

## MARKETING INFORMATION SYSTEM (MKIS): OUTLINE FOR SMALL AND MEDIUM ENTERPRISES (SMES) IN PUNJAB

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### ABSTRACT

Marketing information system (MkIS) has traditionally been proposed to provide marketing managers a thorough process of intelligence gathering. In India, the potential of the Small Medium Enterprises (SMEs) is to garner revenue and identify their keenness to utilize (MkIS). The main objective of the study is to develop the framework of MkIS for SMEs in Punjab. The study uses a survey analysis for 140 SMEs which include 124 small and 16 medium enterprises respectively of manufacturing sector of Punjab in India. The study has been conducted for manufacturing SMEs viz. cutting tools, sports goods and bicycle components. The study attempts to find the critical factors of MkIS for enhancing the performance of manufacturing SMEs viz. design characteristics of MkIS, capabilities of MkIS, primary characteristics of MkIS and MkIS sophistication. The ANOVA results highlight that there is no significant difference between the two types of the enterprises viz. small and medium regarding the important predictors of the MkIS and it also justifies that all the factors are considered important by both.

*Keywords: Marketing Information System, Small Medium Enterprises, Punjab.*

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## 1. INTRODUCTION

MkIS is intended to bring together disparate items of data into a coherent body of information. Moreover, MkIS is more than a system of data collection or a set of information technologies. According to Kotler (2009), “A marketing information system consists of people, equipment and procedures to gather, sort, analyze, evaluate, and distribute needed, timely and accurate information to marketing decision makers”. To attain a place in the competitive market, companies have to not only reduced the cost price of their product, but a consistent effort has to be placed on adopting new technologies and enhancing quality standards. Past experience shows that Indian firms took decades to be able to catch up with global productivity levels. Time has come to focus on technological strategies with a focus on MkIS. MkIS are mostly applied by large and dominant firms, but it is right time now for SMEs to focus on the MkIS and initiate steps to enhance information technology culture in SMEs of Punjab Manufacturing. Punjab has been ranked as one of the growing states of India. The present study has been taken against the above backdrop for developing an outline for MkIS for manufacturing SMEs of Punjab in India.

## 2. LITERATURE REVIEW

Several studies have been done looking at different perspectives, viz. success factors, issues, and requirements for MkIS. As per (Girsh & Prosanto, 2001) earlier literature on Punjab economy highlights not only high growth potential of the start, but even exports are potentially high in Punjab due to the SMEs. Ludhiana in the state of Punjab produces 95% of India’s woolen hosiery. 85% of sewing machine parts, 60% of bicycles and its parts and accounts for over half of Punjab’s exports. According to (Garg & Jain, 2008) results of a survey of small scale manufacturing units located in and around Jalandhar (Punjab), depicts that small scale industry is witnessing a very difficult time in global market after liberalization and globalization of economy, as a result competition amongst small scale manufacturers is becoming stiff. As per (Singh & Jain, 2006) in the present scenario, there is a need of change felt to adapt cost cutting, technological up-gradation, lean structure and supportive systems to add to the competitiveness in the context of manufacturing small scale industry of Punjab. (Gilmore et al., 2001) says that the hindrances of MkIS in a developing country are due to lack of access to computers and the internet, and limited electronic payment capability. (Choueke & Armstrong, 1998) concludes that the decision to embark on the journey and the process leading to embarkation provide the

organisation and its people with an increasingly effective compass through which the company is able to navigate itself through the hostile uncertainty of the business environment. Thus in view of the above, there is a need to undertake a study to suggest an MkIS for SMEs for Indian environment.

On the basis of literature the following four critical factors have been identified. These are:

#### 2.1 Design characteristics of MkIS:

As per (Piercy & Evans, 1983), (Little, 1979) and (Milis, 2008) design characteristics deals with information. Design characteristics cover the following:

Broad scope information (DC1), Timely information (DC2), Accurate information (DC3), Current information (DC4) and Aggregated information (DC5)

#### 2.2 Capabilities of MkIS:

According to (Knuckles, 1987) and (Fleisher et al., 2008), the broad capabilities of MkIS range from providing data to decision support system for sophisticated analysis of data. These capabilities are highlighted as:

It simply provides data on which decisions are made (CA1), It has the capability to undertake simple analysis of the data (CA2), It provides sophisticated analysis of data (CA3) and It provides sophisticated analysis of data and has the ability to make recommendations, if so required, as an aid to decision making (CA4)

#### 2.3 Primary characteristics of MkIS:

According to (Bhagwat & Sharma, 2007) Primary characteristics of MkIS are considered as a major tool to help companies provide a competitive edge in the era of globalization. As per (Martin, 2004) primary characteristic covers the basic tools for MkIS and highlighted as:

Windows 98 & Windows XP as Operating system (PC1), E-Mails & Search Engines as Internet (PC2), Word, Excel & PowerPoint as Applications (PC3), Timely information of marketing needs (PC4), Stores marketing information (PC5) and Processed information maintained in the data-base (PC6)

#### 2.4 MkIS sophistication:

As per (Van Nievelt, 1984) and (Murray et al., 2004) sophistication covers the marketing needs for meeting customer requirements and also for formulating of the strategic plan for effective marketing decision. The MkIS sophistication covered in the study are:

Strategic perspective (SO1), Meeting customer needs (SO2), Threat (SO3), Strategic planning (SO4), IT budget (SO5) and Marketing decision (SO6)

### 3. RESEARCH METHODOLOGY

The present study has been based on a survey analysis conducted in the state of Punjab, one of the growing states of Indian economy. Data has been collected through a self-structured questionnaire from 140 manufacturing industries which include 124 small and 16 medium enterprises respectively of Punjab. Regarding the nature of industry, there are 30 firms producing cutting tools, 50 are producing sports goods and 60 are producing bicycle components. Categories of firms within these sectors have been depicted in Fig. 1. Size-wise sample has 124 small enterprises and 16 medium enterprises as depicted in Fig. 2.

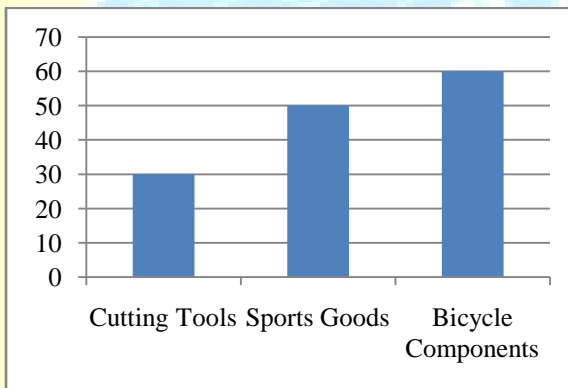


Figure 1: Category of Industry

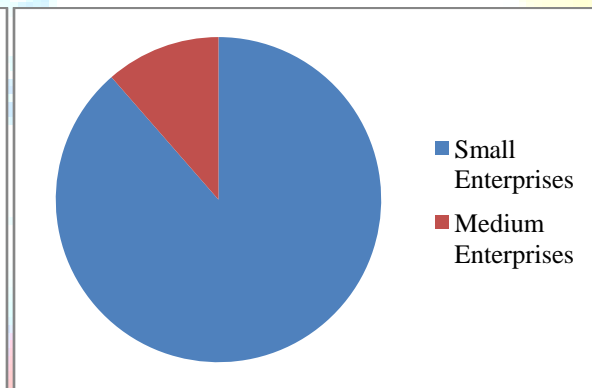


Figure 2: Type of Enterprises

#### Objectives:

1. To identify the critical factors of MkIS for SMEs in Punjab.
2. To develop a framework for MkIS for SMEs in Punjab.

### 4. RESULTS AND DISCUSSIONS

After undertaking descriptive analysis, the four important critical factors of MkIS are:

Design characteristics of MkIS, Capabilities of MkIS, Primary characteristics of MkIS and MkIS sophistication

#### 4.1 Design characteristics of MkIS

Type of Firm		DC1	DC2	DC3	DC4	DC5
Small Enterprise	Mean	3.12	3.38	3.38	3.23	3.12
	N	124	124	124	124	124
	SD	1.16	1.16	1.01	1.09	1.15
Medium Enterprise	Mean	3.06	3.06	3.43	3.31	3.56
	N	16	16	16	16	16
	SD	1.06	1.28	1.09	1.30	1.09
Total	Mean	3.11	3.35	3.39	3.24	3.17
	N	140	140	140	140	140
	SD	1.15	1.18	1.02	1.11	1.15

As per Table 1, it is evident that both the enterprises, i.e., small and medium have given the high priorities to Accurate Information and Timely Information.

		Sum of Squares	df	Mean Square	F	Sig.
DC1	Between Groups	.04	1	.04	.03	.849
	Within Groups	184.12	138	1.33		
	Total	184.17	139			
DC2	Between Groups	1.49	1	1.49	1.07	.302
	Within Groups	192.35	138	1.39		
	Total	193.85	139			
DC3	Between Groups	.03	1	.03	.03	.854
	Within Groups	145.35	138	1.05		
	Total	145.39	139			
DC4	Between Groups	.08	1	.08	.07	.792
	Within Groups	173.65	138	1.25		
	Total	173.74	139			
DC5	Between Groups	2.76	1	2.76	2.10	.149
	Within Groups	181.12	138	1.31		
	Total	183.88	139			

On the basis of ANOVA results through Table 2, it can be inferred that there is no significant difference between small and medium enterprises regarding the design characteristics of MkIS.

## 4. 2 Capabilities of MkIS

Type of Firm		CA1	CA2	CA3	CA4
Small Enterprise	Mean	3.32	3.43	3.58	3.66
	N	124	124	124	124
	SD	1.07	1.12	.84	.91
Medium Enterprise	Mean	3.06	3.43	3.62	4.31
	N	16	16	16	16
	SD	1.12	.72	1.20	.87
Total	Mean	3.29	3.43	3.59	3.73
	N	140	140	140	140
	SD	1.08	1.08	.88	.93

As per Table 3 overall results indicate that from firm wise analysis, it is evident that both the enterprises, i.e., small and medium have given high priorities to sophisticated analysis of data which has an ability to make recommendations as an aid to decision making and for data on which decisions are made.

		Sum of Squares	df	Mean Square	F	Sig.
CA1	Between Groups	.95	1	.95	.81	.368
	Within Groups	162.03	138	1.17		
	Total	162.99	139			
CA2	Between Groups	.00	1	.00	.00	.994
	Within Groups	164.42	138	1.19		
	Total	164.42	139			
CA3	Between Groups	.01	1	.01	.02	.878
	Within Groups	109.77	138	.79		
	Total	109.79	139			
CA4	Between Groups	6.01	1	6.01	7.19	.008
	Within Groups	115.21	138	.83		
	Total	121.22	139			

On the basis of ANOVA results through Table 4, it can be inferred that there is no significant difference between small and medium enterprises regarding the capabilities of MkIS except the last component which is significant for sophisticated analysis of data which has the ability to make recommendations, if so required, as an aid to decision making.

### 4.3 Primary characteristics of MkIS

As per Table 5, MS Windows 98 as an operating system has highest usage, Email as an Internet has highest usage and MS Word as an application has highest usage respectively from both enterprises, i.e., small and medium. Also processed information maintained in the database has a good preference amongst the both enterprises.

Type of Firm		PC1		PC2		PC3			PC4	PC5	PC6
		MS Windows 98	MS Windows XP	E-Mail	Search Engines	MS Word	MS Excel	MS Power Point			
Small Enterprises	Mean	3.50	2.75	3.56	2.54	3.25	2.96	2.54	3.12	3.20	3.39
	N	124	124	124	124	124	124	124	124	124	124
	SD	.61	.78	.66	.70	.70	.70	.70	1.35	1.11	.84
Medium Enterprises	Mean	3.62	3.06	3.43	2.50	3.12	2.81	2.56	2.68	2.75	3.50
	N	16	16	16	16	16	16	16	16	16	16
	SD	.61	.77	.62	.63	.61	.65	.62	1.49	1.48	.96
Total	Mean	3.52	2.79	3.55	2.54	3.24	2.95	2.55	3.07	3.15	3.40
	N	140	140	140	140	140	140	140	140	140	140
	SD	.61	.79	.66	.69	.69	.70	.69	1.37	1.16	.85

		Sum of Squares	df	Mean Square	F	Sig.
PC1	MS Windows 98	Between Groups	.19	1	.19	.50
		Within Groups	52.74	138	.38	
		Total	52.93	139		
	MS Windows XP	Between Groups	1.31	1	1.31	2.11
		Within Groups	85.67	138	.62	
		Total	86.99	139		
PC2	E-Mail	Between Groups	.22	1	.22	.52
		Within Groups	60.42	138	.43	
		Total	60.65	139		
	Search Engines	Between Groups	.03	1	.03	.06
		Within Groups	66.71	138	.48	
		Total	66.74	139		
PC3	MS Word	Between Groups	.25	1	.25	.51
		Within Groups	67.49	138	.48	
		Total	67.74	139		
	MS Excel	Between Groups	.34	1	.34	.69
		Within Groups	68.30	138	.49	
		Total	68.64	139		

	MS Power Point	Total	68.65	139			
		Between Groups	.00	1	.00	.00	.939
		Within Groups	66.64	138	.48		
		Total	66.65	139			
PC4		Between Groups	2.66	1	2.66	1.41	.237
		Within Groups	260.62	138	1.88		
		Total	263.28	139			
PC5		Between Groups	2.89	1	2.89	2.15	.144
		Within Groups	184.96	138	1.34		
		Total	187.85	139			
PC6		Between Groups	.15	1	.15	.21	.646
		Within Groups	101.63	138	.73		
		Total	101.79	139			

On the basis of ANOVA results through Table 6, it can be inferred that there is no significant difference between small and medium enterprises regarding the primary characteristics of MkIS.

#### 4.4 MkIS Sophistication

Type of Firm		SO1	SO2	SO3	SO4	SO5	SO6
Small Enterprises	Mean	3.01	3.58	3.36	3.22	3.13	3.11
	N	124	124	124	124	124	124
	SD	1.06	.85	1.06	.96	1.07	1.05
Medium Enterprises	Mean	2.87	3.56	3.62	3.31	3.18	3.18
	N	16	16	16	16	16	16
	SD	.80	.72	1.08	.87	1.37	.91
Total	Mean	3.00	3.58	3.39	3.23	3.14	3.12
	N	140	140	140	140	140	140
	SD	1.03	.83	1.06	.94	1.10	1.03

As per Table 7, from the both enterprises, i.e., small and medium are having a little higher mean but the meeting customer needs has the highest priority.

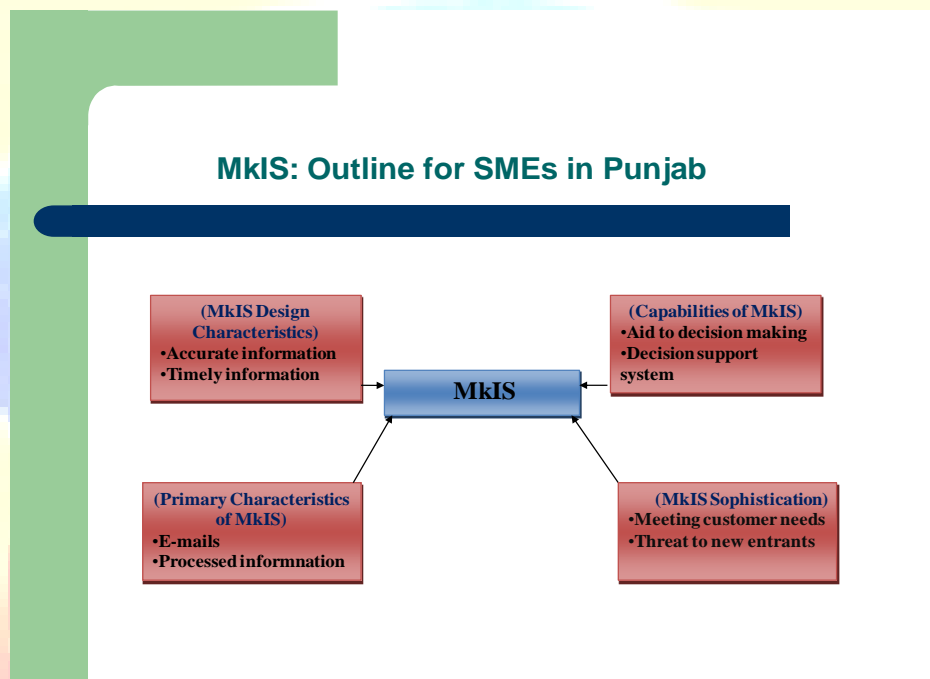
		Sum of Squares	Df	Mean Square	F	Sig.
SO1	Between Groups	.28	1	.28	.26	.611
	Within Groups	149.71	138	1.08		
	Total	150.00	139			
SO2	Between Groups	.01	1	.01	.01	.907
	Within Groups	97.96	138	.71		
	Total	97.97	139			
SO3	Between Groups	.97	1	.97	.85	.356
	Within Groups	156.41	138	1.13		
	Total	157.39	139			
SO4	Between Groups	.10	1	.10	.11	.732
	Within Groups	125.11	138	.90		
	Total	125.22	139			



SO5	Between Groups	.03	1	.03	.02	.865
	Within Groups	171.10	138	1.24		
	Total	171.14	139			
SO6	Between Groups	.07	1	.07	.07	.787
	Within Groups	148.85	138	1.07		
	Total	148.93	139			

On the basis of ANOVA results through Table 8, it can be inferred that there is no significant difference between small and medium enterprises regarding the MkIS sophistication.

## 5. CONCLUDING REMARKS



**Figure 3: MkIS: Outline for SMEs in Punjab**

As per Figure 3, the top two priorities of each factor for both the enterprises, i.e., small and medium have been taken for the development of an outline for MkIS for SMEs in Punjab. Based upon the ANOVA results, it is inferred that there is no significant difference between small and medium enterprises regarding the importance of these. However it justifies that all the factors of MkIS are considered important by both the enterprises.

Efforts have to be made by SMEs if it wants to survive in the present day world of competition. To achieve higher standards of efficiency and performance, it is suggested that SMEs should introduce new innovative concepts in their system.

Further, though activities like management training programs, computerization, maintain of database, improvement in functional evidence etc. are being provided by SMEs , it is suggested that SMEs sector should also take a fresh look at these aspects and introduce necessary changes in them.

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