Beneficiated Coal Buying Process: Investigating Industrial Buying Behavior Models

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Abstract

This research paper examines the buying process of beneficiated coal within coal-consuming industries, while considering different models of industrial buying behavior. Beneficiated coal refers to coal that has undergone a purification process to improve its quality and reduce impurities, making it suitable for industrial applications. The primary objective of this paper is to investigate and compare various models of industrial buying behavior in the specific context of the beneficiated coal market. This paper aims to provide valuable insights for coal suppliers and buyers to enhance their decision-making processes. The study focuses on the different stages involved in the buying process of beneficiated coal. Additionally, it explores the internal and external factors that influence industrial buyers when procuring beneficiated coal. The research analyzes each stage of the buying process, including problem recognition, information search, alternative evaluation, purchasing decision, and post-purchase evaluation. It also examines the internal and external factors influencing industrial buyers in their procurement of beneficiated coal, such as organizational considerations, market dynamics, and individual preferences. Furthermore, this research paper presents a comparative analysis of various models of industrial buying behavior, such as the Webster and Wind model and the Sheth model. The aim is to assess the applicability and effectiveness of these models in explaining the intricacies of the buying process within industries. By gaining a deeper understanding of the buying process and influential factors, coal suppliers and buyers can refine their marketing strategies, optimize their operations, and foster mutually beneficial relationships within the beneficiated coal market.

Keywords: Coal Industry, Beneficiated Coal , Coal Washery, Clean Coal, Thermal Power, Beneficiation techniques, Industrial purchasing decisions

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Introduction:

According to a report released by the International Energy Agency (IEA), the European Union is projected to increase coal consumption by 6%, adding about 29 Mt, followed by China's 0.4%

growth, adding about 18 Mt. The projected increase in Indian consumption is 7%. Several European countries have been temporarily switching to coal due to geopolitical reasons. This is in contrast to China and India, where coal-fired power generation is rising to keep up with stronger demand. India will be the "growth engine" of global coal demand due to its coal consumption doubling since 2007 at an annual growth rate of 6%. China consumes 53% of the world's coal and is therefore the top consumer. Coal consumption in China rose by 4.6% in 2021, reaching a total of 4,232 metric tons. India, saw a 14% increase, or 128 Mt, in coal demand in 2021. In 2023, global coal demand is expected to rise by only 1.2% from 2022; yet, in light of the ongoing energy crisis, this would be more than enough to propel annual consumption to an all-time high of almost 8 billion tons. Even though it has pledged to transition to renewable energy sources in the long run, India has staunchly defended its intention to continue using coal because it is the quickest and cheapest resource it possesses for fueling economic growth.

Despite a jump in demand in Europe as a result of the Russia-Ukraine war, there is little hint of a rush in investment in export-driven coal projects. Electricity consumption has risen sharply, driving up the demand, and in 2022, coal-fired power plants are expected to provide electricity for around 73% of the world. In 2022, cement and steel production, two industries that rely heavily on coal, continued to expand. Monthly cement production was on average 11% higher year-over-year from January through September. The rate of expansion reached its highest point in May, and then began to decline in July when the start of the monsoon season slowed building activity. The increase in global coal demand is forecast to decelerate dramatically in 2022, reaching a new record of 8,025 MT despite being just higher than the 2013 level (7,997 MT). First, countries and businesses are switching to coal because of constrained natural gas supply and high gas prices. Second, increased electricity consumption and decreased hydropower supply due to heat waves and droughts in some places of the world necessitated the use of largely dispatchable thermal power plants to meet the shortfall.

Literature review:

Coal has been a major source of energy for both India and the world for many years. Coal is used extensively for electricity generation, industrial processes, and transportation. Despite the increasing emphasis on renewable energy sources, coal remains important for energy generation in many countries, including India. Indigenous coal laid the foundation for the country's industrial past. Therefore, it is necessary to shift our attention to different aspects of coal such as coal beneficiation and coal buying process in special reference to coal consuming industries. Thus, a brief review on the coal industry and coal beneficiation as well as its industrial buying behavior is given below:

Zhao et al. (2005) took a close look at the positive advancements in dry coal beneficiation during the last five years and talked about where things are now all around the globe. They concluded by discussing both the opportunities and the threats inherent in furthering the field of dry coal beneficiation.

Brashear and Kowalkowsk (2010) created and evaluated a model of information search for complicated purchasing. Authors account for organisational, individual, and contextual variables on people's propensity to seek out information. 96 of the top Brazilian companies surveyed said they were influenced by a variety of factors when deciding to acquire an IBMS. The findings demonstrated that formalisation of the organisation is an important factor in motivating people to seek out information. The significance,

novelty, and negotiating power of the situation all contributed to a higher rate of information seeking.

Desai (2014) analysed many recent reports on energy statistics that have been released by both global and national organisations. A significant increase in power and other resource usage is required to provide a decent level of life for all people. India has to rely significantly on foreign suppliers for its energy needs. Energy efficiency is the most cost-effective means of accomplishing these three goals (energy security, improved balance of payment, and emission reductions). A dramatic transition from supply-side to demand-side management is required in energy policy. BEE, PCRA, GEDA, and MEDA need massive amounts of resources, both human and monetary. The residential sector and the small and medium-sized business sector must be prioritised. Compared to private autos and motorways, public transportation and railroads need substantial expenditure.

Agarwal et al. (2015) investigated purchasing procedures for industrial equipment in their research, including the results of a comprehensive literature review and several in-depth interviews. The authors arrived at the conclusion that a paradigm may be built for the process, which will aid researchers in the development of empirical testing. Key ideas of interpersonal interactions that make up industrial purchasing behaviour were also discussed. It seems from the established process paradigm that a two-stage process is relatively universal, which tends to back up the claims of those who came before.

Turka and Sasan (2015) discussed that the act of reacting to anything is called behaviour. As the old adage goes, "to be a bull fighter, you must first learn to be a bull." The same holds true for business purchasing practises. Organizational purchasing behaviour is more nuanced than consumer purchasing behaviour and so requires more advanced research. Buying inside an organisation refers to the process through which individuals make choices about whether to buy something, what to buy, when to buy it, where to buy it, and from whom to buy it. This research sought to provide light on the motivations, processes, and characteristics of business purchases. The factors that set business purchasing apart from individual purchasing were also illuminated. Several purchasing scenarios were emphasised, as were the qualities that influence a buyer's final choice.

Sargunam et al. (2016) argue that in developing nations like India, the bulk of the electricity demand is now met by thermal based power plants. In order to satisfy the expected growth in power consumption in developing nations, it will be necessary to allocate energy resources effectively. With a focus on the cost factor for coal power plants, this study presented an energy planning model that optimises the use of various energy sources for India's centralised and decentralised power production. For the year 2020, researcher was able to determine the electrical distribution pattern. According to the findings, coal-based power plants would account for 15,800 GWh (or 4%) of the total energy generated. Policymakers in poor nations may utilise the findings of this research to better shape energy policy.

Dokania et al. (2017) provided a snapshot of the coal market in India as it is right now. The state of the coal industry was reviewed, and the report also conducted national analysis to do so. The research was concerned with the potential of the coal industry as well as the difficulties it faces. The research indicated that problems in the coal business need an all-encompassing strategy to address accountability, planning, execution, transparency, health, and safety. The scholars also found that the coal sector in India had promising

futures. The findings of this research may be useful for policymakers and other interested parties in better understanding the state of the coal industry as well as the obstacles to effective planning and management.

Chavan et al. (2018) aimed to examine the knowledge structure and development of studies on industrial purchasing conducted between 1965 and 2015. Three hundred and fifty-seven papers were analysed using bibliometric techniques to show how different aspects of industrial purchasing have changed over time, how strongly they are correlated with one another, and how frequently they occur together. The growth of the important variables in industrial-buying research might be shown by a comprehensive mapping of this field of study. This report not only presented an international overview of the top nations and publications in the topic, but also a detailed plan for future research in the area. It is possible that some important work linked to industrial purchasing was missed or undervalued since this research only analysed data relevant to its analysis. This study made it easier to foresee and analyse trends in industrial purchasing in the near future.

Tamura et al. (2020) outlined the reasons in favour of a coal transition in the Indian context. In light of rising fossil fuel emissions and the need for cleaner energy services, India's policymakers have begun to pay more attention to the topic of energy transition. Nonetheless, this is one of the country's strategic problems. Demand for fossil fuels is rising, and this is one factor driving the need for stringent governmental measures to curb energy use and associated pollution. Yet, the conventional energy mix has remained unchanged because of the central role played by national economic objectives that require strong growth. For as long as there have been discussions about eliminating ecologically harmful energy sources, the coal industry has been at the front and centre. This is largely because many nations' largest contributor to greenhouse gas emissions is the coal-fueled power production sector. The coal industry's decline might have far-reaching political and social consequences. The mining and processing workers, as well as those in related industries, may feel the effects of a decline in coal demand. Yet, this study found that the energy shift has not seriously affected the number of people employed in or the number of towns that rely on the coal industry. Conversely, rising automation over the last three decades is mostly responsible for the decline in employment.

Chatterjee et al. (2022) looked at the cultural context of the Indian management style and how it affects the development of business-to-business partnerships. Researchers have looked at how jugaad (J), visvaas (V), and chalta hai (C) are three major cultural aspects of India that have an impact on the management style of Indian businesses. They are thought to have major effects on relationship management with regards to buyer psychology and behaviour in the B2B setting. This idea has revolutionised B2B marketing by dissolving the clear distinction between business-to-business and business-to-consumer markets. Based on this information, they looked at how these three cultural aspects of India affect business interactions. These findings underscore the importance of customers' brand identification, purchase engagement, and prestige sensitivity in determining their purchasing behaviour in the business-to-business setting. A survey with 364 participants provided statistical validation for the suggested conceptual model. The research showed that jugaad, visvaas, and chalta hai have a significant impact on the business relationship performance of MNCs partnering with Indian enterprises, particularly on the purchasing behaviour and psychology of B2B customers.

Research Gap:

While there is existing literature on industrial buying behavior and coal procurement, there is a lack of research specifically focused on different phases of buying process of beneficiated coal within coal-consuming industries. This study aims to present aspects and dynamics of purchasing beneficiated coal. The role of various factors in shaping the buying process of beneficiated coal remains relatively unexplored. This research aims to shed light on the influence of these factors on industrial buyers' decision-making processes.

Research Objectives:

- To examine the different stages involved in the buying process of beneficiated coal within coal-consuming industries.
- To identify and analyze the factors that influence industrial buyers' decision-making processes when procuring beneficiated coal.
- To conduct an analysis of existing models of industrial buying behavior.

Research methodology:

A comprehensive review of existing literature will be conducted to gather relevant information on the buying process of beneficiated coal and industrial buying behavior models. This review will provide a theoretical foundation for the research. The identified industrial buying behavior models will be analyzed. This analysis will assess the applicability and effectiveness of these models in explaining the buying process of industries. Based on the analysis, the research findings will be presented and discussed.

Analysis & Discussion:

Industrial Buying Behavior-Different Models: In India, the industrial buying behavior is influenced by various factors such as cultural differences, bureaucratic procedures, government regulations, and the level of economic development. Understanding the industrial buying behavior in India is crucial for companies looking to tap into the growing Indian market and develop effective marketing strategies. One of the key characteristics of industrial buying behavior in India is the hierarchical decision-making process. The top management has the final say in purchasing decisions, and lower-level employees are expected to follow their instructions. This hierarchical structure makes it essential for companies to build strong relationships with the top management and understand their preferences and needs. Another important factor influencing industrial buying behavior in India is the emphasis on personal relationships and trust. Indian organizations prefer to do business with suppliers they know and trust. Therefore, companies looking to enter the Indian market need to invest time and effort in building relationships with potential customers.

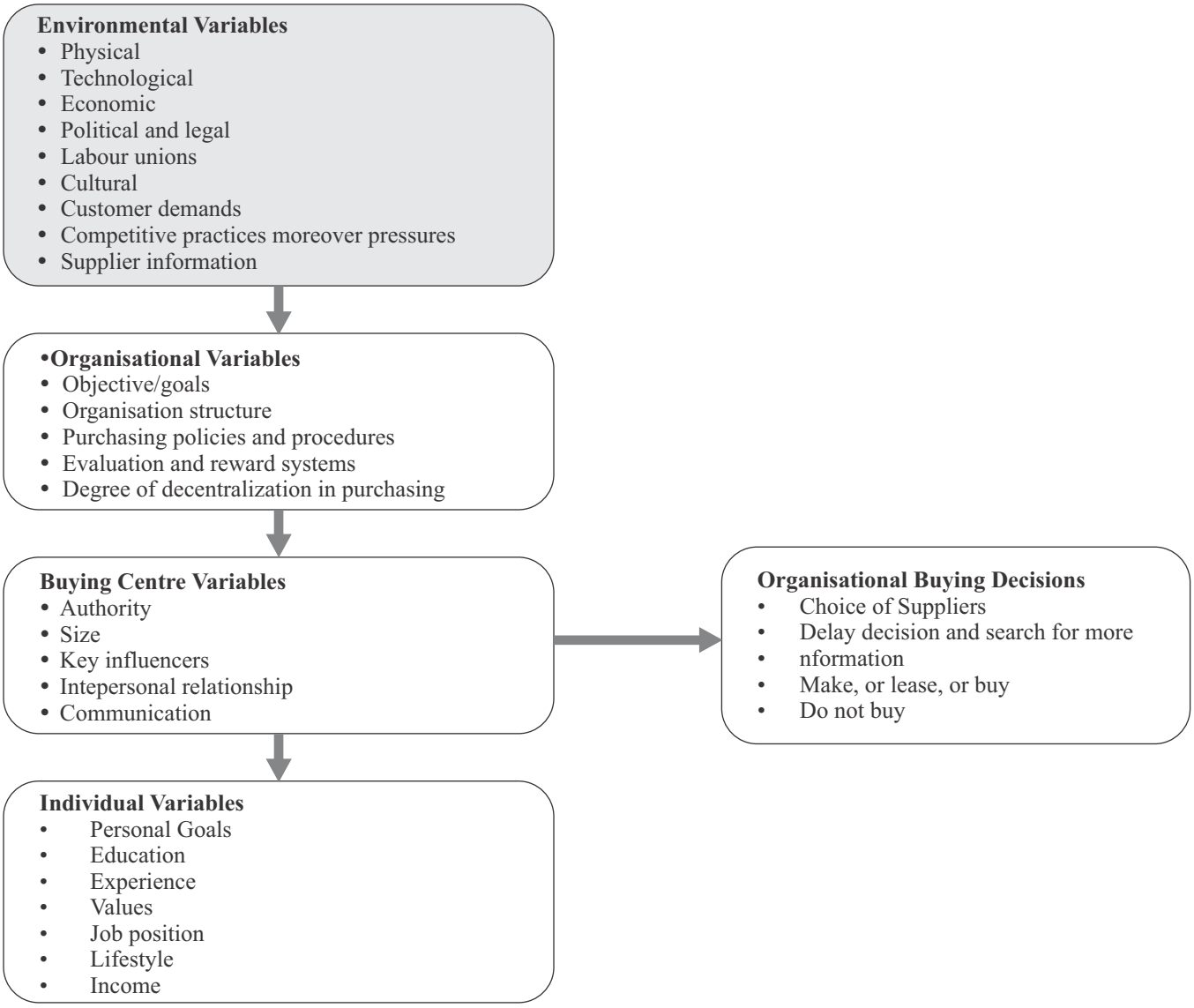
Additionally, Indian buyers tend to be price-sensitive and value-oriented. They prefer suppliers who can offer high-quality products at competitive prices. Therefore, companies looking to enter the Indian market need to focus on offering value to their customers by providing high-quality products at competitive prices. Furthermore, government regulations and bureaucratic procedures can also influence industrial buying behavior in India. Companies need to be aware of the various regulations and procedures related to procurement and supply chain management to navigate the Indian market successfully. Therefore, understanding the industrial buying behavior in India is essential for companies looking to enter the Indian market and develop effective marketing strategies. The hierarchical decision-making process, emphasis on personal relationships and trust, price sensitivity, and government regulations are some of the key factors that influence industrial

buying behavior in India. There are certain models designed and developed to understand organizational buying behavior which are given below:

Webster and Wind Model:

This organizational purchasing behavior model is fairly detailed. It takes into account the four categories of factors-environmental, organizational, buying center, and individual—that influence a company's purchasing decisions. Physical, technical, economic, political, legal, labor union, competitive, and supplier data are all examples of environmental factors. For instance, when the economy in downturn, manufacturing companies reduce their purchases. Organizational purchasing choices are heavily influenced by external environmental influences. Purchasing rules and processes, the amount of centralization in buying, and the effectiveness of assessment and incentive systems are all examples of organizational factors.

Fig 1: Webster and Wind Model



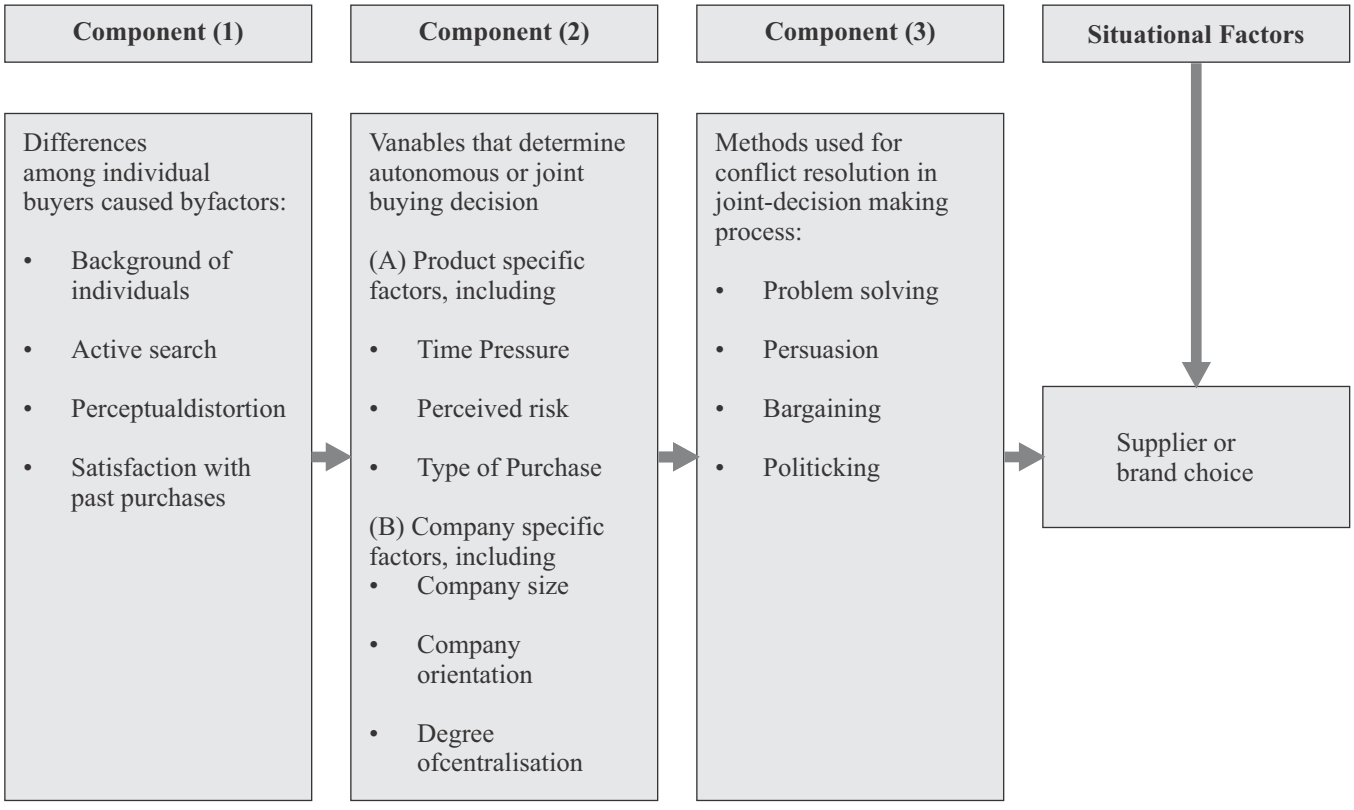
(Source: Webster and Wind, 1972)

The degree to which an organization centralizes or decentralizes its purchasing function is affected by these factors, as are the structure and operations of the buying center. Organizational factors, environmental variables, and human characteristics all affect how well a purchasing center operates. Solutions to the organization's purchasing issues and the achievement of members' individual objectives are both outcomes of the buying center's collaborative decision-making process. The 1972 model's merits include its comprehensiveness, generalizability, analytical-ness, and identification of numerous significant characteristics that might be taken into account by industrial marketers when formulating marketing strategies. The model struggles to describe the individual effects of the most important factors.

The Sheth Model:

Jagdish N. Sheth created the Sheth model of organizational purchasing in 1973. The collaborative nature of these decisions, as well as the mental state of the persons involved, are emphasized in this model of business purchasing. There are three parts to it, as well as contextual considerations, that influence the company's final selection on a certain supplier or brand. Background, information sources, search activity, perceptual distortion, and purchase satisfaction history all play a role in explaining why customers' expectations vary (Component 1).

Fig 2: Sheth model of Organizational Buying



(Source: Sheth 1973)

Education, position, and lifestyle all play a part in shaping an individual's history. The term "perceptual distortion" refers to the way in which people alter data to make it fit their preconceived

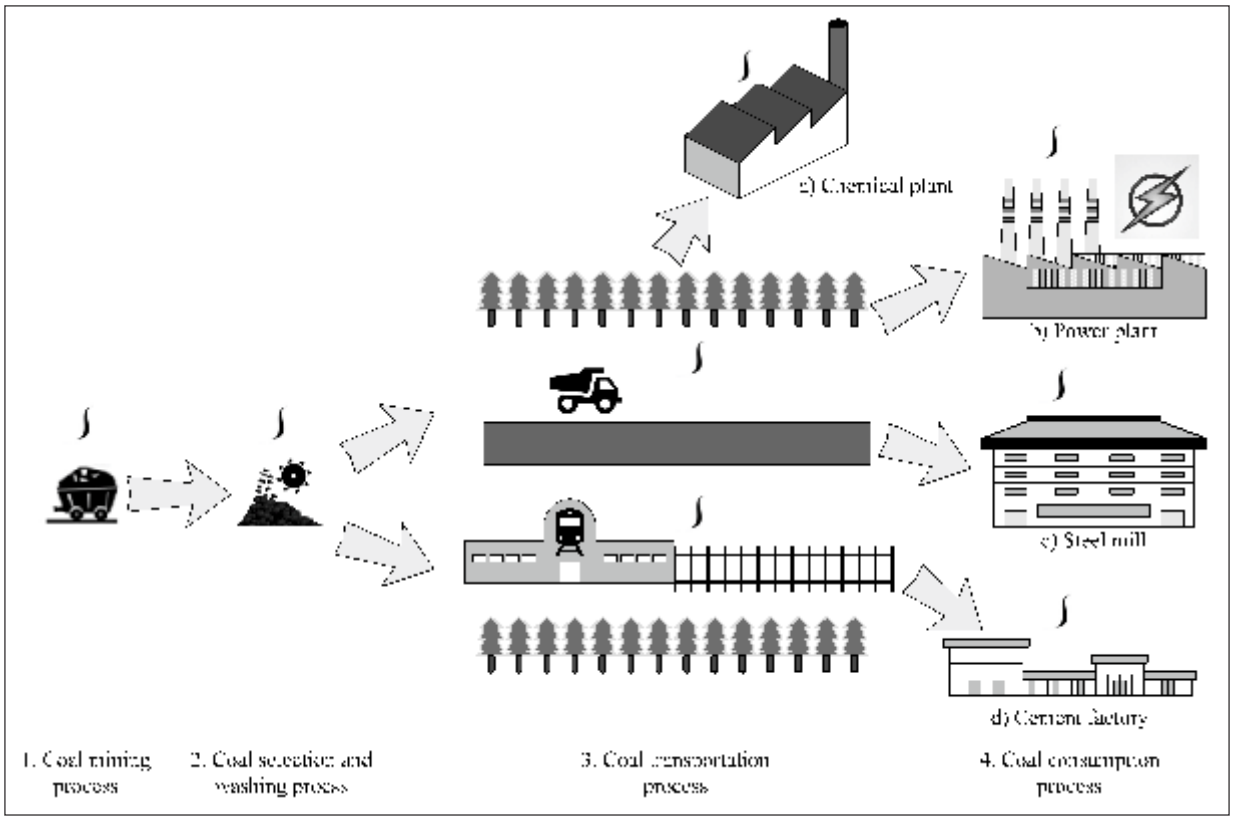
notions and personal history. While methods like component analysis and perceptual mapping exist, measuring perceptual distortion is challenging. The autonomy or interdependence of purchasing choices is determined by six factors in Component 2. The Sheth Model suggests that the more decentralized an organization is, the more opportunities there are for shared decision making among its members. Methods for resolving disagreements throughout the decision-making process as a group are represented by Component 3 of the model. When there is consensus on the organization's goals, problem-solving and persuasive techniques may be put to use. If no such understanding exists, negotiations will be held. Politics is used to settle disagreements over the process of making decisions. Economic circumstances, labour conflicts, mergers, and acquisitions are only a few examples of the many possible context elements. Their impact on the purchasing procedure is not accounted for in the model.

Buying Process of Beneficiated Coal:

The process of buying beneficiated coal involves several factors that need to be considered to ensure a successful purchase. Beneficiated coal is coal that has undergone a process to remove impurities and increase its calorific value. This process results in a cleaner, more efficient form of coal that is highly sought after by industries that require large amounts of energy. As the demand for beneficiated coal continues to rise, it is crucial for buyers to understand the various aspects of the buying process. Buyers need to identify the types of beneficiated coal (Thermal, Coking, Lignite and Bituminous Coal) available in the market and determine the specific type that meets their requirements. Thermal coal is the most widely consumed type of coal globally, followed by bituminous coal, while coking coal and lignite coal are used for specialized industrial applications.

There are several factors to consider when buying beneficiated coal. One of the primary factors is the quality of the coal, which can be determined by its ash content, sulfur content, and calorific value. Higher-quality coal will generally have a lower ash and sulfur content, and a higher calorific value, resulting in improved efficiency and reduced emissions. Another factor to consider is the quantity of coal required, which can impact the cost and logistics of delivery. Cost is also a significant consideration, and the price of beneficiated coal can vary depending on the type and quality of coal, as well as the supplier and the region. It is also essential to consider the supplier's reliability and compliance with regulatory requirements. This includes ensuring that the supplier follows environmental regulations and labor laws, as well as quality control and testing protocols. In addition, the delivery logistics and scheduling should be considered, including the transportation method, timing, and storage requirements. Lastly, it is critical to ensure that the purchased beneficiated coal meets the specific requirements of the application. This includes considerations such as particle size, moisture content, and chemical composition. The choice of beneficiated coal can impact the performance, efficiency, and emissions of the combustion process. Therefore, the factors to consider when buying beneficiated coal include the quality, quantity, cost, reliability of the supplier, compliance with regulations, delivery logistics and scheduling, and the suitability of the coal for the intended application. By carefully considering these factors, buyers can make informed decisions and ensure optimal performance and cost-effectiveness.

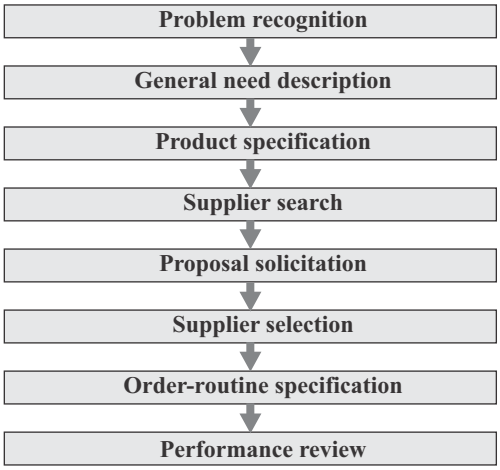
Fig 3: Coal supply chains



(Source: Luo, Zhang, Rao, Zhu and Guo, 2017)

Industrial purchasers go through a multi-stage procedure before reaching a final purchase decision. The relative weight of each stage in the purchasing process varies from one transaction to the next. To effectively advertise a product or service, industrial marketers need to be familiar with both the decision-making process and the contexts in which purchases are made. The eight-step "buy-phases" procedure for making purchases in the industrial market was created by Robinson in 1967. The following figure expands on these aspects, or stages, of the industrial buying process:

Fig 4: Phases in industrial buying behavior



(Source: Robinson, 1967)

Agencies have established regulations to ensure that coal mining and processing operations are conducted safely and in an environmentally responsible manner. The government plays a crucial role in the buying process of beneficiated coal through various regulations, policies, and incentives. The government has a responsibility to ensure that the coal being produced and sold meets certain quality and compliance standards. This includes regulations related to environmental impact, worker safety, and overall public health. In addition to regulation, the government may also play a role in promoting the use of beneficiated coal through incentives and subsidies. For example, the government may provide tax credits or other financial incentives for the use of beneficiated coal as a clean energy source. This can help to drive demand for the product and support the growth of the industry. Furthermore, the government may also have a role in the procurement of beneficiated coal for their own use. For example, government agencies may purchase beneficiated coal to fuel power plants or other facilities. This can provide a reliable source of demand for the product and support the growth of the industry.

Research Findings:

The research findings highlight the industrial buying behavior in India and the factors that influence the buying process of beneficiated coal. In India, industrial buying behavior is influenced by bureaucratic procedures, government regulations, and the level of economic development. The hierarchical decision-making process is a key characteristic of industrial buying behavior in India, where top management has the final say in purchasing decisions. Building strong relationships with the top management and understanding their preferences and needs is essential for companies entering the Indian market. Additionally, Indian buyers are price-sensitive and value-oriented, preferring suppliers who offer high-quality products at competitive prices. Companies entering the Indian market need to focus on providing value to their customers by offering high-quality beneficiated coal at competitive prices. Government regulations and bureaucratic procedures also play a significant role in industrial buying behavior in India. Companies need to navigate these regulations and procedures related to procurement and supply chain management to succeed in the Indian market. Furthermore, the research findings emphasize the importance of considering various factors when buying beneficiated coal. The quality of the coal, including ash content, sulfur content, and calorific value, is a critical factor. Buyers need to identify the specific type of beneficiated coal that meets their requirements, considering thermal coal, coking coal, lignite coal, and bituminous coal. The quantity of coal required, cost, reliability of the supplier, compliance with regulations, delivery logistics and scheduling, and suitability for the intended application are all crucial considerations in the buying process. The research findings also discuss different models used to understand organizational buying behavior, such as the Webster and Wind Model and the Sheth Model. These models provide insights into the environmental, organizational, buying center, and individual factors that influence purchasing decisions.

Conclusion:

The findings of this paper reveal that coal quality is the most important factor for Indian industries in their purchasing decision, followed by price and reliability. It is important for buyers to work with reputable suppliers who can provide high-quality beneficiated coal at competitive prices. Furthermore, buyers need to pay close attention to quality assurance and compliance requirements to ensure that the beneficiated coal meets the

necessary standards and regulations. Thus, the buying process of beneficiated coal is a complex process that requires careful consideration of several factors. Buyers need to work with reputable suppliers, conduct thorough research, and develop a detailed plan to ensure a successful purchase of beneficiated coal.

Recommendations:

To succeed in the Indian market and optimize the buying process for beneficiated coal, the following recommendations can be considered:

- Understand and adapt to the hierarchical decision-making process by building relationships with top management and aligning marketing strategies accordingly.
- Offer high-quality beneficiated coal at competitive prices to meet the price sensitivity and value-oriented preferences of Indian buyers.
- Stay updated with government regulations and comply with environmental, labor, and quality control standards to ensure reliability and build trust with buyers.
- Optimize delivery logistics and scheduling to ensure timely and efficient coal supply, considering transportation methods, timing, and storage requirements.
- Continuously assess the suitability of purchased beneficiated coal for the intended application, considering factors such as particle size, moisture content, and chemical composition.

Scope for Future Research:

Future research can focus on studying the specific impacts of government regulations and incentives on the buying process of beneficiated coal in India. Additionally, further research can also delve into the role of digital technologies and automation in optimizing delivery logistics and scheduling for beneficiated coal.

Limitations: -

The research findings are based on available information and general industry knowledge. The specific context and nuances of the buying process for beneficiated coal may vary depending on the region, industry sector, and individual organizational practices. Therefore, further research and data collection are recommended to gain a more comprehensive understanding of the buying process for beneficiated coal and its specific dynamics.

Reference:

Agarwal, M.K., Burger, P.C., Venkatesh, A. (2015). Industrial Consumer Behavior: Toward an Improved Model. Developments in Marketing Science: Proceedings of the Academy of Marketing Science. *Springer, 17 (1)*, 68-73. https://doi.org/10.1007/978-3-319-16976-7_17.

Alejandro, T. B., Kowalkowski, C., da Silva Freire Ritter, J. G., Marchetti, R. Z., & Prado, P. H. (2011). Information search in complex industrial buying: Empirical evidence from Brazil. *Industrial Marketing Management, 40(1)*, 17-27. https://doi.org/10.1016/j.indmarman.2010.09.006.

Baltaci, A. (2020). Developing a scale for understanding the irrational corporate buying decisions of industrial buyers. *Journal of International Social Research*, 13 (71), 866-876. https://doi.org/10.17719/jisr.10587.

Chatterjee, S., Chaudhuri, R., Vrontis, D., & Pereira, V. (2022). Examining the industrial buying behavior in Indian market: From behavior and cultural perspective for B2B buyers and suppliers. *Journal of Business Research*, 151 (7), 86-99. https://doi.org/10.1016/j.jbusres.2022.06.059.

Chavan, G., Chaudhuri, R., & Johnston, W. (2018). Industrial-buying research 1965-2015: Review and analysis. *Journal of Business & Industrial Marketing*, 34 (1), 205-229. https://doi.org/10.1108/JBIM-02-2018-0077.

Desai, B. G. (2014). Energy in India and the world: 2012-13. *Current Science*, 106 (1), 31-34.

Dokania, P., & Singh, B. (2017). The Coal Industry in India: Issues, Challenges, and Prospects. *Oil, Gas and Energy Quarterly*, 66 (1), 152-161.

Fan, Maoming & Chen, Qingru & Zhao, Yuemin & Tao, Daniel & Luo, Zhenfu & Tao, Xiuxiang & Yang, Yufen & Jiang, Xingkai & Zhu, Jinbo. (2005). Coal Ash Beneficiation and Utilization in Coal Separation Process. *World of coal ash (WOCA)*, 1-11.

Fließ, S., Johnston, W., & Sichtmann, C. (2015). Business Buying Behavior. In Handbook of Business Practices and Growth in Emerging Markets. *Springer*, 6 (4), 47-64. https://doi.org/10.1007/978-3-319-12463-6_4.

Janardhanan, N. K., & Tamura, K. (2020). The Sociopolitical Dynamics of Coal Transition in India. *International Studies*, 57 (2), 171-185. https://doi.org/10.1177/0020881720912886.

Roy, P., & Datta, D. (2022). Theory and models of consumer buying behaviour: A descriptive study. *SSRN Electronic Journal*, 11 (8), 206-217. https://doi.org/10.2139/ssrn.4205489.

Sargunam, J. (2016). Energy planning for India with focus on cost of coal-based power generation. *ARPN Journal of Engineering and Applied Sciences*, 11 (24), 14117-14120.

Sheth, J. N. (1973). A model of industrial buyer behavior. *Journal of Marketing*, 37(4), 50-56.

Turka, D., & Sasan, S. (2015). Organizational buying behaviour. *International Journal of Applied Research*, 1(11), 391-393.

Webster, R. E., Jr., & Wind, Y. (1972). Organizational buying behavior. *Journal of Marketing*, 36 (2), 12-19.

Web sources:

India's coal demand grew at highest pace globally in 2022. (2022). Retrieved from https://www.thehindubusinessline.com/markets/commodities/indias-coal-demand-grew-at-highest-pace-globally-in-2022/article66274593.ece

India to post highest percentage rise in coal consumption. (2022). Retrieved from https://www.thehindu.com/news/national/india-to-post-highest-percentage-rise-in-coal-consumption/article66271383.ece

Coal 2022-Analysis and forecast to 2025. (2022). Retrieved from https://iea.blob.core.windows.net/assets/91982b4e-26dc-41d5-88b1-4c47ea436882/Coal2022.pdf

Key World Energy Statistics 2021. (2021). Retrieved from https://www.iea.org/reports/key-world-energy-statistics-2021.