



# **National Institute of Food Technology Entrepreneurship and Management**

Department of Food Business Management & Entrepreneurship  
Development

**Research Project Presentation**  
**On**

**Identification of Critical Success Factors to Improve the Overall Performance of MSME's -  
A Empirical Study of Food Processing Industries Around Delhi NCR.**

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# 1. Introduction

- ❖ The **Indian MSMEs (Micro small and medium enterprises)** sector contributes about 29% towards the GDP through its national and international trade.
- ❖ At present, India has approximately **6.3 crore MSMEs**.
- ❖ The number of registered **MSMEs** grew 18.5% i.e., from 21.21 lakh (2.1 million) units in 2019 to from 25.13 lakh units in 2020.
- ❖ Among all industries in MSMEs, manufacturing of consumer based food products and beverage industry places third position with 6.94% contribution among other leading industries.
- ❖ Food processing industries shares 32% in Indians food market, with total employment share of 11.6% and 10.4% of total exports.
- ❖ Government support to food processing industries by various initiatives like upgradation of technologies, financial support to current MSMEs, PMFME, one district one product etc., to boost the food processing sector.

Sources: Annual Report 2017-18, Ministry of Micro, Small and Medium Enterprises, Government of India, <https://www.ibef.org/industry/msme>

## 2. Review of Literature

- ✓ Through Literature review, a total of 21 key success variables are identified, which helps to improve the performance and ensures for success of an business and key success variables vary from industry to industry.
- ✓ The concept of success factors was initially developed by D. Ronald Daniel in 1961. Later, it was refined into critical success factors by John F. Rockart between 1979 and 1981 (Leidecker, J. K., & Bruno, A. v. 1984).

S.No	Key Success variables	References
1.	Top Management Commitment	Shaikh et al., 2018; Kaur & Kaur, 2020; Rizal & Kholid, 2017; Kurniawati & Yuliando, 2015
2.	Employees Commitment	Jamaludin et al., 2019; Gupta et al., 2017; (Rizal & Kholid, 2017; Kurniawati & Yuliando, 2015
3.	Employees Training & Education	Kabango Christian, 2015; Rizal & Kholid, 2017; Ahmad et al., 2017; Kurniawati & Yuliando, 2015
4.	Performance Appraisal & Compensation	Shaikh et al., 2018; Kaur & Kaur, 2020; Rizal & Kholid, 2017; Ahmad et al., 2017; Kurniawati & Yuliando, 2015
5.	Relationship with Suppliers	Jamaludin et al., 2019; Gandhi et al., 2021; Anggraeni & Selamat, 2021
6.	Total Quality Management	Gandhi et al., 2021; Anggraeni & Selamat, 2021; Gupta et al., 2017; Management, 2015
7.	Continuous Improvement	Herpacio & Hidalgo, 2018; Chen et al., 2021
8.	Implementation of HACCP/ISO/FSMS standards	Zainal et al., 2018; Management, 2015
9.	Maintaining Quality of Product	Gupta et al., 2017; Kabango Christian, 2015; Chen et al., 2021
10.	Financial Resources Management	Gandhi et al., 2021; Jamaludin et al., 2019; Kabango Christian, 2015; Herpacio & Hidalgo, 2018
11.	Proper Business Plan	Herpacio & Hidalgo, 2018; Gandhi et al., 2021
12.	Marketing Potential	Rizal & Kholid, 2017; Herpacio & Hidalgo, 2018
13.	Customer satisfaction	Chen et al., 2021; Anggraeni & Selamat, 2021
14.	Brand Reputation	Anggraeni & Selamat, 2021; Chen et al., 2021
15.	Company Restructuring	Siahaan et al., 2020
16.	Research & development	Suwannaporn & Speece, 2010; Meenakshi & Sinha, 2019; Davcik et al., 2021; Sadeghi & Biancone, 2017
17.	Adoption of technologies (ERP/NAVISION/SAP)	Zadeh et al., 2018; (Awan et al., 2021; Haberli et al., 2017; Kazmi & Mäntymäki, 2018
18.	Government Support and policies	Evans et al., 2021; Anggraeni & Selamat, 2021; Rizal & Kholid, 2017; Mahajan, 2019
19.	Legal and Regulatory Framework	Rizal & Kholid, 2017; Mahajan, 2019
20.	Social Responsibility	Sharma et al., 2019; Sellitto et al., 2018
21.	Sustainable Practices	Long et al., 2018; Gaitán-Cremaschi et al., 2017; Sellitto et al., 2018

# 3. Research Methodology

- **Objectives of Study:**

1. Identification of the key success variables through literature review & these variables are analyzed by an empirical survey of particular area food processing industries.
2. To study the demographic profiles of responses from various food processing industries.
3. To prioritize the key success variables which help improve an MSME's performance and success.
4. Through quantitative data, Critical success factors were evaluated using Exploratory factor analysis to find whether the identified key success variables represent the critical success factor & correlation between variables.

## ❑ Sampling Method:

- The data used for this study was gathered through an online questionnaire survey by using google forms with an ordinal scale in which respondents need to choose one out of the five options, which are mentioned in 1-5 Likert scale (5 to strongly agree, 4 to agree, 3 for neutral/doubtful, 2 for disagree, 1 for strongly disagree).
- The questionnaire data is circulated to working professionals & industry experts who are currently working in & around the Delhi-NCR region food processing industries.

## ❑ Data Analysis:

- Out of 300 sample size, a total of 105 responses were used for this study having a response rate of 21% .

The analysis of data is carried out in three stages:

- ✓ In the first stage, the demographic profiles of the responses are carried out.
- ✓ In the second stage, the data is analysed to check the reliability of the data by using Cronbach's reliability test & descriptive statistics to prioritize and rank key success variables.
- ✓ In the third stage, the data is analysed using Exploratory Factor Analysis to find the credibility and validity of the success factors.

# 4. Findings

- **Demographic study of responses**

- i. Among 105 responses, **the male contributes 70%**, the female contributes 28% & 2% prefer not to say.
- ii. Most of the responses belong to **quality 46.67%**, followed by operations 16.19%, production 13.33%, R & D 9.52%, sales & marketing 6.67% at least contribution is belonging to supply chain 2.86%.
- iii. The responses from various types of food industries, including **Dairy & RTE/RTS industries, contribute 21% each**, followed by beverages (17%), Bakery & confectionary (16%), fruits & vegetables processing (14%), others (11%).
- iv. Among total respondents, **30% belong to Jr. executive position**, followed by executive-level 28%, **16% are from senior executive level**, **13% manger level** & 2% each by Plant head/CEO level.
- v. The responses are working in companies where **annual company turnover is > 10 crores is 51%**, followed by 28% of companies having 5-10 crores & <5 crores having 21% turnover. This represents all the responses belonging to MSMEs.
- vi. Most of the food processing belongs to **private limited companies, which account for 74% contribution**, followed by the public, which accounts for 13%, followed by 4 % contribution each by the partnership, sole proprietorship & 5% others.
- vii. Most of the responses working in Delhi region which contributes 25%, followed by Uttar Pradesh (24%), Gurugram (13%), Haryana (9%), Sonipat (7%), Noida (7%), others (15%).

# 4. Findings

- Cronbach's reliability study

The data is analysed using IBM SPSS software, the data is acceptable if Cronbach's alpha is  $> 0.7$ , representing excellent consistency within the data. Anggraeni, S., & Selamat, F. (2021).

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.973	.973	21

- Prioritization of Key Success variables



Key success variables		Mean	Rank
SF4	Customer satisfaction	4.3619	1
OPF5	Maintaining the quality of the product	4.3333	2
SF3	<b>Marketing potential</b>	4.2476	<b>3</b>
OPF3	<b>Continuous improvement</b>	4.2476	<b>3</b>
SF2	Proper Business plan	4.2190	4
ORF3	Employees training & education	4.1905	5
OPF4	Implementation of HACCP/ ISO/FSMS standards	4.1810	6
OPF2	Total quality management	4.1714	7
SF5	Brand reputation	4.1524	8
ORF1	Top management commitment	4.1429	9
EF2	Legal polices	4.1238	10
ORF2	Employees commitment	4.1143	11
TF1	Research & development	4.0857	12
SF1	Financial resources management	4.0762	13
ORF4	Performance appraisal & compensation	4.0381	14
OPF1	Relationship with suppliers	3.9619	15
TF2	<b>Adoption of technologies (ERP)</b>	3.9333	<b>16</b>
EF4	<b>Sustainable practices</b>	3.9333	<b>16</b>
EF3	Social practices	3.8762	17
EF1	Government polices	3.8381	18
SF6	Company restructuring	3.7524	19



# 4. Findings

## Exploratory Factor Analysis

- To run an EFA and to get valid results, the number of participants & variables should be in the ratio of 3:1 or 5:1 or more. In this study, a total of 21 variables are present and 105 responses are utilized (Marley W. Watkins 2018).
- The below table shows the KMO as 0.932, which is acceptable & Bartlett's test of sphericity significant as .000, which indicates the data gathered is ideal for running EFA.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.932
Bartlett's Test of Sphericity	Approx. Chi-Square	1889.523
	df	153
	Sig.	.000

- The communalities for the data collected & analysed, which shows all variables having communalities  $> 0.50$ , which is good to measure factor analysis.
- Factor analysis is carried out through principal component analysis (PCA), which analyses the entire correlation matrix and is intended to reduce data while preserving as much information from the original data set as possible (Norris & Lecavalier, 2010).
- A total of 2 factors are explained with a cumulative variance of 71%. However, the initial PCA extraction, all variables are loaded into one factor, which is not appropriate, so factor rotation is done by using varimax, which is the most commonly used orthogonal rotation, to get a rotated component matrix.

## 4. Findings

## Exploratory Factor Analysis

- In those results, the variables SF3-marketing potential, SF4-customer support & SF5 –Brand reputation are removed due to un even loaded on a factors. After removing the three variables, the data is analyzed again, which explains a cumulative covariance of 72%, which is appropriate for the study.

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.798	65.544	65.544	11.798	65.544	65.544	7.408	41.158	41.158
2	1.192	6.622	72.165	1.192	6.622	72.165	5.581	31.008	72.165
3	.819	4.552	76.718						
4	.585	3.250	79.968						
5	.518	2.878	82.847						
6	.504	2.800	85.647						
7	.401	2.229	87.876						
8	.357	1.983	89.859						
9	.313	1.739	91.597						
10	.284	1.576	93.173						
11	.249	1.386	94.559						
12	.226	1.255	95.813						
13	.185	1.027	96.840						
14	.179	.992	97.832						
15	.123	.681	98.513						
16	.097	.539	99.052						
17	.091	.504	99.556						
18	.080	.444	100.000						

Extraction Method: Principal Component Analysis.

# 4. Findings

## Exploratory Factor Analysis

- Out of 21 variables used for the study, 18 are supporting and classified into two factors with factor loadings  $> 0.50$  using PCA & varimax orthogonal rotation.
- A total of 11 variables are loaded into the same factor, which is named as internal business factors & 7 variables are loaded into another factor which is named as external business factors.
- Here, the variables financial resources management, Research & Development, & legal and regulatory framework are loaded into both factors; based on the highest factor loading value, the grouping of variables is done.
- The variables which having higher loading factors represents that variables are strong correlation with the respective factor.

Rotated Component Matrix <sup>a</sup>			
		Component	
		1. Internal factors (IF)	2. External factors (EF)
Variables			
ORF1	Top Management Commitment	<b>.802</b>	
ORF2	Employees Commitment	.753	
ORF3	Employees Training & Education	<b>.842</b>	
ORF4	Performance Appraisal & Compensation	<b>.791</b>	
OPF1	Relationship with suppliers	.699	
OPF2	Total quality management	.742	
OPF3	Continuous Improvement	.762	
OPF4	Implementation of HACCP /ISO/FSMS standards	.713	
OPF5	Maintaining Quality of Product	.799	
SF1	Financial Resources Management	<b>.658</b>	<b>.544</b>
SF2	Proper Business Plan	.734	
SF6	Company Restructuring		.740
TF1	Research & Development	<b>.523</b>	<b>.626</b>
TF2	Adoption of Technologies (ERP/SAP/Navision)		.719
EF1	Government support & Policies		.716
EF2	Legal and Regulatory Framework	<b>.509</b>	<b>.668</b>
EF3	Social Responsibility		<b>.853</b>
EF4	Sustainable Practices		<b>.808</b>
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 3 iterations.			

# 5. Conclusions

- In demographic factors, the majority of responses belong to the quality department and are working in dairy & RTE/RTS-based food industries which makes the study confined to consumer-based food industries.
- Most of the responses believe that customer satisfaction is most important, followed by maintaining the quality of products as are a priority for the success of the organization. Company restructuring represents the least priority among all key success variables.
- Among all the variables, Employee training & education shows the highest factor loading of 0.842, followed by top management commitment (0.802), Maintaining quality of product (0.799) & performance appraisal & compensation (0.791) which represents a good correlation coefficient between variable & factor.
- Most of the respondents (71%) believe that sales, profit of the business, overall efficiency & customer satisfaction are very important to measure the success of an organization.
- Few responses also gave suggestions on things to be required to improve the performance of organization such as proper communication with customers & branding of the product is important, conducting training & sessions for employee's skill improvements, few sessions on work-life balance, Physical & mental health being, work satisfaction of employees in the organization is also contributes to the success of an organization.

# 6. Limitations & Further studies

- In this study, the data gathered from a particular region, and the opinion of responses may vary from region to region.
- More variables can be identified & added, which helps to explore more about the factors contributing the success of an organization.
- Here, the EFA is conducted to identify the factors; further, the Confirmatory factor analysis can also be done, followed by structural equational modelling, in which the identified variables are divided into factors.
- According to departmental wise/ more specific to a particular area which becomes factors called as independent variables. These factors, and independent variables, are further utilized to identify their influence/impact on certain dependent variables like success, growth, or performance of an organization.
- This study can also be done as a case study approach for taking example a particular organization & identifying variables that help to improve the performance of the current organizations by taking opinions from employees. These industrial experts helps to figure out the exact problems & solutions which need to improve for growth of an organization.
- Further studies can also be done for other region-specific responses by considering the variables from a particular departments i.e., for example, the factors that help to improve the performance of quality/operations/supply chain, etc., which specify the variables contributing to particular departmental wise.

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# THANK YOU

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