision making, drawing a decision tree that consist of the viable solutions to the problem as well as their implications, putting in the important variables and their probability values, determining the benefits of each of the alternatives through their payoffs and allocating it to them and then, calculating the expected monetary value for each of the nodes (Sharma 2013). This can be shown in the diagram below:
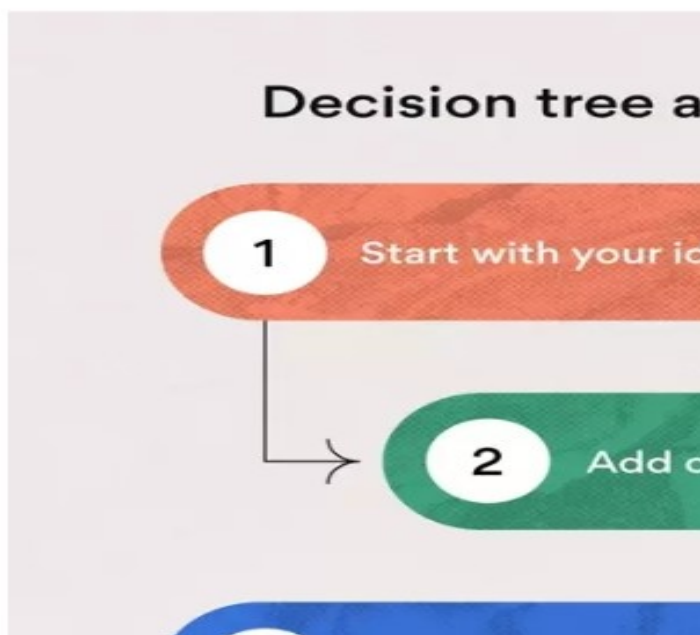
Figure 1: Steps of Decision Tree Analysis
Source: Adapted from Sharma (2013)

The five steps of the decision tree analysis as mentioned above is a prerequisite for strategic management practices (Sakthivel, Sugumaran and Babudevasenapati 2010). Sharma (2017) mentioned that strategic management practices through the decision tree analysis brings about strategic competitiveness even above average returns. This is shown in the figure below:


Figure 2: Strategic management process
Source: Adapted from Sharma (2017)

The Decision Tree Analysis in Strategic Management

The decision tree analysis is basically a tool that is applicable in periods of uncertainty, that is, when there are various alternatives to a particular management decision especially when it has to do with a project at hand (Kaushik and Mittal 2015). It is therefore a necessary tool for managing a project strategically. For instance, the management of a company may be faced with a scenario where they have to choose the optimal method of operation such as labour-intensive method or capital-intensive method. Thompson (2017) noted that the optimal method could be spelt out using the standard decision tree analysis method by calculating the expected monetary value of the various available options and choosing the option with the greatest value of EMV (Expected Monetary Value). The Expected Monetary Value shows the average outcome of the available options in decision making while putting into consideration the probability of future occurrences (Meghan 2020). For example, if the manager in charge of a project in a company is considering the outsourcing of certain activities as regards the project. However, it is necessary to put the costs and dates of delivery into consideration while selecting who to

outsource the project activities. If there are two subcontractors for the project for instance, given the amounts charged by each sub-contractor and probability of occurrence of the risks, the decision tree will be as follows:
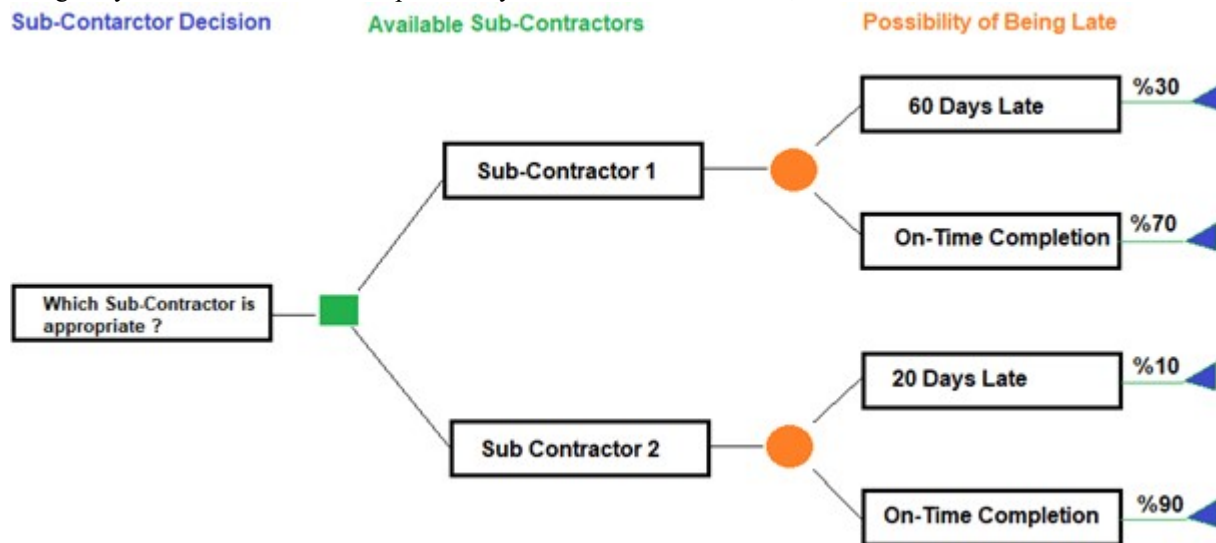
Figure 3: Decision tree analysis; the chance of being late.
Source: https://www.projectcubicle.com/importance-of-decision-tree-analysis-example/

The diagram above shows that the issue at hand is which of the two contractors is better for the contract. The first sub-contractor has 30% probability of completing the task 60 days later than required and 70% probability of completing the task on time whereas the second sub-contractor has 10% probability of completing the task 20 days later and 80% probability of completing the task on time. The decision tree analysis therefore requires the calculation of the Expected Monetary Value (EMV) of each path by getting the sum of the product of the probability of the occurrences of the risk and the amount charged by the subcontractor for the two subcontractors and choosing the subcontractor with the highest EMV.

Theoretical Review
The Decision Theory of Management
The decision theory of management was propounded by Herbert A. Simon in 1947 in his book titled "Administrative Behavior". According to him, one line of action as the best does not exist when it comes to decision making, however, a line of action must be chosen from a list of other options/alternatives (Longbottom 1973). This is because, the lack of complete information concerning the possible actions will provide room for better actions/decisions (Sharma and Kadyan 2016). He also puts the mental condition of the decision maker(s) into consideration as he explains that elements such as stress can affect the ability of the individual in question to make decisions that are optimal especially when the issue at hand is complex in nature; this he explained was neglected by the Classical Economists. The theory according to Tanya (2015) explicates that rationality is the main ingredient of decision making, as such, the attitude that individuals portray is a function of the unpredictable and probabilistic nature of the available options while making decisions. The theory therefore suggests that individuals or decision makers should focus on actions or alternatives that is associated with minimum risks and implications as against keeping their focus on the benefits of the actions (Myers 2018). This is because, the corresponding implications of such actions may rule over the accrued benefits of the particular action.

The decision theory of management draws knowledge from psychology, philosophy, mathematics and statistics in the analysis of decision-making processes (Liu and Niemi 2021). Loick (2015) opines that the theory looks at how choices are made in the face of various options/alternatives based on uncertainty and probability. This nonetheless, is what the decision tree analysis seeks to graphically illustrate while providing the Expected Monetary Value (EMV) or the Expected Utility E(U)) as a yardstick for measuring the optimal option among various available choices (Macrotrends 2020).

Rational Model Theory
The rational model theory is one of the theories of decision making that stipulates a step-by-step process by which an optimal choice is made among other available options (Mohsin and Maryam 2020). Hence, the major component in the theory is optimal choice. According to the theory, the optimal choice among various other options is the one that provides the maximum value for the company or firm (Russell and Redman 2020). As a matter of fact, the person(s) that is entrusted with the decision making for the organization would only go for the

option that provides the maximum value for the company (Pratap and Abhijeet 2020). For instance, a company that wants to sell any of its property will only sell such property to the buyer that bids the highest since the purpose is to provide maximum value for the property.

On the other hand, the theory also incorporates the minimization of cost as its objective. In other words, just like the decision tree, an action that provides the minimum cost or maximizes value among other options tends to be the best option (Tung and Irene 2020). These are based on the assumptions that there is complete information about the available options from which the optimal choice is to be selected from and the phenomenon under consideration is measurable in addition to the fact that those entrusted with the decision-making process are rational. Like the decision tree analysis, there are steps that the rational model theory suggests for decision makers to follow, they include: setting of goals, identification of criteria for decision making, identification of alternatives, analysis of the various alternatives and finally making the decision by choosing the optimal option (Upton and Nicholas 2020).

Empirical analysis

Not much works has been done on decision tree analysis and its impact on strategic management practices of firms around the world. Though, scholars (Karunakaran, K. 2008; Kaushik and Mittal 2015) have studied how strategic management practices have been affected by the decision tree analysis. Janssens et al. (2006) carried out an empirical analysis on the impact of decision tree analysis on the sales maximization retail firms in Canada. His study was based on primary source of data collection and selected 7 retail firms in Canada. The study depended on case study research design and purposive sampling technique. Through the study's analysis, it was observed that decision tree analysis has been of an important use as it has helped the retail firms in Canada to adequately improve and maximized their sales revenue. Based on the conclusion of the study, recommendations were that in the face of various decisions, firms should incorporate the decision tree analysis in order to avoid decision loggerhead as well as maximize its sales revenue.

In another study, Saimurugan et al. (2015) used secondary data to explore how decision tree analysis has impacted firms' cost of production. Tanya (2015) in his study employed systematic literature review which was aided by graphs, charts and percentages. The study used case study research design to choose top organizations in UK. Due to the study's analysis, it was seen that decision tree analysis was significantly related the cost minimization of the various firms, though, Twin (2021) did not see the need for decision tree as its conclusion based on his conducted showed that decision tree has not improved the cost of firms. Another study by Myers (2018) which was in consonance with Pratap and Abhijeet (2020) explained that decision tree has significantly improved the cost of various firms, hence, recommendations were that managers in various firms should ensure that the adoption of decision tree is paramount.

Loick (2015) also carried out an empirical analysis on the impact of decision tree on consumer satisfaction. His study was based on secondary source of data. London firms were selected, and analysis was done on this basis. The firms were investigated before and after using the decision tree analysis and major differences were found in the consumer base and satisfaction. Given the adoption of the decision tree analysis by these firms, Meghan (2020) observed through the electronic word of mouth (e-WOM) that consumer was more satisfied than how they used to before the adoption of the decision tree analysis. This finding cointegrates with the findings of Kaushik, Dahiya and Mittal (2017) in their study. Given this, recommendations were that companies that seeks traffic even in their online platform should adopt and use the decision tree analysis.

Methodology

The methodology of a study has to do with the format that the researcher follows with the sole aim of achieving the laid down objectives of the study (Borrego, Douglas and Amelink 2009). In other words, methodology guides the researcher in his quest for knowledge as well as spells out the way(s) of testing the hypothesis of the study. Therefore, methodology of a study is concerned with the collection, organization, analysis and interpretation of information in line with the objective(s) of the study.

Research Design

Castellan (2010) defined research design a blueprint that is used by a researcher which ensures that the study that is being carried out follows a logical pattern in order to actualize the aim(s) and objective(s) of the study via collecting, interpreting, analyzing and presenting the data that is needed for the study. Research design is also known as "research strategy" with the purpose of providing a design that accurately examines the link between the dependent variable(s) and the independent variable(s) (Choy 2014). Among other categories of research design are the case study research design, the descriptive research design, longitudinal research design, archival research design etc. The problem under study as well as the research questions determine the research design that will be adopted for a study. Given that this study seeks to examine the importance of the decision tree analysis in strategic management in US retail industries, we adopt the case study research design for the study. This is also

based on the fact that the study is qualitative in nature.

Research Approach

The research approach refers to the procedure or plan which a researcher employs in order to collect and analyse data during the course of a study (Saunders, Lewis and Thornhill 2007). The approach that is being used during research is determined by the problem of the study. The main categories of research approach are the deductive approach and the inductive research approach. The goal of the inductive approach of research is to develop theory while that of the deductive approach is to validate a theory that is already in existence (Hyett, Kenny and Dickson-Swift 2014). While the inductive approach transcends from making particular observations to universality, the deductive approach first generalizes and based on the general qualities observed, makes conclusion concerning an aspect of the phenomenon under consideration (Wiles, Crow and Pain 2011). The inductive research approach enables the researcher to observe certain phenomenon which are associated with the situation at hand and thereafter, bases his conclusions on the result of the observations made. This study tends to make certain observations about how certain retail industries in the United States adopt the decision tree in strategically managing their projects and is therefore based on inductive approach of research.

Method of Data Collection

According to Tashakkori and Teddlie (2008), method of data collection refers to the tools and ways by which the researcher uses to assume the data collection. In other words, method of data collection refers to the overall pattern adopted by the researcher to gather vital information which will be proven useful for the research problem. In no particular order, the two method of data collection are primary and secondary method of data collection (Silverman 2013). While primary data collection allows for the researcher to mingle with his observations, secondary method of data collection does not allow the researcher the go into the field in order to source for data. In other words, primary data collection which is also known as first hand data collection is a type of data collection process in which the researcher depends on its observation to get meaningful and accurate information. Against this backdrop, secondary data allows the researcher to leverage in an already existing information to aid the study's analysis. The sources of primary data arises from the issue of questionnaire, interview process, among other. Meanwhile, the sources of secondary data collection ranges from journals, books of readings, articles, government publications, among others. In line with this study, secondary data will be sourced and literatures from journals, articles, and other online publications will be gotten through google scholar, Bloomberg, PubMed, and so on.

Method of Data Analysis

Method of data analysis has remained the third tier of researches (Merriam and Tisdell 2016). The method of data analysis is used after the researcher has collected and organized the needed data for the study. There are two broad method of data analysis according to Silverman (2013) which are; the qualitative and the quantitative method of data analysis. The quantitative data analysis as implied by the name is a method of data analysis that is duly reliant on numbers. The qualitative data analysis is aided by some techniques such as correlation analysis, chi-square, Analysis of variance, and so on. On the converse, the qualitative data analysis is free from numeric and all other forms of qualitative data. This research will overly depend on qualitative data analysis which will use systematic literature review.

To Present an Overview of Decision Tree Analysis on Strategic Management Practices on US Retail Industries

Rahman (2020) explains decision tree as a binary tree that is in a flow chart manner with decisions that are binary in nature. In other words, the decision tree has two branches that go in opposite directions until it reaches its final destination that is like a terminal point (Liu and Niemi 2021). These branches consist of alternative options that can be used to address the problem at hand that have been stated at the beginning of the tree, that is why the first step in organizing a decision tree is the definition of the problem or issue at hand (Rahman 2020). We can therefore conclude that every decision making process that starts with defining the issue under consideration to making a list of choices and their associated benefits, costs and consequences/risk to getting an optimal choice among alternative options is known as a decision tree analysis; it just has to be completed by graphically or pictorially representing it (Sugumaran, Muralidharan & Ramachandran 2007).

There is hardly any organization that does not make decision especially the US retail industries. In the quest for Amazon to maximize their sales revenue, that is a strategic practice to expand their company. They had a bucket list of various options which included Price reduction, branding and free shipping. While analyzing the optimal choice among the various options, they decided to take a look at the factors that have mostly affected consumers' purchase over time and the result of the research is shown below:

Figure 4: Factors that affected Consumers' purchase in Amazon
Source: Rakuten insight

    The diagram above shows that the price contributes 80% to the consumers' decision to purchase from Amazon while brand and free shipping contributes 45% and 59% respectively. Amazon therefore leveraged on the information above to estimate the yield they will get if they further slash the prices of their products, the Expected Monetary Value (EMV) of their choice of price reduction, branding and free shipping and so adopted the price strategy of expanding their business among other choices.

    Walmart on the other hand, in a bid to strategize the product which they should focus on during the intense price competition they faced in 2011 had a list of items they sell and as such, list of choices to make from. An analysis of the price competition they faced and the degree to which their products were affected is shown in the diagram below:
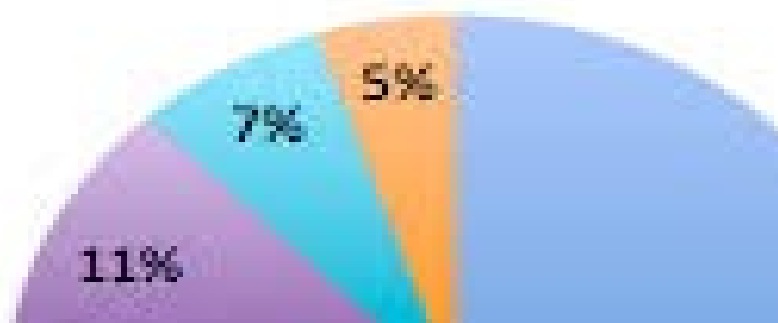
**Figure 5: Walmart Percentage sales by strategic unit during the Price Competition**
Source: Statista (2022).

    The diagram above shows that Grocery faced a 54% price competition which is the highest price completion while home equipment had just 5% price competition. Depending on the goal of Walmart, the decision tree analysis will suggest that since the competition faced by grocery items is higher, and that of home equipment is lower, it will be optimal to minimize risk by focusing on the purchase and sales of home equipment.

To examine the importance of decision tree analysis on cost minimization in US Retail Industries
As pointed out by Ibm (2019), the decision tree analysis works in two ways: maximizing value/profit and

minimization of cost; either way, the decision tree analysis plays a vital role in managing the projects of many retail industries in the United States not excluding Amazon, Walmart and Costco. Surprisingly, most of the decision makers in these companies employ the decision tree analysis when making decisions without out rightly spelling the term "decision tree analysis" out while some follow the process of decision tree to make decisions without knowing that they are actually doing so. In fact, research carried out on the level of adoption of the decision tree analysis in the retail industries in the United States shows that the tree analysis have in one way or the other adopted in the retail industries (Amazon Inc. 2020). This can be shown in the diagram below:
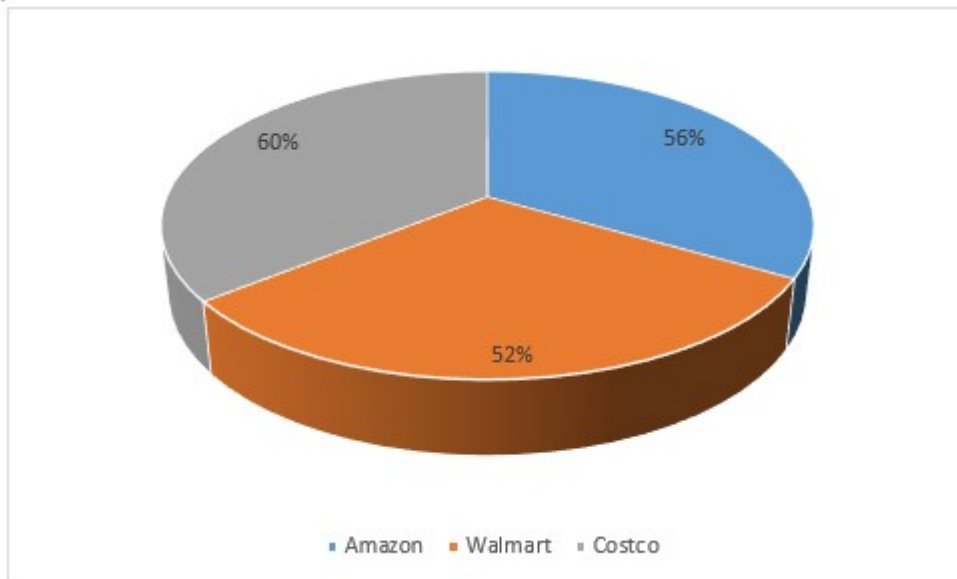

Figure 3: The level of adoption of decision tree analysis in US retail industries
Source: Statista (2022)

The diagram above shows that up to a sixty percent level, Costco has made certain decisions following the decision tree analysis procedure while that of Walmart and Amazon is up to a 56 percent and 52 percent level respectively.

Given certain goals and strategies of these companies, proper decision making becomes a sine qua non. For instance, the strategy of Amazon to improve their investment in technologies as well as their web services, investing in research and development activities in logistics while improving its logistics applications and so on (Amazon Inc. 2020). In order to achieve these goals, it is necessary that Jeff Bezos who is the major decision maker in Amazon looks up ways to minimize the cost of achieving these goals. It requires that the decision maker will invest in technologies that will require minimum cost, its research and development activities in logistics will follow procedures that have the least cost, their improvement in their web services should also require the least attainable cost and so on. Thus, the aim here is to minimize cost. It is therefore necessary to evaluate other options that are available for he projects concerned to determine the one with the least cost. Let's take investment in technologies for instance, if Amazon wants to select the technology to invest in in order to improve its logistics among two option, the simple decision tree will include:
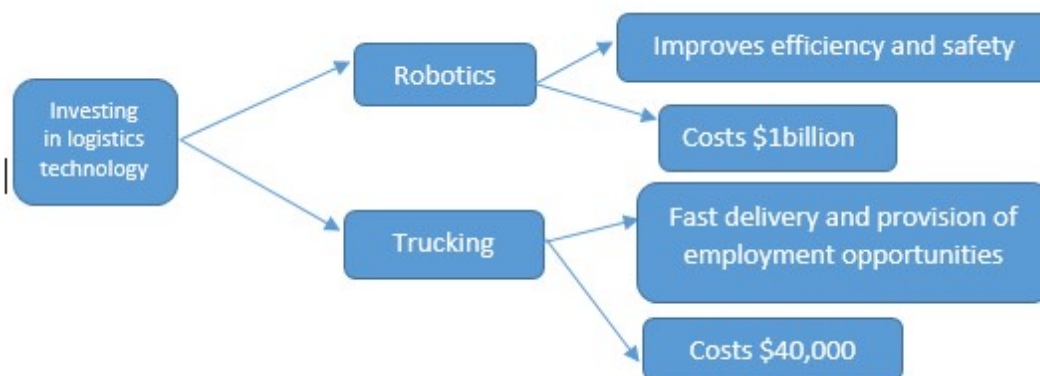
Figure 4: Simple tree analysis of investment in logistics technology by Amazon
*Source: Researcher's computation*

The figure above depicts a graphical representation of decision making on what logistics technology Amazon can invest in using the decision tree analysis. From the diagram, there are two options which are the robotics and trucking. It can be seen that despite the lingering benefits of the two technologies which include efficiency and safety from robotics which is similar to that of trucking, trucking costs lower than robotics. The process is however not complete as we will have to incorporate the probabilistic occurrences of the events, but for a simple decision tree analysis, investing in trucking would minimize cost and therefore will be optimal to be invested in.

To examine the importance of decision tree analysis on Sales maximization in US Retail Industries
As noted earlier, the goal of every organization is to either minimize cost or maximize profit (Costco Wholesale 2019). Costco (2020) also noted that the maximization of sales is directly related to the maximization of profits in organizations and in fact can be regarded as a pre-requisite to making profits as well as maximizing profits. Sales maximization has to do with the quest to ensure that the goods and services of the organization in question are sold to the greatest possible degree without of course, incurring loss (Fbicgroup 2019). In other words, it requires quick turnover as well as the highest amount of sales revenue that is attainable.

The retail industries in the United States put up various strategies in order to maximize sales owing to the high level of competition that exists in these industries (Finnish Grocery Trade Association 2021). Below is a graphical representation of the sales revenue of Walmart over the years:
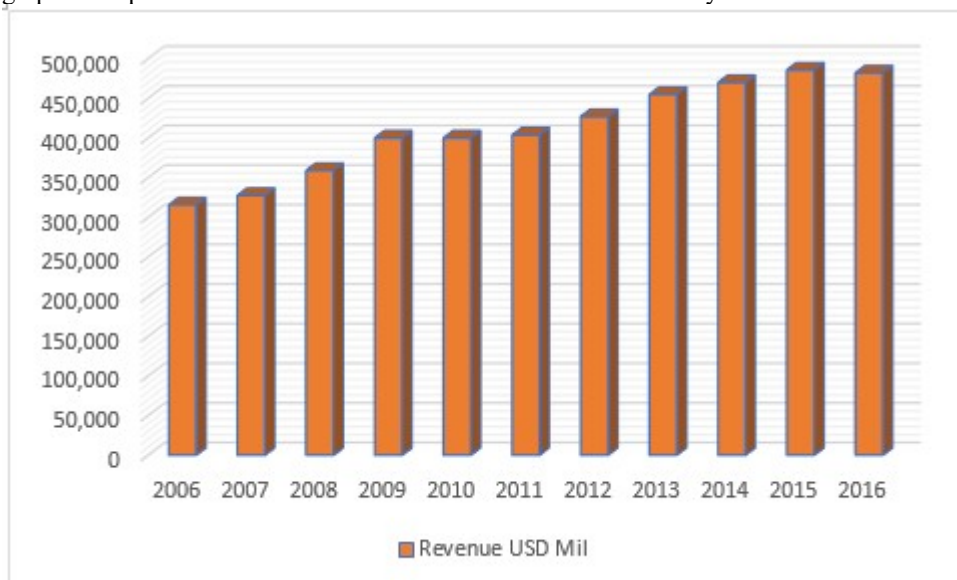
Figure 5: Walmart Sales Revenue over the years
Source: Macrotrends (2021).

The graph above shows that the sales revenue of Walmart was $315,654 million and have been increasing steadily since then, got to its peak in 2015 when it was $485,651 million, that is a growth rate of 35% but however, reduced a bit to $482,130 million in 2016. This shows that over the years the sales of Walmart stores Inc. have been maximized. On the same hand, the sales revenue of Costco has been increasing since 2017, this can be seen from the figure below:
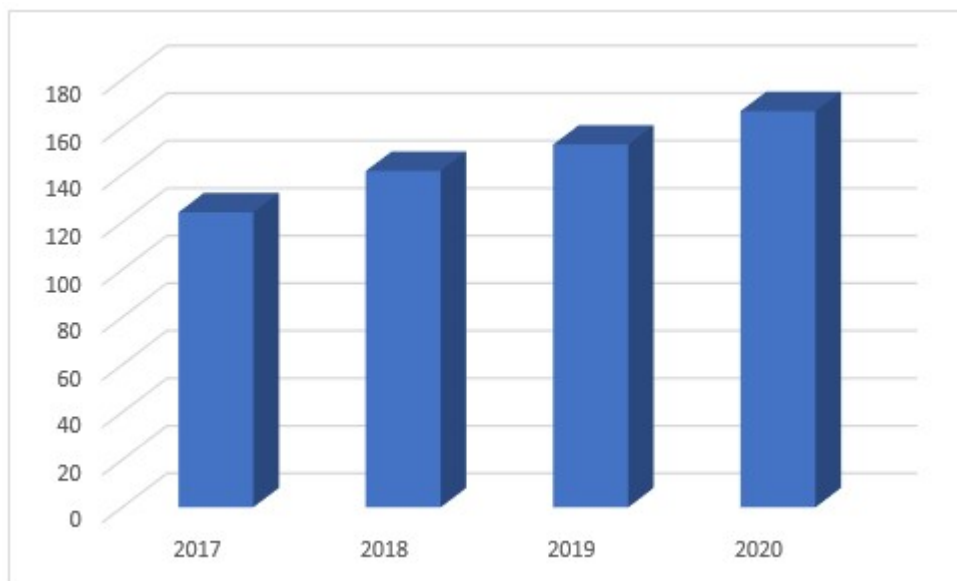
Figure 6: Costco Sales Revenue
Source: Costco (2020)

The figure above shows that the sales revenue of Costco has increased from $124.18 billion in 2017 to $166.76 billion in 2020 and this increase has been on a steady basis. It can therefore be said that they have maximized their sales.

The maximization of sales by these companies are not without certain activities that are products of good and viable decision making which is where the decision tree analysis comes in. The decision tree analysis here simply involves choosing among other options the best strategy to use in maximizing sales while of course, evaluating the benefits and risks associated with them and calculating their Expected Monetary Value (EMV) (Mohsin and Maryam 2020). The major two business strategy for Walmart are the One-stop shopping and the Everyday Low Cost (EDLC) otherwise known as the Everyday Low Price (EDLP). Their choice of Everyday Low Cost is a product of their analysis among other options such as the improvement of quality, issuance of bonuses and so on. Walmart therefore, put in their best to maximize their sales, spent $3.2 billion on advertising in 2021; spending about 2% of its revenue on marketing. Costco on the other hand does not base its profit on the sales of goods, but rather place charges on their members while concentrating on maximizing their sales (Russell and Redman 2020). It therefore uses the membership strategy to attract customers who patronize them. Hence, all they do is to recruit members while their goods automatically get sold (Loick 2015). This again, is a product of their analysis and choice among other strategies which is the decision tree analysis and has kept their sales revenue increasing over the years (Liu and Niemi 2021).

Discussion of findings

The first objective sought to present an overview of the decision tree analysis in strategic management practices in US retail firms. Systematic literature review was adopted for the study's analysis. The findings showed that Amazon wit the help of the decision tree analysis adopted the price reduction strategy. This explains their consistent increase in sales revenue (Thompson 2017). On the converse, with the help of the decision tree analysis opted for the sales of home equipment so as so minimize risk due to its low-price competition. The decisions taken by the retails firms in US as mentioned above is in consonance with the rational model theory, such that firms, in a bid to avoid decision loggerhead based on multiplicity of decision choices apply the decision tree to choose from the best decision.

The second objective of the study was to examine the importance of decision tree analysis on cost minimization in the selected US retail firms. This objective was analysed using systematic literature review and was aided by graphs and charts. The study found that the selected retail firms have incorporated decision tree analysis in their everyday activities and this have proven useful as evident in their cost minimization. Amazon was seen to earmark a decreasing trend in its cost minimization process over time. This, based on the findings was due to its thorough analysis of the various available production process and optimizing the production process with the minimum cost. This is in addendum with the findings of Thompson (2017) whose findings were that the decision tree analysis has been variously adopted in the production and other decision process of the retail firms in US, especially, Amazon, Walmart, Costco, among others. The findings of the study relate with the theory of rational model which stipulates that businesses or consumers, thorough analysis of the various available options in their basket of options tend to make an optimal choice and which allows them to either

maximize sales revenue, minimize cost as well as maximize company's profit.

The third objective was to analyse the importance of decision tree analysis on the sales maximization of selected retail firms in US. Similarly, this objective was also analysed using systematic literature review aided by qualitative analysis and charts. The study's findings shows that there has been an increase in the sales of revenue of the selected retail firms in US. Amazon saw an increase in sales to $1.29 billion in 2022 from $1.12 billion in 2020 (Statista 2022). Walmart and Costco also experienced increased sales revenue in that same year Dey (2012). This was as a result of the roper decision making that is aided by the decision tree analysis (Janssens 2006). The findings shows that the adoption of the decision tree analysis has made it possible for the retail firms in US to adequately study the buying pattern of their online customers and this has made them know what their customers wants/needs, hence, their sales maximization. This finding follows the rational model theory as it aligns with the findings of Myers (2018).

Conclusion

Through an in-dept analysis, this study has provided a well-rounded investigation on how strategic management practice is affected by decision tree analysis. The study was based on a secondary source of data collection through journals, articles, among others and were searched through google scholar, PubMed, Bloomberg, and so on. The study adopted the case study research design to choose three retail firms in US such as Amazon, Costco and Walmart and analysis was done based on the systematic literature review which was aided by qualitative technique. Through a deep investigation, the study found that the retail firms in US have improved their sales as well as minimized their cost and this was attributed to the incorporation of the decision tree analysis in the decision-making process of the various retail firms in US. The use of the decision tree analysis has also aided the firms to build effective leadership through formulation and implementation of strategies, which transmits the company's competitive nature (Sharma 2017). In other words, the retail firms through the use of the decision tree analysis have maintained a competitive nature in the market. Based on the aforementioned findings, this study recommends that retail firms in US and the world at large with minimal adoption of the decision tree analysis should incorporate this process in order to optimize its decision making. Also, in order to increase traffic for a company, managers should through the decision tree analysis, study the psychology of their customers so as to adequately understand their characteristics and their needs. Above all, policy makers will obviously benefit from the use of the decision tree analysis, hence, recommendations are that in order to make suitable policies, policy makers should analyse the various other policies through the use of decision tree, hence, its adoption.

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