

The Dynamics of Cognition Process of Micro, Small, and Medium Enterprises (MSMEs): Evidence From India

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ABSTRACT

Recent economic slowdown and subsequent bounce back has translated into different learnings for organizations. This article attempts to understand the various factors at work that have defined the cognition process of small and micro level enterprises and their readiness to adapt to new situation(s). A comprehensive review of literature has helped identify certain factors that were inculcated into a questionnaire administered on 50 micro and small Indian business enterprises from where the final variables have been identified. The key conclusions show a mix of factors, five in number, which have been grouped under the broad headings of external and internal variables. The flexibility to acquire new knowledge appears to be key for sustainability, among the factors and variables studied. Another aspect is the size of an organization has little role to play in cognition process, and its flexibility to adapt to new situations for survival and growth.

KEYWORDS

cognition process, flexibility, micro and small organizations, size, Sustainability

INTRODUCTION

The recent economic slowdown and subsequent bounce back has translated into different learnings for different organizations (Nuchter et al., 2021). While some have been quick enough to grab the opportunity by acquiring new learnings and changing accordingly, others have not been able to adjust to the changing situation and stagnated out (Cantone et al., 2021). Whatever the organizational strategy and response, a common undercurrent may be identified that have helped micro small and medium level organizations to survive during these tough times when bigger organizations have incurred huge losses and even closed down. One such factor happens to be acquiring newer learnings over a time period (Dzhengiz & Hockerts, 2022).

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Organizations try to learn new things amidst a fast, dynamic and changing world and develop their cognition processes accordingly (Dzhengiz & Hockerts, 2022). The process of organizational cognition has been studied in detail (Secchi & Adamnson, 2017; Secchi & Cowley, 2018) and has been found to be effective in solving organizational issues (Secchi & Cowley, 2018).

Sustainability had been the top priority of organizations including Micro, Small and Medium Enterprises (Czainska et al., 2021; Syamsari et al., 2022) for which they have been designing strategies and making policies amidst a host of factors that include government interventions, internal weaknesses and rampant disruptions (Syamsari et al., 2022). This finds a place in core organizational activities and strategies as well (Dzhengiz, 2020; Watson et al., 2018). The implementation of sustainability related measures in Micro, Small and Medium Enterprises (MSMEs) is a vital problem and has received attention in literature only recently (Andriyani et al., 2021; Endris & Kassegn, 2022; Prameka et al., 2021; Vasquez et al., 2021). One issue that arises here is whether sustainability is linked to the understanding of cognition process of MSMEs that may help them not only grow but also survive over a period of time.

The role of MSMEs is critical to the Indian economy and they affect the overall business situation in the country (Batra & Sharma, 2018; Kaur & Saini, 2021). Therefore, the sustainable efforts of MSMEs assume all the more significance (Jayanti & Raghunath, 2018) and the sustainability practices of Indian MSMEs have been studied for their effectiveness (Maheshwari et al., 2020), growth and opportunities (Zanjurne, 2018). Important policy changes have posed several challenges for Indian MSMEs like global competition (Shetty, 2022) and this may mean greater focus on sustainability for Indian MSMEs. This paper addresses the sustainability of Indian MSMEs by understanding their cognition process.

A BRIEF REVIEW OF LITERATURE

MSMEs and Sustainability

According to Bansal (2005), sustainability is all about “a firm’s strategic intent to simultaneously achieve conflicting and diverging environmental, social and economic goals.” They become all the more vital for micro small and medium level organizations particularly in the Indian context. MSMEs sustainability and growth depends on a host of factors including technological upgradation, innovation and cognitive aspects (Harvie, 2019). Organizations have classified their issues into several broad categories as literature indicated. These are issues related to strategy, complexity and ambiguity (Hart & Milstein, 2003; Sharma, 2000), market orientation and performance related matters (Yadav et al., 2021), supply chain and environment (Jamwal et al., 2021), innovation (Khurana et al., 2019) besides competition (Agarwal et al., 2023; Afdal, 2021) and digital literacy (Kurniawati et al., 2021; Rupeika-Apoga & Petrovska, 2022; Yanto et al., 2022). In all these the attention towards cognition process is one thing that appears common.

Endris and Kassegn, (2022) have studied MSMEs in some parts of Africa while Panigrahi and Rao, (2018) have studied the cognition with respect to supply chain processes of Micro, Small and Medium Enterprises in India. Sustainability for MSMEs has been studied in Phillipines Badoc-Gonzales et al., (2021), Thailand (Amornkitvikai et al., 2022; Mongkol, 2022; Suvittawat, 2022), Tanzania (Eijdenberg, 2019), Indonesia (Gunawan, & Cahayani, 2022; Purba et al., 2021), Ethiopia (Tekola & Gidey, 2019) and Vietnam (Truong, 2022) besides India (Agarwal et al., 2023; Khurana et al., 2019).

Cognition Process and MSMEs

Fassin et al. (2015) has reported the cognition process of Micro, Small and Medium Enterprises owner–managers’ from six countries in Europe Keeping Corporate Social Responsibility and sustainability at the core, they report customs, linguistic variable and dissemination of knowledge

as factors. Onjeye et al., (2022) has found capacity building as a key factor in MSMEs of Nigeria. According to Leodolter, (2017), the approach of management and its' relationship with organizational process. Belkhodia et al., (2007) have further included absorption of knowledge, the tendency to learn, organizational culture, experience in terms of R&D along with its' relevance coupled with individual centric variables as factors. The individual role has also been highlighted by Richert et al., (2017). Contandriopoulos et al., (2010) have also propagated exchanging of knowledge for smooth cognition. In terms of competition, O'Gorman (2001) has added another dimension of cognition namely competition mix of "where and how to compete". Another vital factor is the role of managers and leaders (Deryckere, 2017; McEwen & Schmidt, 2007).

Perhaps, the most comprehensive index of sustainability that can be used in understanding their cognition process was developed in Brazil called the Corporate Sustainability Index (ISE) having several factors namely General, Nature of the Product, Governance, Economic-Financial, Social and Environmental (BM & FBOVESPA, 2011; Center for Sustainability Studies, 2012). There appears a gap in literature with respect to understanding the cognition process of MSMEs as far as their sustainability is concerned and there are no means to measure this effect.

The size of an MSME plays a role in performance (Hernández et al., 2020) as well as in their sustainable efforts and this has been reported in multiple studies (Amornkitvikai et al., 2022; Harvie, 2019; Vasquez et al., 2021). However, the size of MSME has not been discussed in extant literature with respect to their cognition process. We can thus hypothesize:

H1: The size of Micro, Small and Medium Enterprises plays a role in their cognition process

METHODOLOGY

Objectives

A review of literature shows cognition process of the organizations have been studied in detail globally. However, there is a dearth of mater on the role of cognition in relation to sustainability when it comes to micro small and medium level organizations operating in India. Therefore, the objective of the current research is to understand this cognition process of Micro, Small and Medium Enterprises and their role in sustainable development. A sub-objective is also to understand if the size of an organization plays a role in this cognition process or not.

Methods

In order to achieve the above mentioned objective, a comprehensive review of literature was done. This gave an understanding of various factors that may go into the cognition process of an organization and these have already been described above. These factors were also a part of Corporate Sustainability Index (2012) developed by Centre for Sustainability studies in Brazil. This scale was inculcated into a questionnaire which was the final instrument used in the study.

The design of the study was Cross Sectional Descriptive and Multi-Stage Sampling technique was used. The instrument was administered on entrepreneurs from 50 micro and small business enterprises. The Indian state of Uttar Pradesh and the National Capital Region were selected for conducting the study. These maximum population of India lives in these two states. The cities covered were Lucknow, Kanpur, Kannauj, Agra, Bhadoi and Noida and micro, small and medium enterprises manufacturing a variety of products like plastic items, *itr* (an Indian version of perfume), carpets, pan masala (mouth fresheners) and other items were selected at random. These cities were selected as they have several MSMEs making a variety of products.

The questionnaires were administered personally and a few interviews were also conducted. All the 50 questionnaires have been considered for analysis. After checking for completeness and accuracy the data was fed into SPSS version 15.0 and the final variables were identified using Factor Analysis

and Regression. They were further regrouped into two categories and chi-square test was conducted to test the hypotheses. The results are reported in the relevant section.

FINDINGS & ANALYSIS

Factor Analysis

For gaining an understanding as to what determines the cognition process of Micro, Small and Medium Enterprises, Factor Analysis was conducted in order to identify the sub factors. Thus, the data was reduced as variables were grouped together into fewer manageable factors. First of all, Kaiser-Meyer-Olkin (KMO) statistic was calculated to find out whether the data is appropriate for Factor Analysis or not. A KMO value that is greater than 0.6 can be considered as adequate (Kaiser and Rice, 1974). The results are tabulated below (see Table 1):

The value of KMO is 75% which is acceptable and significant. Principal Component Analysis with Varimax rotation was performed and where Eigen values were greater than one those factors were considered. In each case, the loadings of factor were more than 0.45 which make them appropriate (Hair et al., 1995).

The factors obtained were five in number down from a total of 18. The first factor was called General (Ge) which had five sub factors in it. These were Encouraging Creativity amongst employees by the organization, Knowledge Dissemination process and channels, Learning Style and Tendencies of the individuals, Knowledge Exchange mechanisms that exist, Perceptions of individuals and Motivational Levels of employees to acquire new knowledge and skills. The second factor was labeled as Nature of the Product (NP) and contained two sub factors namely Scope for Innovation and Quality & Acceptability of the products. Next was Economic-Financial (EF) where there was Support from Government, Competition Levels, Technological Advancements and Flexibility. Governance (Gov) was the next factor, fourth in number. The items in this were Maintenance of Database of employees, Assessing Job Satisfaction Levels of employees, Management Support to Cognition Process and the Organizational Culture. The last factor was Social & Environmental (SE) with Learning Culture and Customs in it. 56.67% of the variance is explained by these five factors. For further analysis, these five have been taken into account and the factor loadings along with Eigen values are tabulated (see Table 2).

Reliability Analysis

The value of Cronbach's alpha was found to be 0.79 and so the scale can be considered reliable. It since the value of coefficient alpha should be above 0.7 (Nunnally, 1978). Because of the multi-dimensional aspect of the factors involved, the value of alpha was determined overall as well as for each of the sub-factors obtained. The value was found to be between 0.68 and 0.79. Three subscales are found to be of moderate reliability. The inter-item correlations vary across scales. The reliability of subscales is given in the table (see Table 3).

Regression Analysis was conducted to understand the degree of importance of each factor obtained. On one hand, there was the total score of cognition with respect to sustainability and on the other there were the five factors extracted with their average scores which were regressed with each other. The values of each factor's beta coefficient displayed their relative importance. The one with

Table 1. KMO and Bartlett's test results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.750
Bartlett's Test of Sphericity	Approximate Chi-Square	2660.64
	Sig.	.000

Table 2. Component loadings after Varimax rotation with Kaiser normalization for understanding the cognition process of small and medium enterprises

	actor	Subscale/ item	I	II	III
IV					
V	General (Ge)	Encouraging Creativity	.555		
		Knowledge Dissemination	.557		
		Learning Style &Tendency	.792		
		Knowledge Exchange	.760		
		Perceptions	.622		
		Motivation Levels	.644		
	Nature of the Product (NP)	Scope for Innovation		.572	
		Quality & Acceptability		.585	
	Economic-Financial (EF)	Support from Government			.794
		Competition Levels			.636
		Technological Advancements			.649
		Flexibility			.881
	Governance (Gov)	Maintaining Database			
.613		Assessing Job Satisfaction Levels			
.866		Management Support			
.750		Organizational Culture			
.749					
	Social and Environmental (SE)	Linguistic			
	.823	Customs & Learning Culture			
	.577	Eigen value of the factor	3.01	2.27	1.84
1.72	1.36	% variance before rotation	16.72	12.61	10.22
9.56	7.56	% variance explained after rotation	16.48	12.58	10.52
9.49					
7.67					

Table 3. Reliability analysis for understanding the cognition process in sustainability

Subscale					Inter-item Correlations	
	No.	Mean	Variance	Cronbach's Alpha	Lowest	Highest
Ge	06	4.14	0.74	0.76	0.26	0.54
NP	02	4.37	0.62	0.74	0.46	0.46
EF	03	2.87	1.29	0.79	0.28	0.35
Gov	04	3.35	1.12	0.68	0.10	0.53
SE	02	4.03	1.03	0.77	0.09	0.34

the maximum value of the beta coefficient is found to exercise the highest amount of influence on the cognition process of Micro, Small and Medium Enterprises followed by the factor that reports the next higher value of beta coefficient. The one with the lowest value has the least amount of influence. Thus, the relative importance of each factor is obtained. The results are tabulated (see Table 4).

Social and Environmental (SE)

.286

8.224

.000

2

Constant=3.837 (p=0.000)

The results show it is significant as the value of p is less than .05. Therefore, the model of regression where the value of F is 56.09, 59.58 per cent of the variance is accounted for due to these five factors. The regression equation would be:

$CPiS = 3.837 + .244Ge + .127NP + .444EF + .058Gov + .286SE$ (CPiS signifies Role of the Cognition Process in Sustainability of SMEs).

From the regression equation we see that the economic-financial factor containing sub factors of support from government and its friendly policies, existing competition levels in the same type of products and technological advancements in making these products have the maximum role to play in the cognition process of Micro, Small and Medium Enterprises. Amongst these the flexibility to adapt to new situation has the highest degree of contribution to the role in the cognition process.

Hypothesis Testing

In order to understand whether the size of Micro, Small and Medium Enterprises plays a role in their cognition and adaptability to new situation, the Hypothesis H1 was tested using Correlation and the results are shown in the form of a table (see Table 5).

H1: The size of Micro, Small and Medium Enterprises plays a role in their cognition process

H0: The size of Micro, Small and Medium Enterprises has no role to play in their cognition process

Table 4. Results of regression analysis

Independent Variable	R2/ Sig	Beta	t	Sig	Order of Importance
General (Ge)			.638/	.000	.244
		3.656		.006	4
Nature of Product (NP)		.127	7.001	.000	3
Economic-Financial (EF)		.444	12.755	.000	1
Governance (Gov)		.058	.667	.046	5

Table 5. Relationship between size of micro, small and medium enterprises and cognition process

Variable	Pearson Correlation	Asymp. Sig. (2-tailed)p
Organization Size-Cognition Process	.157	.028

Since the value of $p < 0.05$, the null hypothesis is rejected and H1 is accepted. However, the relation between them is quite weak (around 16%) which shows the size of an organization has little role to play in cognition process.

DISCUSSIONS AND CONCLUSION

The following points may be concluded from the data and its interpretation as reported in the sections above:

The cognition process of Micro, Small and Medium Enterprises is a result of a mix of factors, five in number namely General (Ge), Nature of the Product (NP), Economic-Financial (EF), Governance (Gov) and Social & Environmental (SE) containing a total of 19 sub-factors in them. All of these were also a part of in Corporate Sustainability Index (ISE) developed in Brazil (BM & FBOVESPA, 2011, Center for Sustainability Studies, 2012). However, it is reported in the current study that Economic-Financial factor is the most significant in its impact on sustainability of MSMEs in India. This is followed by the Social & Environmental Factor while the nature of the product comes in at third most important. In the current study, as mentioned above, MSMEs manufacturing a variety of products were taken for study. This diversification in product may have led to nature of product ranking higher than general conditions and governance. The original index had not attempted to rank the order of importance of the factors that form the cognition process for organizations. Also, it was not in the context of MSMEs and confined to Brazil as a country. This finding thus extends the existing body of literature by expanding this index to MSMEs, adding another culture to it and ranking all the factors in order of importance.

The five factors can be categorized under two broad headings of external and internal where the former shall have Economic-Financial and Social & Environmental factors. The remaining three namely General, Nature of the Product and Governance fall in the latter category. It can be seen that External Factors together are much more significant in the cognition process with respect to sustainability as compared to Internal Factors. Earlier studies (Belkhodia, 2007; Leodolter, 2017) have listed internal factors as vital but they have not done it in comparison to external variables. Similarly, the studies by Richert (2017), Contandriopoulos et al., (2010), McEwen & Schmidt, (2007) and Deryckere (2017) have all highlighted internal factors only without mentioning the role of external variables. Therefore, the current study agrees with existing literature on the important role of internal variables. However, the role of external factors was found to be much more prominent in the cognition process and these have been ignored by earlier researchers.

The flexibility to acquire new knowledge appears key for sustainability among the factors and variables studied. This reported the highest impact on the cognition process. It has also been reported in the studies of Contandriopoulos et al., (2010) and Bansal (2005). Most sub factors in the current study find support from literature. Fassin et al. (2015) have reported customs and dissemination of knowledge as factors. Leodolter, (2017) has reported the approach of management and its' relationship with organizational structure and technological advancement while Belkhodia et al., (2007) and Richert (2017) have reported individual centric variables as factors. The sub factor of competition surfaces in the research by O'Gorman (2001) and Margolis & Walsh (2003) while the role of managers and leaders appears in the studies of McEwen & Schmidt, (2007) and Deryckere (2017).

The size of an organization is significant in its role in cognition process. However, the role is not as important as the correlation between them was found to be weak. It is probably due to this reason that the organizations that were covered in the current study have been doing well in their business irrespective of whether they were micro, small or medium sized. The size of an organization is listed as a significant variable by Fassin et al. (2015) but the degree of impact on the cognition process and sustainability have not been specified.

UTILITY AND FURTHER SCOPE FOR STUDY

The current study can serve as a starting point for future studies and can be utilized in some ways. Some of these are listed below:

- i) The study confines itself to certain cities in Northern part of India. The findings of the study can be expanded to include other states and with a larger sample size covering a greater number of SMEs and diversified businesses.
- ii) The scale developed can be utilized to understand the cognition process of SMEs that shall help them in their sustainability measures. The scale can be further validated and tested for reliability.
- iii) It shall be useful for owners and the government in designing training programmes and developing other initiatives for MSMEs.
- iv) Since the Indian government is committed to small scale industries, it can help them sustain through continuous upgradation of knowledge and granting impetus to their cognition processes now that the study identifies what all contributes to the same.

COMPETING INTERESTS

The authors of this publication declare there are no competing interests.

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