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The positive role of corporate entrepreneurship in Indian mining sector in Covid-19 pandemic

Mining is an important industrial sector for the growth and development of Indian economy. The basic raw materials of many Indian industries like thermal power generation, iron and steel, fertilizers, petroleum and natural gas, petrochemicals, cement, etc. comes from the mining industry. Due to such demand, there was potential growth in the mining sector for the financial year 2020-21. But due to the Covid-19 pandemic and the restrictions of nationwide lockdown, this sector shows a negative growth rate. It faces several challenges and obstacles. Such challenges and obstacles can be removed through innovative corporate strategy popularly known as corporate entrepreneurship and intrapreneurship, which is advantageous to the successful organization. The purpose of the study is to discuss the positive role of corporate entrepreneurship or intrapreneurship in mining industry during the Covid-19 pandemic. The article also discusses the obstacles faced by the organization while implementation of corporate entrepreneurship. Further, the article systematically discuss about the Indian mining industry, its importance, growth, obstacles, role of corporate entrepreneurship in the mining industry. The secondary data from literature, books, journals, statistical reports, annual reports have been used for validation of the study. The positive suggestion based on discussion has important managerial implications.

Keywords: Corporate entrepreneurship; Indian mining endustry; Covid-19 pandemic.

1.0 Introduction

India has a sufficient amount of mineral ores. Currently, India produces 90 varieties of minerals, out of which 4 are fuel minerals, 10 metallic, 71 non-metallic, and 5 atomic (Parida and Madheswara 2021). The contribution of Indian mines and rank of India in world production of Principal Minerals and Metals, 2018 is summarized in Table 1.

The current scenario of the Indian mining industry during 2020-21 (April- September) as compared to 2019-20 (April-September) is mentioned by (Jain 2021) which is described in Tables 2 to 7.

Table 1: Contribution and rank of India in world production of principal minerals and metals, 2018

Sector	Production quantity (in '000 tonnes)		Contribution %	The rank of India as compared to the world's Production
	World	India		
Metallic minerals				
Bauxite	326000	23688	7.3	5th
Chromite	40800	3971	9.7	4th
Iron ore	2923	206	7.0	4th
Manganese ore	53000	2820	5.3	7th
Industrial minerals				
Magnesite	29500	147	0.5	15th
Apatite and rock phosphate	232000	1285	0.6	16th
Metals				
Aluminium (primary)	62700	3696	5.9	4th
Copper (refined)	23900	454	1.9	11th
Steel (crude/liquid)	1812	111	6.1	2nd
Lead (refined)	12000	620	5.2	4th
Zinc (slab)	13300	696	5.2	3rd

Source: Annual Report of Ministry of Mines 2020-21

Mining is an important industrial sector for the growth and development of Indian economy. The basic raw materials of many Indian industries like thermal power generation, iron and steel, fertilizers, petroleum and natural gas, petrochemicals, cement, etc. come from the mining industry.

But the mining sectors in India are facing challenges in terms of productivity of labour and capital due to structural constraints and the Covid 19 pandemic. Such challenges and constraints can easily resolve through corporate entrepreneurship. The present article discusses about the positive role of corporate entrepreneurship or intrapreneurship in the Indian mining industry. The article also discusses the obstacles faced by the organization while implementation of corporate entrepreneurship. All such topics like the obstacles faced by the mining industry, positive role

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Table: 2: Mining and quarrying sector contribution in all India gross value added during 2019-20 (April-September) and 2020-21 (April-September) (at current prices)

Sector	Sector	2019-20	2020-21	
Mining and quarrying	Mining and quarrying	180771	123804	The contribution of the mining and quarrying sector is decreased by 21.83%
All India	All India	8955130	7846081	
Contribution	%	2.02	1.58	
% Change		–21.83		

Source: Ministry of statistics and programme implementation quoted by (Jain, 2021).

Table 3: Production of MCDR minerals during 2019-20 (April-September) and 2020-21 (April-September) (provisional)

2019-20	2020-21	% change during 2020-21 over 2019-20	
Value in Rs. (000)	Value in Rs. (000)		Production of MCDR decrease by 9.02% over the previous year.
360061668	327573196	-9.02	

Source: MCDR returns; Quoted by (Jain, 2021).

Table: 4: Average daily labor (provisional) working in mines during 2019-20 (April-September) and 2020-21 (April-September)

2019-20	2020-21	% change during 2020-21 over 2019-20	
Value in Nos.	Value in Nos.		Average daily labor working in mines decrease by 14.21%
111419	95585	-14.21	

Source: MCDR returns Quoted by (Jain, 2021)

Table: 5: Minerals-wise reporting mines (provisional) during 2019-20 (April-September) and 2020-21 (April-September)

2019-20	2020-21	% change during 2020-21 (April- September) over 2019-20 (April-September)	
Value in Nos.	Value in Nos.		Minerals wise reporting mines decrease by 1.45%
1242	1224	-1.45	

Source: MCDR returns Quoted by (Jain, 2021).

Table: 6: Export of ores and minerals during 2019-20 (April-September) and 2020-21 (April-September)

2019-20	2020-21	% change during 2020-21 (April-September) over 2019-20 (April-September)	
Value in Rs. (000)	Value in Rs. (000)		Export of ores and minerals decrease by 30.65%
1011906298	701771398	-30.65	

Source: Directorate general of commercial intelligence and statistics quoted by (Jain, 2021)

Table: 7: Import of ores and minerals during 2019-20 (April-September) and 2020-21 (April-September)

2019-20	2020-21	% change during 2020-21 over 2019-20	
Value in Rs. (000)	Value in Rs. (000)		Import of ores and minerals decrease by 48.62%
5805481045	2982959930	-48.62	

Source: Directorate General of Commercial Intelligence and StatisticsQuoted by (Jain, 2021).

of corporate entrepreneurship in the mining Industry are discussed systematically

2.0 Constraints or obstacles in the mining industry

In the current globalization period, the mining sector faces challenges that reduce the productivity of labour and capital. It also faces volatility of the rank, logistical constraints, and various other human resources constraints. Further, the mineral deposits and mine developments are located in remote areas which adversely affect the host governments and other stakeholders in the form of an increase in commodity price movements, the efficiency of mining exploration, health and

safety challenges, taxes, environmental needs, and community welfare (Scheepers, 2009). Further, it increases the cost of mining and extracting minerals (Macfarlane 2001; Urban and Oosthuizen, 2009).

Besides, the mining industry also faces challenges in the form of the physical and economic depletion of ore (Minnit 2001); It results change in quality and structure of ore by increasing the operational costs of exploration. Further, mining exploration has been disrupted due to industrial action, remoteness of mining ores, increased taxes, increase in capital expenditure to bring supply to the market, and corruption (Hope 2014a; Moato 2012). Although, the frequent strikes in the mining industry also left the sectors unattractive for investors (Bar-Yam, Lagi and Bar-Yam, 2015, Jabane Bauwens, 2019). Further, mining organization consists of a bureaucratic organizational structure (Thornberry, 2002; Melk, 2010; Smith 2014) which prevents innovation in the mining industry (Urban and Oosthuizen, 2009; Gcaza and Urban, 2015; Heinze and Weber, 2015).

In the recent Covid-19 pandemic, a nationwide lockdown was called by the Ministry of Home Affairs, Govt. of India. It has disrupted the effective operations across industries, and the mining sector. The mining industry faced lots of challenges due to the non-availability of labour and lower mineral off-take due to lack of demand from end-user sectors (Jain, 2021).

3.0 Adoption of corporate entrepreneurship or intrapreneurship in the mining industry

In the current dynamic environment, mining industry can only be sustained and achieved a competitive advantage if it adopts innovation through corporate entrepreneurship and intrapreneurial activities (Bouwer 2012; Hope 2014b; Urban and Oosthuizen 2009). The corporate entrepreneurship is known under different names (Sharma and Chrisman, 1999) like intrepreneuring (Pinchot. 1985), corporate venturing (Biggadike. 1979), internal corporate entrepreneurship (Jones and Butler, 1992), strategic renewal (Guth and Ginsberg. 1990). internal entrepreneurship (Schollhammer. 1982; Vesper. 1984) and venturing (Hornsby et. al., 1993). Among these the most popular name used for innovation within an organization is corporate entrepreneurship and intrapreneurship. Both the terms are slightly different. Such difference between them is better explained in Amo (2010). The scholar argues that intrapreneurship is initiated bottom-up by an employee to fulfill own interests, whereas corporate entrepreneurship is initiated at the top-down to follow the organization's strategy. Further, it is also suggested that corporate entrepreneurship is a strategy of the organization which can be achieved through employee innovation behaviour. But intrapreneurship is the individual innovative behaviour within the organization.

Zahra (1995-1996) defined corporate entrepreneurship as the sum of a company's innovation, renewal, and venturing efforts. Innovation is defined as the creation and introduction of new products, processes, and systems. Renewal means revitalizing the company's operations by changing the scope of its business, its competitive approaches, or both. Further renewal is also identified as the means of building or acquiring new capabilities that add value for shareholders. Lastly, Venturing is defined as entering new businesses by expanding operations in existing or new markets (Zahra, 1995. 1996). Further, it is defined as an organization strategy by which management can foster innovation within an organization (Morris et al., 2010).

Similarly, Antoncic and Hisrich, (2003, 2004) defined intrapreneurship as entrepreneurship within an existing organization that can be implemented through deviation from the customary way of doing business. Further, it involves the practice of developing a new initiative or venture within an existing organization to exploit opportunities and create value, entrepreneurship by contrast focuses on exploiting opportunities outside of an existing organization (Parker, 2011).

Many of the researchers identified empirically the positive role of corporate entrepreneurship in the mining industry. Sakhdari, et.al., (2020) concluded the positive effect of corporate entrepreneurship on mining firm performance. The study has carried out over a sample of 272 SMEs operating in the mining industries of Australia and Iran. The scholar discussed the positive role of corporate entrepreneurship in small and medium-sized enterprises of the mining industry. Further, it is also suggested that corporate entrepreneurship also increases organizational capabilities. Such capabilities increase the availability of sufficient resources.

Similarly, Scheepers, (2009) studied the level of corporate entrepreneurship in the South African alloy mining industry. The empirical study was carried out over a sample of 252 middle managers through questionnaires of corporate entrepreneurship climate in Xstrata Alloys. The researcher empirically identified the influence of the 13 constructs of corporate entrepreneurship that helped to create the entrepreneurial climate in the South African alloy mining environment. To promote corporate entrepreneurship in the mining environment, an organization should adopt the entrepreneurial leadership style which results in flexibility, change, innovation, and responsiveness. A similar type of empirical study has also been done by Melk, (2010) in the gold mining industry where the researcher identified the level of corporate entrepreneurship within higher-level employees in the gold mining organization. The study has been done through a self-administered questionnaire over the sample from managers to supervisors. Researchers identified the 13 constructs measuring the entrepreneurial climate in the gold mining industry.

Further, Urban and Oosthuizen, (2009) has done multi-

disciplinary research in which the researcher has identified the positive role of corporate entrepreneurship towards the performance of a mining organization. The study has done over a sample of 103 respondents at the managerial level. The result indicates the positive impact of intrapreneurship on firm performance. Further, the researcher suggested the implementation of corporate entrepreneurship in the organization through positive management support, appropriate rewards, empowered teams, etc.

Similarly, Zhang et. al, (2018) studied the effect of corporate entrepreneurship in a Chinese state-owned business conglomerate that has been preparing for internationalization and mainly engaged in metal and nonferrous metal resource exploration. The researcher adopted the longitudinal case study along with an analysis of company documents. The data was collected through thirty-one semi-structured interviews and seven focus-group discussions with 55 informants. The scholars discussed the entrepreneurial initiatives and their corresponding outcomes in the Chinese state-owned business conglomerate. Such entrepreneurial initiatives have taken under the banner of corporate venturing, intrapreneurship, bringing the market inside, and entrepreneurial transformation.

Further, Gcaza and Urban, (2015), empirically tested the levels of entrepreneurship in the firms of South African mining industry. The researchers identified a significant and positive relationship between entrepreneurial orientation which consists of innovativeness, risk-taking, pro-activeness, and the corporate entrepreneurship strategy in the form of cooperative corporate venturing, internal corporate venturing, organizational rejuvenation, strategic renewal, and business model reconstruction.

Similarly, Sakhdari and Farsi, (2016) identified the role of intrapreneurship in SME's mining industry in Iran. The study has done over a sample of 126 respondents employees working at small and medium supplier firms of the mining industry. The results indicate that firms with more business partners have more engagement in corporate entrepreneurship.

Further, Sakhdari and Farsi, (2018) and Sakhdar et. al, (2020) investigated the impact of a firm's entrepreneurial management on corporate entrepreneurship. The study has done over 298 firms providing products and services to the mining industry of Australia and Iran. The sample comprises 2097 Australian and 800 Iranian firms supplier companies providing products like mining, equipment, technology, and services to the Iranian and Australian mining industries. The researcher discussed the entrepreneurial management approach that helps the organization to promote corporate entrepreneurship. The researchers also suggested that the management should adopt flexibility in the organization structure through decentralized in decision making, less formalization, etc.

Similarly, Jabane Bauwens (2019) studied the existence of intrapreneurship in the mining and agriculture services sector. The researcher uses a case study strategy approach, in which data is collected through semi-structured interviews of senior managers and executives working at mining and fertilizer divisions of the organization. The researcher suggested that lack of management support and bureaucracy in the organization structure both are major constraints of corporate entrepreneurship. In order to overcome such constraints, the management should provide support by relaxing the rules and regulations.

4.0 Suggestions for implementing corporate entrepreneurship

The Covid-19 pandemic adversely affects the demand and production of the mining industry. It led to adverse effects on the disruption to global trade, employment, and community welfare. To overcome such challenges the mining organization should adopt corporate entrepreneurship by motivating the middle managers to become innovative. It can be done through different ways like improve entrepreneurial leadership by articulating an entrepreneurial vision to all levels of the company; improve management support by motivating the employee to develop innovative idea, as well as flexible the rules and regulations within the organization; remove the obstacles and bottlenecks; encourage employees to take calculated risks and practical experimentation so that they will become more tolerant toward risks and failure; innovation should be an essential topic in leadership development programmes; appropriately recognize and reward employees in relation to job performance, and ensure that recognition and rewards to innovative employees correlate with the value added to the company; give employees freedom to use time to work on innovative ideas without having to ask for permission; allow cross-functional project team's greater freedom to make decisions; provide ample opportunities for learning and growth to take place, design and implement a programme that exposes employees to customers of the company's products in order to create a strong customer orientation; move from the traditional bureaucratic organization structure to flat organisational structure with open communication (Urban and Oosthuizen, 2009).

5.0 Conclusion and implications

The mining industry faces a lot of challenges and internal constraints due to the current dynamic global environment as well as the Covid-19 Pandemic. The authors discuss about such challenges and overcoming of such challenges through proper implementation of corporate entrepreneurship and intrapreneurship. Such discussion has practical implications for the top management of the organization by actively cultivates entrepreneurial orientation which provides employees with a sense of innovation, risk-taking, and pro-activeness that results from positive firm performance. As the

mining industry is experiencing volatility, mining managers need to find an efficient means of being more proactive, innovative, and able to take bold action in implementing new projects in an uncertain environment. Lastly, employing CE strategies must influence the technovation which is used of technology and innovation to achieve its goal and objectives, that results in gaining market share, maximizing profits, or adding value for stakeholders – particularly for labour and the community in the mining sector (Gcaza and Urban, 2015). Further, the top management can implement intrapreneurship through mining middle managers. They can initiate the process of strategic change and organizational renewal by providing rewards and allow employees to take the risk and explore the feasibility of innovative ideas. They also provide political and organizational support for innovative work (Hornsby et. al, 2002). Further, middle managers play informational roles and actions such as those associated with entrepreneurship between top management and operating level managers (Morris, et.al, 2010).

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(Continued on page 368)