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Advances in Supply Chain Management using Big Data Business Analytics

Tasawar Abdul Hamid[1], Mohammad Adnan[2], Ayaz Qaiser[3], Dr Mahmood Rehmani[4], Adarsha Bhattarai[5], Dr. Rana Tahir Naveed[6], [1]Cardiff Metropolitan University, UK, [2]SBS Swiss Business School, [3,4]Department of Business Administration, University of Sialkot, Pakistan, [5]Lincoln University, California [6]Department of Economics and Business Administration, Art & Social Sciences Division, University of Education, Lahore, Email: [1]tasawar.abdulhamid@gmail.com, [2]adnan.abdulhamid@gmail.com, [3]ayaz.qaiser@uskt.edu.pk, [4]mahmoodrehmani@gmail.com, [5]adarsha.bhattarai2002@gmail.com, [6]Tahir.naveed@ue.edu.pk

The current dynamic and increasingly serious market has expanded the complexities that constrain organizations around the world from starting to take advantage of Big Data regulations to support competition around the world, as it turns out that they are fetching more data determined in dealing with supply chains. Subjective strategies are applied in this review to better understand the wonder of Supply Chain analytics. An inductive methodology of meeting type was applied to obtain new observational data. Fifteen semi-organized meetings were held with administrative professionals in the study of the supply chain, management and big data analytics. The obtained observational data were then analyzed using the topical examination technique by the help of the previous literature and the case studies .Key discoveries in this premise are partially rejected by past reviews and existing articles in terms of the implications, definitions, and uses of the three types of Analytics. Moreover, the discoveries offer new methodologies and perspectives that the latest analytics apply at both basic and operational management levels that shape supply chain management plans.

Key words: *Supply Chain Management, Big Data, Business Analytics*

Introduction

On the expected development in the use of Internet of Things technologies, there are numerous conversation and review discussions on our current strategic approaches along with distributed computing, Analytics of the Data, Artificial intelligence and Machine learnings (Tuptuk & Hailes, 2018) In fact, the importance of analytics has been generally perceived and played a critical role in Supply Chain Management until the transfer of military activities during and after the next World War. In everyday terms, there are several types of assets an association is based on, such as innovative assets, specialized, administrative capabilities, and IT-based assets. To competently deal with these assets, in a best-case scenario, organizations should have the option to adequately deal with their supply chains, keeping in mind the unique competitive environment in current world-class business environments. This underscores the need for effective reconciliation and joint effort among supply chain accomplices; this can be implemented with the latest improvements in innovation and results. These frameworks are, in general, with Supply Chain Management and attached data and financial flows.

SCM is the management of the progress of labor and products and includes all the cycles that transform raw materials into final results. It includes dynamic flattening from supply-side exercises of a business to increase customer value and gain an edge in the commercial center. Generally, Supply Chain Management tries to half-control or link the creation, shipping, and allocation of an item. By dealing with the supply chain, organizations can reduce excess redundancy costs and deliver products to the customer faster. This is complemented by tighter control of internal inventories, inside creation, circulation, deals, and inventories of organization vendors. Supply Chain Management depends on the probability that almost every item that comes to display is due to the efforts of different associations that make up a supply chain. Although supply chains have been around for a very long time, most organizations have focused on them recently to add value to their tasks.

The supply chain is the organization of different type, firms, entities, exercises and technologies dealing with the assembly and offering of an effective management. A supply chain begins with raw materials moving from a supplier to a manufacturer and closes with the finished product or administration moving to the end customer. Supply Chain Management oversees every touchpoint of an organization's element or management, from the start of creation to the final deal. With so many points along the supply chain that can gain reputation through efficiency or lose credibility due to extended costs, proper Supply Chain Management can increase revenues, lower expenses and affect an organization's core concern.

Supply chain management is the act of organizing different exercises that are important for creating workforce and products and communicating them to a business's customers. Depending on the business in question, this means controlling the assembly of an item, shipping the item by air, ocean or land; to guarantee that it fulfills the quality guidelines and to deliver the product to customers. Supply chain management is important in light of the fact that

it can help achieve several business goals. For example, controlling consolidation loops can improve item quality by reducing the risk of reviews and claims while helping build a solid buyer brand. At the same time, authority over shipping systems can improve customer care by avoiding costly shortages or excessive inventory times. Overall, supply chain management gives organizations a chance to improve their profit margins and is particularly important for organizations with large and worldwide operations.

Supply chain management is often depicted as having five key components: arrangement, supply of raw materials, assembly, transportation, and returns. While the regulation phase implies promoting a general system for the supply chain, the other four components have some expertise in critical needs to achieve this regulation. Organizations must develop talent in each of the five components to have a competent supply chain and avoid costly bottlenecks.

Acknowledging the expanding metrics of data, two experts and researchers highlight the importance of Big Data around the world and the possibility of adding value and improving companies. Big Data is defined as massive or complex data arrangements, whose scope is an exabyte, from which the sky is the limit. The capacity framework transcends the specialized capacity domain, such as drafting, overseeing, decoding and depicting a traditional framework (Tiwari, Wee, Daryanto, & Engineering, 2018). As the Business Analytics (BA) team (Malli, Vijayalakshmi, & Balaji, 2018), where the business follows insightful procedures, strategies and data-based logical systems, the term Big Data

Analytics data credits depicted by capacity, diversity, and rapidity are measured and regulated by applying thoughts to choose better decisions. These links practice a wide range of intelligent thoughts. Supply Chain Analytics (Li, Işcan, Xu and account)) (Zhu et al., 2018)) is clearly here to improve data planning limits and supply chain business. This strengthens working with the unique cycle in the union's supply chain.

Literature Review

The current dynamic and increasingly aggressive market has expanded the complexities that force organizations around the world to become more data-driven when dealing with supply chains, leveraging Big Data regulations to support worldwide competitions. Subjective techniques were applied in this research to understand the wonder of Supply Chain Analytics in a more remarkable way. An inductive methodology was applied in meeting types to obtain new precise data. Fifteen semi-organized meetings were held with administrative professionals such experts.

Verification of exceptionally important choices according to a Supply Chain Management plan or design requires a selection of capital assets and emotionally supportive networks (Santoso et al., 2005). Accordingly, a large number of emotional support networks have been created,

for example, using a hereditary calculation (Biswas & Samanta, 2016) or streamlining models (Sadic, de Sousa, & Crispim, 2018). Business

After checking the writing completely, it turned out that basically a ton of quantitative research was carried out at the strategic and operational management levels of the associations, in any case, the baseline level was rather ignored. Moreover, there are no subjective studies investigating other key variables that can be very large at the baseline. In this assumption, we need to provide insight into the baseline and how BDA can be applied to provide key data that can be used for SCND dynamic interaction, either using a hypothesis-based model or taking quantitative discoveries from past tasks. It examines and relates this to the upper key level of the progressive system of the association.

There is no uncertainty that Supply Chain Analytics (Li, İşcan, Xu, & finance) has major implications for achieving strong supply chains. As organizations struggle through their supply chains (Deloitte Consulting, 1999), it is indisputable to understand the importance of applying a compelling procedure based on precise data from both vital and operational levels with BDA methods to get maximum capacity rewards in the long run. Then there is a requirement to lead more precise research that makes adjustments with the precision of the results from the implementation for senior supply chain management.

Emirian (2013) mentioned that both analytical and inflexible analytics play an important role in supporting organizations that make strong choices over the basic foundation of the organization. Some of the type of analytics address complex issues related to vital resource selection, supply chain planning, and the progress of items and management. Wang et al. (2016) focused on two types of SCA at a basic level in the past Logistics and Supply Chain Management . However, the third type of SCA, "what happened and what's happening in addition?" It will be special illuminating analytics that answer the questions identified with. To give some examples, key LSCM options such as sourcing, supply chain networking, have not been much researched to support.

In addition, Fosso Wamba, Gunasekaran, Papadopoulos, and Ngai (Krishnan, Visvanathan, & Su) perceived the absence of hypothetical explanations that could give deep experiences from big data in the present paper. Effective supply chain regions such as stock or coordinations have been energetically quantitatively explored. In addition, elections within the SCND that concern each of the three levels of management (vital, strategic, operational) and therefore the profits (ROI) from the initiative of a supply chain, where vital choices greatly affect, 2004), in addition, it was answered using only a variety of numerical techniques and models (Amiri, 2006; Prasad, Zakaria, & Altay, 2018).

Existing associations are gradually tackling multifaceted business cycles and addressing some key issues as they try to normalize their cycles. Expected to the current dynamic and ever-changing business environment, supply chains should have the option to imagine the latest

situations and plan alternatives to tackle these situations by applying the 'strong capabilities' methodology. This methodology enables firms to respond ideally to external changes by combining their in-house capabilities to handle changes in a viable way (Teece, Pisano, & Shuen, 1997).
Because basic scientific methodologies neglect to deal with uncertain factors such as puzzling delays, priming, failures, and duration of activity, a crossover approach is recommended to combine both logical and recreational display to deal with clients' building criteria. As such, new action plans are needed that contain advanced insightful ways to successfully and competently address the enormous data measures generated in supply chains, not suitable to support and maintain the company's core status in its unique worldwide commercial hub. (Tunalı, Özfırat, & Ay, 2011).

Late academic research has begun to examine and discuss different meanings of Big Data. Several researchers claim that this is just a big data organization, while others claim that it is wrong to characterize Big Data without considering. Accordingly, they distinguish three key attributes that define Big Data as "real data, the analytics of data, and the introduction of the final effects of analytics that allow the creation of business reputation as much as new items or administrations." Gnanzou (2015) describe Big Data as "an all-encompassing way to control, measure, and investigate five Vs (volume, variety, speed, accuracy, and value) to make significant amounts of information, Value, anticipate execution, and excel in a viable transfer".

Three properties, called 3V, were first used by Laney (2001) to characterize Big Data - Volume, Diversity, and Speed. Volume indicates unlimited data. Diversity implies the various types of records and the difficulties of using them. BIBA are often mixed and used equivalent and vice versa. Note that BI is an important insightful part of BA. The latter is not an innovation, unlike a set of approaches, strategies and tools that associations can use to obtain data, anticipate outcomes, or issue issue adjustments. BDA implies the extensive interaction of implementing advanced insightful capabilities such as Data Mining, measurable investigation to recognize designs, connections, patterns, and other important data that can be deliberately misused to generate operational profits. Some researchers are developing the latest analytics value across multiple initiatives to improve execution. Insufficient knowledge of the correct data types for each subject is as urgent as using analytical instruments centered on the goals of associations. Among Supply Chain Management professionals, forward-thinking analytics is most widely adopted and henceforth supports the value of analytics (Schoenherr and Speier-Pero, 2015).

Western Digital, a manufacturer of memory and electronic parts, characterizes the blended number stochastic programming model for each item to improve the capability cycle for a particular office (site). Field capabilities are essential to control the limits and advanced mechanical capabilities in the Western Digital organization. The subsequent improvement model is populated as a selection aid and avoids the "ledger sheet" exercises defined by SCN. Moreover, this selection device has replaced the old skill rehearsals with human methodologies, for example 'rules of education. Essentially, a Bender decoupling calculation

is used to test the bioenergy SCN in the US state of Texas. This includes biomass and biofuels coordination and space, generation, stock and the like. It contains important vital choices. Another article explores a model for quantitatively evaluating stock level and management level trading. Created as a product instrument, the model delivers basic stock levels to SCN implanted offices, even though demand sizes are not taken into account. This is accomplished by examining execution-related information such as BOM lead times and performing execution measurements, for example absolute stock capital in SCN (Ettl, Feigin, Lin, & Yao, 2000).

Key business players who adopt Big Data as another point of view are explicitly offered unlimited certification for business change and operational usefulness upgrades. Considering several models, two professionals and experts, especially in Supply Chain Management (SCM), it has consistently reached the key points of the news. Amazon uses Big Data to manufacture, scan and secure 1.5 billion objects in stock, configuring almost 200 fulfillment bases around the world, then predicting when a customer 'for which this delivery is foreseen' will purchase a product. It needs groundbreaking analytics and shipping to a distribution center close to the final destination (Ritson, 2014). Wal-Mart audits more than 1,000,000 customer trade every hour, moves data to databases containing more than 2.5 petabytes, and requests merchants to tag shipments with radio replication identification systems that can handle shipments (Feng et al., 2014). Generate several times more data than traditional normalized definition guidelines. UPS's sending telematics to freight owners helped establish important troops around the planet (DavenportandPatil, 2012).

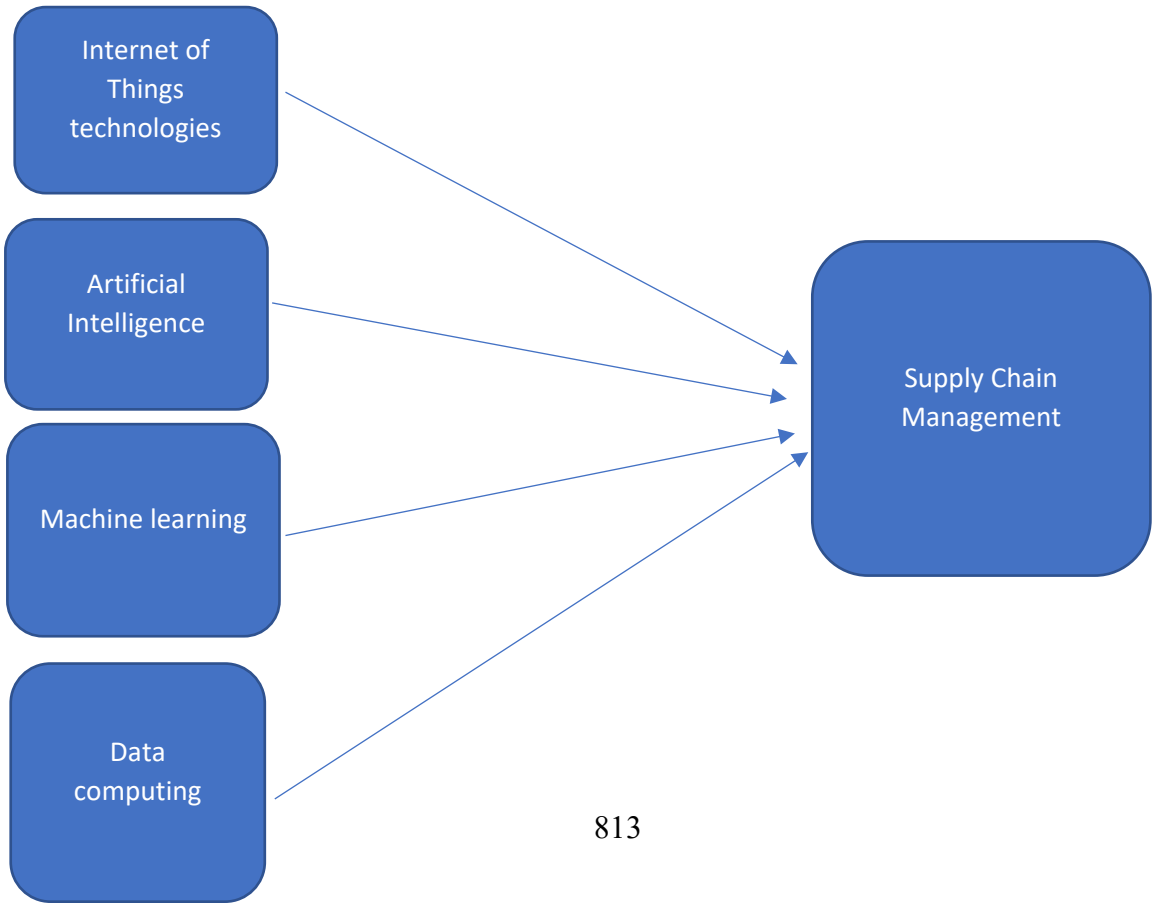
While most memberships have clear requirements from Big Data Analytics (BDA) in their supply chain, actual use is limited, and many associations are fighting to uncover commercial reputation (Pearson et al., 2014). For the search for a change presented in this advocacy and the craving to control the Supply Chain Management application to ensure BDA, the general reason for this survey is to connect the knowledge gap between data science and Supply Chain Management, linking data, enhancing and utilitarian information. . BDA applications in purchasing, shipping, roaming focused exercises and progress. Specifically, this article will (1) re-examine how BDA has diverged and evolved from past insightful technologies by exploring the corresponding recommendations for Supply Chain Management and past consistent studies; (2) Promote the logical order within SCM that perceives and controls the different types of data sources and types that arise in existing supply chains; and (3) address the complexity of Supply Chain Management challenges that suggest several uses of BDA and demonstrate that these progress proposals are of potentially high value.

The importance of Big Data is defined by high computing power prerequisites: "Big data refers to data sets whose size exceeds the capturing, stocking, control and evaluation limits of standard database software appliances". The use of the latest analytics in Supply Chain Management was evident from the presence of Supply Chain Analytics, which is part of the comprehensive supply chain and the reference point of BDA's current structure in Supply Chain

Management. Early Supply Chain Analytics was like a device that aids in the multidimensional analysis of data from reputation-based databases, allowing the data to measure, view, measure and review Supply Chain Management business metrics, benchmarking, cementing, and multi-vision data (Smith, 2000). . The interest in better business measures has led several manufacturers, such as Grimes (2000), to recognize Supply Chain Analytics as a business collaboration that rebuilds a facilitating tool. Marabotti (2003) added that analytical data should be presented and isolated in a way that provides the end customer. The advancement of Business Intelligence (BI) has strengthened the broader possible consequences of data blending, and Supply Chain Analysis focused on expanded detectable quality across the entire supply chain (Sahayand Ranjan, 2008). In addition, pace planning has used data mining artificial techniques to essentially make more confusing situations, such as constantly animating data, more accessible, so the samples responded not only to the past but to current business conditions. Pearson (2011b) made an improvement in the definition by noting that the inspiration driving the exam should be "forward-looking" and also evaluated its impact on "regulated" races. Dwyer and Renner (2011) have consolidated this change, which recently coined the term Advanced Supply Chain Analytics, by portraying another perspective where models should be proactive with respect to data rather than open. Waller and Fawcett (2013) reaffirmed the need to remember field data for analytics use. Sanders (2014) demonstrated the traditional importance of BDA without explicitly fitting the data.

Conceptual framework

On the ground of the previous literature, we developed the following conceptual framework for our research.



Discussion and Findings

When deciphering viable experiences with scholastic writing, the presence of a computerized interpretation of a real supply chain management is just as valuable as a real / real inventory network. New innovations and new reasoning methodologies capture dangers such as large quantities of products and diversity and energize supply chains with more notable openness and perceptibility among key accomplices. Regarding the real SCND, many numerical strategies have been created with test cases in writing. Practically speaking, though, industry experts spoke hastily, ignoring mechanical or numerical procedures, smart perspectives in business practices. Perceiving this, SCND elections are seen as undeniable level choices and stem from changes in the associations' external climate. By observing the market, small moves in SCN design can be dealt with quickly and profits from associations.

Key achievement factors referenced range from contact with adjacent areas, such as multiple measurements and acquisitions. This suggests that flexible data and skills must be available to use existing numerical models and recreations to overcome the limitations of SCN. Advanced analytics and diverse data capacities are filled as facilitators for the ideal SCND that can be demonstrated with its numerous advantages regardless of the business area. The value and different origins of the data are of paramount importance when providing models or reproductions of the various settings of future SCNs. Next, the fundamental and operational levels of an organization are brought together and addressed to a body that brings together to reveal all analytical possibilities for modern SCND selections. Their corresponding trusts can also be supplemented with analytics, as they identify important experiences for organizations and relate to reassessing data drives in relationships. In this way, SCA should be more accepted in associations and interest in data science should be seen as a result. SCND will not stop reshaping and reacting to an ever-evolving market, making SCA the key to associations of all sizes.

An important note, which was similarly cited several times among respondents, concerned the organization and logical capacities of the supply chain system and the overall business methodology of the association. This sets in motion an overall hierarchical methodology on the grounds that key choices are made by senior supervisors. In this way, SCA is mostly used in central or sub-management parts, and this rejects SCND preferences of top management levels taken in light of the fact that two drivers are located at various position levels. A major move towards data-driven technologies and SCA skills at the senior management level, supporting the administrative structure but losing connectivity with operational data sources.

Recommendations and future research suggestion

Supply chain management is the important part of the organization towards the earning profitability under the utilizations of the resources with effective manners. Supply chain management effected by the some factors including political, economic and social factors.

The main point of supply chain management is to provide better practice by moving forward with profitability and progress (Nzewi & Ojiagu, 2015). However, attempts to recognize such victories are routinely influenced by a variety of functioning financial conditions, such as the opening level, partners, political scene, commercial legal framework, cost of cooperation, new creative things, embedding the executive framework, creating improvements and global implications. The fiscal sphere is an essential part of the economy and its presentation must be closely controlled to ensure the willingness of a country's economy. Supply chain management-related remedial powers to the general population through the managers' plan. The financial development of organizations, the transformation of supply chain events, and the budget part implies the adequacy of an economy through unwavering quality. Also, the extraordinary execution of commercial banks is a factor for an incredible financial system that can be subjected to peculiarities and shocks in the economy; Regardless, the disgusting outlook could contribute to a significant cash-related crisis, especially in emerging economies.

Some of the ethical considerations as well as 'trust' in the capabilities of Supply Chain Analytics (Li et al.) were mobilized by this review. The issue of believing in the data given by analytics and allowing neighboring technologies to enjoy Machine Learning (ML) is set in the interest of the individual, is morally considered, and requires more conversation.

Moreover, if Artificial Intelligence (AI) and ML chose what the customer should do, what is the customer responsible for at this point? Many of those participating in this current review predict that analytics and artificial intelligence will replace human intelligence sooner or later. This is a moral conversation starter about whether analytics can lead to job loss due to the flood of demands to employ knowledgeable scientific experts.

Evidence from developed economies, demonstrate that a steady management framework is essential to advancing financial development and advancement of establishments inside the nation. Some research shows that inward bank-explicit components are vital to encouraging the steadiness of firm’s establishments. Some researches stated that the security of financial foundations is a key pointer of a well working monetary framework, demonstrate that a sound and stable financial part of the organization on the move economies is fundamental for advancing institutional turn of events and firm performance by the help of the effective supply chain management.

As such, this could force cutting-edge workers to re-specialize themselves to become Data Scientists to understand the high-level strategy behind analytics and then turn it into thinkable data.

This scrutiny raised some other moral concerns regarding protection and privacy. For example, when using analytics, you may be asked where the outage is closing because the analytics phase can approach confidential data about suppliers, the association's customer databases and best strategic policies.

Reliability for both data and analysis methods is another basic moral consideration distinguished after leading this investigation. For example, sharp calculations are getting more and more refined and complex, and they cannot handle human behavior 100%, which raises some moral issues here about the amount we can rely on not our own human senses but their analytical capacities.

As the examination plans to investigate the ramifications of Supply Chain Analytics (Li et al.) on the Logistics and Supply Chain Management technique and adequacy, zeroing in on various examination, it produces more income for content makers. The other two sorts of investigation (prescient and prescriptive) are utilized together and then again in arranging Supply Chain Networks.

In the course of this research, many points of interest and topics have emerged, such as the problem of trusting data from analytics and collecting data according to one's own impulse or hunch. As organizations today become more and more data-driven, it is fascinating to add the 'human drive' as a structure to examine the importance of this when using analytics as the main reinforcing effects for the dynamic cycle.

In addition, it is fascinating to add more pieces of information to SCA and illuminating analytics topics to check on the discoveries of this review or to find various discoveries, and to add this to its association with other vital practices such as item advancement and planning or key sourcing. They are still areas of discovery intrigue, but have been reasonably researched before ((Wang et al., 2016)).

Conclusions regarding the results of the SCA and its relation to the methodology and activities of the LSCM are not positioned as important in this review. Therefore, the creators are asking for a future quantitative review aimed at exploring the implications of applying quantitative critical thinking strategies to give professional clients a more general understanding and to create a set of approaches to improve supply chain metrics. In addition, researching the contribution of the initiative as Critical Success Factors for the applicable selection and use of analytics in associations may be similarly interesting for future reviews.

In the end, as the review takes into account a triple perspective (consulting firms, IT traders, and end users), content creators propose to add a fourth perspective to be a certain industry correlation and reverse exploration the relationship between both vital and operational levels of management. by the procedures that businesses accept for analytics.

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