**Chapter 2: Literature Review**

**2.1. Introduction**

In this chapter, we will discuss the broader concept of sustainable procurement, the part of the government in sustainable procurement and sustainability in the mining industry. It also investigates the impact of sustainable procurement practices in the non-financial organization as well as the operational organization of the mining industry in Australia. The Literature review for this research paper is extracted from the journal articles, books and other online sources that had relevant information regarding sustainable procurement of the public sector, specifically associated with the mining industry in Australia. In this part of the report, we will examine the theoretical information disseminated in attempts to understand the sustainable public procurement in the mining industry.

**2.2. Concept of Sustainable Procurement**

Delmonico et al., (2018) argued that sustainability concerns in the supply chain are linked with growing risks of publicized disasters and the established campaigns to address the work safety issues, payments and its conditions, labours rights, and environmental considerations. The public sector procurement process has numerous complications regarding the laws and regulations of the environment and the nature of products or services the sector provides. The production of goods or delivery of services can directly or indirectly affect the environment and society.

According to Walker et al., (2014) sustainable procurement is the rapidly growing essential practice of the sustainable supply chains in the evolving frugality. The changes in environmental laws procurement in the public sector are steering towards sustainability. During recent decades, the government has taken initiatives to expand sustainability in procurement. In businesses, contemporary issues are to adopt green Human Resource Management (HRM) that refers to the practices of business according to the requirements of the environment (Luthra et al. 2015).

According to the stakeholder theory which was developed in 1984 by Freeman, it states that business creates value for all its stakeholders both internal and external. The internal stakeholders are employees, and managers, while the external stakeholders are government, suppliers, customers, and community (Touboulic and Walker, 2015). Government regulate all the businesses and restrict them to follow sustainable and green practices in their activities. The government could also be the customer and purchases different materials and services from private firms. The government mostly purchases electricity, oil, gas, and other natural resources from private companies for its citizens. Government procurement is on a large scale and has a great influence on the operations of its suppliers. The government mostly choose those parties which are sustainable and follow green practices. The following table shows the composition of the mining market in Australia based on the operating revenue in 2017.

**2.2.1 Definition of Sustainable Procurement**

Sustainable procurement is the emerging concept driven by the growing contribution of the corporation in Corporate Social Responsibility (CSR) and sustainability programs. According to Ruparathna and KasunHewage (2015), Sustainable Procurement is stated as a process by which organizations meet their needs and achieve lifetime value for money for goods and services by watching profits not solely for the organisation themselves, but also for the society as well as the economy while reducing the environmental damage.

**Sustainable Procurement**incorporates requirements, terms and standards that are harmonious with the safety of the environment and the social order. It is not merely about not using child labour or banned chemicals that can harm the atmosphere and public health (Sharma et al., 2015). Also, **Sustainable procurement** is the meeting of commercial needs for resources, merchandises, utilities and facilities in an environmentally-friendly, accountable and moral way (Lindon et al., 2014).

**2.2.2 Three dimensions of Sustainable Procurement (Environmental, Social and Economic)**

 Sustainable development in the mining industry incorporates the social, economic, and environmental dimensions at all levels such as locally, nationally, regionally, and globally. It is dealing with sustainable communities and their environment. It refers to sustaining the ecosystems, natural resources, communities and economy of the country. It is related to both the processes and products in this sector. The sustainability drive by the government of Australia was first initiated in the 1990s by conservation movement and the federal government addressed the dispute among the industry economic development and environmental issues- established by the ecologically sustainable development. ESD and economic development are the active working groups of leaders and form the environment and industry sectors. The common ground was identified to resolve this conflict which was to protect the environment in the exploration and extraction of minerals and production of energy (Ranängen & Åsa, 2017). This common ground was identified by the recognition of both the parties that protected the interests of both industry and environmental department. Meanwhile, around the globe, all the industries including mining industry joined the WBCSB (World Business Council for Sustainable Development) to adopt the main theme of sustainable development. The pressure state response system shows sustainable development agendas and policies (Mudd, 2010). The human activities to produce minerals are seen as pressure over the environment. The following figure shows the pressure state response (PSR) system.



**2.3. UN standards in sustainable procurement**

From procurement guideline and standard points of view of the UN, sustainable procurement fits well in the current Financial Regulation which necessitates that four general standards ought to be given due thought when practising the procurement function.

**Best value for money** – the idea is characterized by the UN as the "enhancement of entire life expenses and quality expected to meet the client's necessities while thinking about potential hazard components and assets accessible".

In like manner, economy and adequacy can be conveyed by guaranteeing that quality variables reach out to social just as ecological execution, where decreased vitality utilization results in more noteworthy efficiencies and long haul costs reserve funds.

**Fairness, integrity and transparency**– the regard of these standards are ensured through the joining of sustainability criteria at the beginning periods of the procurement procedure. Diminished reputational hazard likewise safeguards the open picture of uprightness and responsibility of UN Associations.

**Effective international competition** – this idea underlies SP, to maintain powerful challenge, SP must be executed dynamically and in full regard of the privilege of access to the UN advertise for providers from creating nations and nations with economies experiencing significant change.

**The interest of the UN**– SP is obviously to the greatest advantage of UN organizations, as it underpins the arrangement of procurement to their order and to their particular venture targets while guaranteeing economy and proficiency are accomplished. It ought to be noticed that specific organizations are not exposed to the UN procurement guidelines and tenets - as they have their own.

By alluding to suitable natural and social standards, UN procurement ensures the Organization's notoriety by managing organizations that cling to fitting national legislation. It ought to be noted again that particular offices have their own general legally binding terms and conditions. For instance, the ILO general conditions contain a work provision that expects adherence to a scope of standards concerning global work models of the ILO. Any infringement of the work statement by a provider establishes a rupture of agreement and in this manner a premise against which the agreement could be ended by the ILO (Yakovleva et al., 2017).

**Supplier Codes of Conduct**

At last, the Supplier Code of Conduct communicates the desires that the UN has of its suppliers and urges them to enrol with the UN Global Compact activity. TheTen Principles of the UN Global Compact cover issues, for example, human rights, work rights, bribery and debasement just as desires on natural administration. Various UN associations have embraced the UN Supplier Code of Conduct (SCC). Others, similar to the ILO, are still to embrace a Code of Conduct.

**2.3.1 UN Policy Framework for sustainable procurement**

The United Nations Environmental Program, UNEP, drafted economical open obtainment execution rule to help in the thought of the social order, frugality, and the earth in procurement processes

1. The project set up and governance structure formation

In the undertaking association and set up in the pilot nation of Mauritius, the NFO (Mauritius open obtainment office) set up month to month and every other week pamphlets on the motivation behind open procurement which was then utilized as a specialized gadget for later ventures, exercises, and occasions, alongside other applicable data

2. Assessment, review, and prioritization

The recommended strategy for surveying the adequacy of open procurement plans is directing meetings with procurers to evaluate the level of preparing and learning. Perceive and comprehend the hindrances in the usage of SPP in their separate organization just as recognizing items and administrations which are viewed as a need for the well-working of such tasks and approaches. A portion of the principal deterrents in executing SPP are enlightening, money related and administrative.

3. Sustainable public procurement policy and action plan

 Drafting an SPP plan is important for the effective usage of arrangements. It makes an unmistakable way and gives a course on sound premise on which to manufacture lucid and productive techniques. The SPP Action Plan ought to add to the nation's reasonable improvement as far as natural assurance, monetary advancement, wellbeing, welfare, and so forth. In the UNEP pilot nation of Chile, attempting to upgrade past e-taking in stage for contracting supervisors from the nation over, the UNEP concurrence with the sovereign country was changed trading two distinct workshops for about 50 individuals each with the nonexclusive term "preparing" and the new materials for the electronic stage are as of now being created as to give the whole Chilean open organization simpler access.

4. Implementation

Nations keen on applying the SPP approach in the improvement of local arrangements and might want to get financing for the execution of the different projects should legitimately apply to the UNEP and pursue a specific technique.

**2.3.2 UN sustainable procurement rules and regulations**

The United Nations Global Compact is a structure for organizations that are focused on adjusting their activities and systems to ten generally acknowledged criterions in the areas of human rights, work, nature and unfriendly to degradation. The standards include:

**Human Rights**

Rule 1: Businesses should care and regard the assurance of universally broadcasted human rights,

Rule 2: Make beyond any doubt that they are not complicit in human rights mishandles.

**Labour Standards**

Rule 3: Businesses are supposed to uphold the prospect of affiliation and the powerful acknowledgment of the privilege to aggregate haggling;

Rule 4: The end of all forms of inhibition and necessary work;

Rule 5: the viable cancellation of child labour; and

Rule 6: the disposal of parting concerning business and employment.

**Environment**

Rule 7: Companies should strengthen a practical way to deal with ecological issues;

Rule 8: Undertake actions to progress more prominent environmental obligation; and

Rule 9: empower the improvement and dispersion of earth neighbourly innovations.

**Anti-Corruption**

Rule 10: Companies should neutralize debasement in the entirety of its structures, including oppression and bribery.

**2.4. Role of local government in sustainable procurement**

Government divisions and local authorities can utilize procurement to address certainly picked plans in purchasing arrangements that will add to the municipal or natural objectives, or to variety or equality.

To enable local regimes to increase sustainability and decrease ecological effects the “California Sustainability Alliance” has built up a “Green Procurement Toolkit”. Green procurement can enable local bodies to set aside some cash, make local green occupations and expand their natural sustainability.

Under procurement principles, any procuring business should in this manner adopt a wide strategy to sustainability, reflecting limited financial, natural and social needs just as cross-cutting feasible advancement systems, for example, Life Cycle Assessment (Mclntyre et al., 2015).

**2.4.1 State Level Responsibilities**

The local government offers leases of minerals to the parties, approval of certain regulations, government assess the mining operational aspects such as health and safety.

**2.4.2 Water policy**

The water policy is one of the major responsibilities of the local government. Australia is considered as the second driest continent on the earth. The mining sector of Australia uses only 4 % of the national resources. In several states, the climate is dried (Lindon et al., 2014).

**2.5. Sustainability in the Mining Industry**

Some groups have recommended that mining is a naturally unsustainable movement since it depends on the investigation for improvement of non-sustainable assets. Another school of thought sees mining organizations as creation operators that can transform non-inexhaustible assets into rents, a progression of riches well beyond benefit, which can be utilized to produce manageable advancement in the nations and networks where they work, given the correct motivators. This displays a test to the strategy producers and the business heads, who have met this test with inventive reactions.

For a mining organization, maintainable practices are at the centre of its permit to work. An ever-increasing number of organizations have come to understand that the best way to be financially feasible is to work naturally and socially capable. The subjects of environmental change, asset shortage and vitality proficiency unequivocally reverberate with the mining business as they have been pondering those themes in their everyday business. At ING we are firmly dedicated to supportability and we need to help those organizations that are functioning for the future economy.

Sustainable mining practices require a certain set of practices which can influence the environment, economics, safety, resource efficiency, and community. (National Workshop 0n Proactive Approach To Sustainable Mining In India Held | Digital Goa, 2016)



Energy Efficiency

A precedent is Minera Media Luna in Mexico where from the get-go in the mine's improvement the choice was taken into account to transport metal down the mountain instead of trucking it down a lefty slant. This not just diminished the utilization of trucks filled with diesel, yet in addition fundamentally improved the well-being of the tasks. The compensation back of that underlying speculation originates from less operating expenses. As an additional advantage, the rubbing of the link produces vitality that is utilized to control the plant. ING has been the supporter of this mine improvement from the beginning.

Environmental Change

With activities in remote zones, mining organizations are intensely mindful of the impediment of the regular assets, comprising sources to deliver vitality. As mining activities are regularly in remote areas, it is costly to interface with the locals; and frequently separate energy offices should be manufactured or diesel should be brought.

Water shortage

Water is another rare asset that is a thought for some, mining organizations. Instead of utilizing crisp groundwater, organizations have swung to ocean water. Desalination plants have turned out to be all the more innovatively progressed and savvier, a few mining organizations have manufactured desalination plants to supply the tasks.

Future Sustainable Growth

The advancement of electric automobiles and sustainable power source enormously affects interest for metals and subsequently the mining business. Cobalt and lithium are referenced regularly, as these are claimed to fame metals utilized in rechargeable batteries. All the more vitally, copper is the metal of things to come, as copper is utilized in batteries, electric wiring in autos, engines of electric vehicles just as transmission lines. To shape an environmental change confirmation future, with increasingly electric vehicles and sustainable power source, crude materials will be required and those assets should be mined economically.

**2.5.1 Importance's of Sustainable Development in the mining industry**

Minerals and metals make a noteworthy contribution to the world economy and present-day social orders. Mining businesses are vital to all nations with mineral assets, specifically creating nations. Likewise, mining offers the chance to catalyze wide based monetary advancement, diminish neediness and help nations in gathering universally concurred improvement objectives, including the Millennium Development Goals, when overseen successfully and legitimately. Mining, minerals and metals are essential to the fiscal and public advancement of various states. Minerals are basic for present-day living. Improving the promise of minerals, metals and mining to reasonable improvement integrated undertakings at all dimensions to:

1. Backactions to work for the ecological, economic, welfare and societal effects and benefits of minerals, metals and mining for an amazing period cycle, comprising laborers' welfare and safety, and employ a range of connotations, boosting existing practices at the national and worldwide dimensions amongst interested Governments, international relations, mining companies and specialists and different partners to progress honestly and accountability for sustainable minerals and mining enhancement.

2. Cultivate sustainable mining exercises through the arrangement of budgetary, specialized and limit building support to making states and lands with financial prudence on the move for the mining and handling of minerals, together with small scale mining, and, where feasible and appropriate, improve esteem included preparing, reform logical and mechanical data and mend and reinstate corrupted destinations (Penney et al., 2012).

**2.5.2 Main sustainability issues in the mining industry**

The accompanying sustainability issues were basically distinguished utilizing criteria built up by the Global Reporting Initiative and The Dow Jones Sustainability Index, two current benchmarks for setting up an organization's supportability rehearses. Procedures for making mines, for removing minerals and stones, and for handling these materials differ generally.

**2.5.2.1 Environmental**

Among the most pressing environmental worries for stakeholders are mining organizations' energy and water use, the effect of mining exercises on biodiversity. Indeed, even the most inventive mining firms keep on relying on expanded measures of energy created by coal and oil subsidiaries, whose discharges add to a dangerous atmospheric warming and the environmental change, regardless of their endeavours to improve energy effectiveness. Mining organizations keep on trying to lessen the emanations of lethal substances, for example, carbon, nitrogen and sulphur dioxides, produced in purifying and ignition procedures, and well as the contamination of the air by particulates made in dealing with the mineral. They are additionally worried by the generation of ozone-draining substances and fluoride. Air quality in and close mines is amazingly delicate and must be observed and kept up at safe dimensions.

The sustainable utilization of water likewise represents a test to the division. Mining firms need water to change mineral into metal, which on account of gold requires the blending of cyanide in the water that is utilized for the partition of the metal from the metal, a procedure called "heap leaching." Companies are tested by the safe transfer of tailings that follow – the blend of wastewater, synthetic substances and metal left over from the extraction procedure.

**2.5.2.2 Social**

In the social circle, the industry is looking to address difficulties with respect to the worker and community security, stakeholder commitment, HIV/AIDS decrease, strategies for the existence cycles of mining tasks, and human rights. Endeavours have been made to represent these worries all points in the procurement network.

The well-being and security of labourers is a noteworthy test for mining organizations. Of specific worry in the business is the commonness of HIV/AIDS and other endemic sicknesses, for instance, malaria in mining networks, particularly for organizations with activities in sub-Saharan Africa. These illnesses have harmed the strength of local members, yet in addition, lessen the workforce and are diminishing the efficiency of the current workforce.

Human rights have likewise been a subject of worry for mining organizations and associations that track them. A few organizations have reacted with far-reaching human rights techniques and projects, for example, non-segregation and opportunity of affiliation; and approaches against kid work, and constrained or obligatory work. In any case, youngster and slave work keeps on being utilized in the industry. Operations, to a great extent.

**2.5.2.3 Economic**

There have additionally been cases that mining organizations don't work in manners that will furnish them with long haul fiscal sustainability. To keep up financial sustainability, different variables must be considered. Notwithstanding the customary elements, for instance, net deals, instalments and debts, different variables ought to likewise be noted. Exceptionally compelling are interests in the open segment and payments made to governments.

Mining organizations are challenged to add to the practical development of the communities in which they work by deserting establishments and infrastructure that will bolster the communities past the existence cycle of the mine. Organizations are urged to recognize destinations where local financial improvement is of specific focus and enthusiasm to stakeholders, layout approaches as for evaluating this commitment, to put resources into these establishments and infrastructure. Furthermore, organizations are encouraged to draw merchandise, materials, and administrations from the host or local communities.

To diminish bribery and other unlawful payments, organizations are emphatically urged to represent and uncover all charges of various kinds paid in all tasks. Donations, comparatively, might be tallied and uncovered. Various groups have started to squeeze governments and organizations to reveal all payments. Various groups have enthusiasm for the aggregates paid for land concessions or paid in taxes, especially in view of the various open doors for corruption, and to screen the manners in which that income comes to or does not reach different areas of the host community.

**2.6. Sustainability in Australian Mining Industry**

Mineral resource development can have a more practical future in Australia than in most different nations due to Australia's relative physical and financial preferred standpoint. Notwithstanding, this preferred standpoint has been dissolved to some degree and the sustainability of the division's commitment to Australia is under risk from diminished access, rivalry for investigation and improvement from developed and developing nations, vulnerability over the native title and the nonappearance of any administration arrangement that drives economic advancement of the area.

Indicators ought not to be grown imprompt by organizations as this does not address Australia's national advantages. In numerous indicators improvement programs all-inclusive, varying perspectives on what markers ought to be utilized, and who should choose them and screen execution, have been settled with a collaborative procedure driven by governments going about as an initiator and facilitator in the quest for their practical advancement strategies. The Canadian experience and the preliminary research in Australia observed that significant indicators should be created as a team with partners inside a framework that takes a comprehensive perspective on the big picture of the Australian economy, environment and community.

**2.6.1 Sustainable procurement practice**

The Australian Government's Sustainable Procurement Guide was modified in 2018 to match with the improvement of the 2018 National Waste Policy: Less waste, more resources. The 2018 National Waste Policy sets a guide for aggregate activity by organizations, governments, networks and people to improve Australia's waste administration. It likewise features reasonable acquisition by governments, organizations and people as an essential procedure to more readily oversee squander in Australia. and social dangers and benefits, and more extensive social and ecological ramifications.

Sustainable procurement introduces a chance to give more an incentive to an association by improving efficiency, surveying quality and execution, empowering correspondence between buyers, providers and partners, and by empowering advancement. It is obtainment that has the best natural, social and financial effects conceivable over the whole life cycle of products and ventures.

**2.6.2 Impact of sustainable procurement on non-financial performance**

The significance of SP practice as a key aggressive factor for organizations looking for worldwide presence by empowering FDI, and expanding worldwide share of the pie and an organization’s performance has turned into a fundamental piece of the SP framework. Countless have announced that there is a solid and positive connection between sustainable procurement practices and company picture, advancement, aggressiveness, remote direct venture, and vital objectives and targets

The idea of sustainable procurement is accepting an expanding dimension of consideration at both the local and worldwide dimensions, just as by academics and industry experts. Effects and advantages of SP rehearses have been an imperative research motivation for a long while, as it has been viewed as a vehicle for esteem making of an association through changing markets, expanding aggressiveness of eco-enterprises, setting aside extra cash, securing common assets, and encouraging job creation, which will thus add to sustainable development.

**2.6.3 Sustainable procurement challenges in the mining industry**

The idea and extent of sustainable mining differ broadly, however, for the most part, incorporate social, ecological and monetary viewpoints. By and large, the subject of resource shortage is not considered as pressing in the present discussion however the issue of natural/social effects stays essential. These topical issues of resources-technology-environment-social viewpoints are inseparably connected because of the expanding size of present-day mining which misuses lower grade however bigger mineral bodies, regularly through sizeable open cut mines. The volume of waste produced is currently higher than a century prior, which in outrageous cases can prompt extreme effects for long distance from mine sites (Harris et al., 2003).

As of late, there has been an expanding focus around strategies, for instance, "Life Cycle Assessment" (LCA) to evaluate the all-out expenses to deliver a unit amount of a specific metal. LCA incorporates a reason for representing.

**2.7 Summary**

The government regulates all the businesses and restricts them to follow sustainable and green practices in their activities. The government could also be the customer and purchases different materials and services from private firms. The government mostly purchases electricity, oil, gas, and other natural resources from private companies for its citizens. Government procurement is on a large scale and has a great influence on the operations of its suppliers. The government mostly chooses those parties which are sustainable and follow green practices. The Australian government is more concerned to protect the environment, so government organisations do not contract with any firms which are not following the required environmental standards in their operations (Mercado et al. 2016). The purpose of private organisations has to reduce their costs and increase their profit margin, which resulted in a violation of the standardised practices by most of the organisations.

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