

A Study on Factors Influencing SMEs to Digitalise their Business

Dr. Raju Kumar Mahto¹, Shabana Bano², Ashutosh Kumar³

¹Assistant Professor, Department of Business Management, Usha Martin University, Ranchi

²Assistant Professor, Department of Commerce, Usha Martin University, Ranchi

³Research Scholar, Department of Business Management, Radha Govind University, Ramgarh

ABSTRACT

This descriptive research tries to identify the factors which might have cast a bearing on SMEs to digitalise their business by administering a structured questionnaire to 406 entrepreneurs managing SMEs in Chennai, selected using Convenience Sampling. Results of the study reveal that availability of skilled work force is the important factor casting significant bearing on SMEs deciding to digitalise their business followed by Demand of customers/suppliers, competition, minimising cost and accomplishing price competitiveness. Gaining price competitiveness, readiness of customers, cost of adopting new technologies and equipment, cost minimisation and infrastructure facilities have cast a significant bearing on business digitalisation endeavours of SMEs managed by entrepreneurs without much education and without entrepreneurship backing while competition has driven the business digitalisation endeavours of SMEs managed by entrepreneurs without any entrepreneurship backing. Demand of customers/vendors have driven SMEs managed by older entrepreneurs and entrepreneurs without entrepreneurship backing towards digitalisation of business while gaining price competitiveness has driven SMEs managed by younger entrepreneurs towards digitalisation.

infrastructural facilities, cost of adopting new technologies and equipment, readiness of customers to adopt online presence, demand of customers/suppliers, cost minimisation, gaining price competitiveness and availability of skilled work force have driven SMEs engaged in manufacturing, retailing and services to digitalise their business. Readiness of customers to adopt online presence has driven large sized SMEs in terms of staff strength to digitalise their business while small sized SMEs have been driven by infrastructural facilities and competition. SMEs with more IT staff were influenced by competition, cost of adopting new technologies and equipment, readiness of customers to adopt online presence, demand of customers/suppliers and gaining price competitiveness to digitalise their business.

Keywords: Small and Micro Enterprises (SMEs), Digitalisation, factors influencing, Profile of entrepreneurs, Profile of SMEs.

Introduction

Technology is the biggest boon derived by the globe from industrial revolution. Technology revolution is taking place in all corners of life and small and medium scale enterprises are no exception to this. Technology adoption by SMEs leads to augmentation of profitability, productivity, efficacy, competitiveness and market penetration (Azam, 2006).

The highly beneficial adoption of digitalisation in the mode of doing business by the SMEs is likely to be influenced by many factors and this study has made an attempt to take a look at such factors.

Literature Review

Many authors have identified different factors driving firms to digitalise their business. The factors so identified by different authors has been highlighted in table 1.

Table 1: Past Literature about Factors Influencing Firms to Digitalise their Business

Authors	Influencing Factors
claycomb et al. (2005)	<ol style="list-style-type: none"> 1. Compatibility with the prevalent structure. 2. Accommodating standards with clients. 3. Lateral assimilation in the organisation. 4. Technocratic Specialisation. 5. Decentralised decision-making authority regarding digital modes.
Davis (1989)	<ol style="list-style-type: none"> 1. Exterior variables. 2. Professed simplicity of utilising. 3. Professed utility. 4. Outlook towards usage. 5. Attention to usage. 6. Actual usage.
Ta-Tao et al. (2009)	<ol style="list-style-type: none"> 1. Availability of knowhow about the process of digitalising. 2. Probable benefits which can be reaped from digitalisation. 3. Whether such benefits can contribute to the accomplishment of spelt out business goals
Davis (1989)	<ol style="list-style-type: none"> 1. Professed simplicity of technology usage. 2. Professed utility gained by such technology utilisation.
Bertschek and fryges (2002)	<ol style="list-style-type: none"> 1. Size of the organisation. 2. Proportion constitution of export to total turnover. 3. Availability of proficient personnel. 4. Presence of digitalised firms in the industry.
Esichaikul and chavananon (2001)	<ol style="list-style-type: none"> 1. Policy factors. 2. Organization factors. 3. Human Resource Management factors. 4. Business factors. 5. Customer Relations Management factors. 6. Technology factors. 7. Security factors. 8. Environment factors.
Subramaniam and shaw (2002)	<ol style="list-style-type: none"> 1. Process characteristics. 2. Organization of business units. 3. Extended enterprise.
Mashari (2002)	<ol style="list-style-type: none"> 1. Security issues.

	<ol style="list-style-type: none"> 2. Organisational issues. 3. Modifications to be effected in prevailing business mechanism. 4. Acceptance of digitalised mode of doing business by staff of the firm. 5. Capability of customers to utilise digital technology.
Vlachopoulou and manthou (2003)	<ol style="list-style-type: none"> 1. Proficiency of firms to assume novel strategies. 2. Effective management of infrastructure, personnel and information. 3. Cooperative and consorted effort on the part of all stakeholders involved in the process of digitalisation. 4. Suitably integrating the interior and exterior tasks of the partners. 5. Establishing good relations with all stakeholders.
Yan and paradi (1999)	<ol style="list-style-type: none"> 1. E-commerce strategy. 2. Innovation. 3. Risk tolerance. 4. Communication network. 5. Volume of firm's assets.
Liu and arnett (2000)	<ol style="list-style-type: none"> 1. Information & service quality. 2. System usage. 3. Playfulness. 4. System design quality.
Viehland (2000)	<ol style="list-style-type: none"> 1. Creation of consumer-oriented approach. 2. Acceptance of outsourcing for boosting efficacy. 3. Start performing afresh presuming as a beginner to business. 4. Make the most of information management in gaining comparative advantage by differentiating firm's product from those of rivals. 5. Become an integral player in the digitalised scenario. 6. Executive leadership.
Falk and hogstrom (2001)	<ol style="list-style-type: none"> 1. Utilisation of digitalised business for logistics. 2. Provision for simple and secured payment system. 3. Prompt delivery of products. 4. Delivering products as per the promised specifications. 5. Focus on core business and avoid focusing on multi-tasking. 6. Holding all players in value chain as equally accountable for product delivery. 7. Augment accountability on players responsible for logistics. 8. Bind all players in the value chain as one entity by utilising chances of exchanging information through effective communication. 9. Declining cost of operations to enable digitalised firms engage in healthy competition with conventional firms. 10. Win over allegiance of customers. 11. Encourage personalised relationships with customers. 12. Build stronger customer relations. 13. All players in the value chain process should possess utmost proficiency.
Thompson et al. (2001)	<ol style="list-style-type: none"> 1. Top management factor.

	<ol style="list-style-type: none"> 2. organizational change factor. 3. Strategy-related factor. 4. Project management factors. 5. Valuation factor. 6. Collaboration factors. 7. Interior it environmental factor. 8. Exterior it environmental factor. 9. Exterior business environmental factor.
Dubelaar et al. (2005)	<ol style="list-style-type: none"> 1. Strong customer attention. 2. Well spelt out performance measures. 3. Strong association among value proposition and processes. 4. Incremental development process.
Li and li (2005)	<ol style="list-style-type: none"> 1. Functional factors. 2. Strategic factors. 3. Technical factors.
Kamal (2006)	<ol style="list-style-type: none"> 1. Professed technology. 2. Organisational factors. 3. Exterior factors. 4. Collaboration factors.
Amoroso and vannoy (2006)	<ol style="list-style-type: none"> 1. Outsourcing to enable focus on core proficiencies. 2. Organizational culture to accomodate digitalisation. 3. Willingness and eagerness of firms to digitalise their business.
Angeles and nath (2007)	<ol style="list-style-type: none"> 1. Vendor and contract management. 2. Client behaviour. 3. E-procurement mechanism. 4. Information sharing. 5. E-procurement infrastructure. 6. Implementation challenges. 7. Effectively integrating digitalisation with other systems. 8. Standardization issues. 9. Maturity of electronic procurement market services. 10. Customer resistance. 11. Maverick buying.
Jennex et al. (2004)	<ol style="list-style-type: none"> 1. Client interface factors. 2. People factors. 3. Technical infrastructure factors. 4. Business infrastructure factors. 5. Regulatory environment factors. 6. Knowledge of employees. 7. Technical expertise of employees. 8. Trusting relationship between customers and vendor. 9. Knowledgeable client contacts. 10. Establishing contact between vendor and client through known language

	<p>for the client.</p> <p>11. Effective means for contacting client.</p>
Chong (2008)	<ol style="list-style-type: none"> 1. Observability. 2. Communication channel. 3. Pressure from the end-users. 4. Pressure from the vendors. 5. Professed governmental support. 6. Firm size. 7. Professed readiness. 8. Observability.
Cullen and Taylor (2009)	<ol style="list-style-type: none"> 1. System quality. 2. Information quality. 3. trust. 4. World wide Web - assurance and empathy. 5. Management and usage.
turban et al. (2002)	<ol style="list-style-type: none"> 1. User-friendly Web Interface. 2. Delivering precise and high-earned goods or services. 3. Support of top management. 4. Technical infrastructure. 5. Trust between customers and vendors. 6. Security and control over the digitalised mechanism. 7. Customer acceptance. 8. Mass customization. 9. Competition and market conditions. 10. Optimising scope of business. 11. Creation of new partnerships and alliance arrangements.
sung (2006)	<ol style="list-style-type: none"> 1. Customer relationship. 2. Privacy of information. 3. Low operational cost. 4. Ease of use. 5. E-commerce strategy. 6. Technical e-commerce proficiency. 7. Stability of systems. 8. Security of systems. 9. Availability of abundant information. 10. Availability of wide range of goods and services. 11. Speed of systems. 12. Secured payment process mechanism. 13. Prompt delivery of goods. 14. Lesser price of goods. 15. Effective evaluation of business done through digital mode.
Madeja and Schoder (2003)	<ol style="list-style-type: none"> 1. Interactivity. 2. Immediacy.

	<ol style="list-style-type: none"> 3. Media richness and variety. 4. Availability of simple usage mechanism.
chen et al. (2004)	<ol style="list-style-type: none"> 1. Product offerings. 2. Usability of storefront. 3. Professed service quality. 4. Professed trust.
Jeffcoate et al. (2002)	<ol style="list-style-type: none"> 1. Convenience. 2. Control. 3. Interaction. 4. Community. 5. Price sensitivity. 6. Brand image. 7. Commitment. 8. Partnership. 9. Process improvement. 10. Integrating the firms operations with digital mechanism.
Duffy and dale (2002)	<ol style="list-style-type: none"> 1. Business processes. 2. 24/7 operation. 3. E-integration.

The above table provides an exhaustive list of factors determining the success of business digitalisation endeavours of business firms and the researcher decided to use this exhaustive list and take a few of these factors and check the influence of such factors on successful implementation of business digitalisation of SMEs in Chennai.

Objectives of the Study

- To take a look at the characteristics of small and micro enterprises which have digitalised their business and the demographic characteristics of entrepreneurs managing these SMEs;
- To assess the factors which would have driven the SMEs to digitalise their business;
- To check for prevalence of significant relationship between the factors which would have driven the SMEs to digitalise their business and their characteristics and profile of entrepreneurs managing them.

Table 2: Methodology

Nature of Research	Descriptive
Nature of Data	Primary
Research Instrument	Structured questionnaire
Sample Frame	Chennai
Study Population	Entrepreneurs managing SMEs in Chennai
Sample Size	406
Sampling Technique	Convenience Sampling
Statistical Software used	SPSS

Statistical Tools Used	Percentage, Chi-Square Analysis and Correspondence Analysis
------------------------	---

Data Analysis and Representation

Table 3: Demographic Characteristics of Entrepreneurs Managing the SMEs

Profile		Percentage
Gender	Male	67.2
	Females	32.8
Age in years	< 30	55.2
	30-50	37.4
	> 50	7.4
Educational Qualifications	No formal education	1.8
	Diploma	7.6
	School level	37.9
	Degree	37.4
	Post-graduation	15.3
Entrepreneurship Generation	First gen.	69.0
	Others	31.0

Table 4: Features of SMEs

Characteristics		Percentage
Nature of Business	Manufacturing	19.5
	Contractual	8.9
	Retailing	37.4
	Services	34.2
Period of Business	< 2	3.9
	2-5	30.3
	5-10	56.7
	> 10	9.1
Investment (Rs. in lakhs)	< 1	15.0
	1-5	42.1
	5-10	33.5
	> 10	9.4
Monthly Turnover (Rs. in Lakhs)	< 0.5	16.0
	0.5-1	43.6
	1-2	28.3
	>2	12.1
Monthly Profits (Rs. in Thousands)	< 5	11.4
	5-10	34.0
	10-20	27.8
	> 20	26.8
Staff Strength	< 20	78.1
	20-50	10.6

	> 50	11.3
IT Staff Strength	< 3	50.2
	3-5	43.6
	> 5	6.2
Source of Funds for Digitalising Business	Purely Self	46.3
	Purely Borrowed	23.4
	Self and Borrowed	30.3

Factors Casting a Bearing on SMEs to Digitalise their Business

SMEs would have started their business in the usual physical mode. However, they would have decided to digitalise their business in the due course and many factors would have motivated them to adopt digitalisation of business by going online. An attempt has been made to assess the importance of some factors which have been identified through past literature, casting a bearing on the SMEs adopting digitalisation of business by going online and the results from the viewpoint of the SMEs surveyed is showcased in table 5.

Table 5: Factors Casting a Bearing on SMEs to Digitalise their Business

Statement	Mean
Ability to support Digitalisation through IT hardware and infrastructure	2.8522
Cost of adopting new technologies and equipment	3.2414
Customers readiness to adopt Digitalisation	3.3916
Competition	3.7217
Price competitiveness	3.6034
Minimising cost	3.6970
Demand of customers/suppliers	3.7611
Skilled work force	3.9089

Availability of skilled work force is the important factor casting significant bearing on SMEs deciding to digitalise their business followed by Demand of customers/suppliers, competition, minimising cost and accomplishing price competitiveness. However, Customers readiness to adopt digitalisation, cost of adopting new technologies and equipments and Ability of a business to support digitalisation in the form of available hardware and infrastructure casts only average bearing on the SMEs deciding to digitalise their business.

Relationship between Ability of Firms to support Digitalisation through IT Hardware and Infrastructure and Profile of SMEs and Entrepreneurs Managing the SMEs

The relationship between Ability of firms to support Digitalisation through IT hardware and infrastructure and profile of SMEs and entrepreneurs managing the SMEs has been explored using ANOVA and the outcome is showcased in table 6.

Table 6: Relationship between Ability of Firms to Support Digitalisation through IT Hardware and Infrastructure and Characteristics of SMEs and Entrepreneurs Managing the SMEs

Characteristic	F	Sig.
Gender	26.893	0.000
Age	1.685	0.187
Educational Qualifications	3.549	0.009
Entrepreneurship Generation	26.690	0.000
Nature of Business	29.588	0.000
Length of Existence (in years)	6.996	0.000
Investment (Rs. in Lakhs)	10.860	0.000
Turnover (in lakhs)	11.513	0.000
Net Profits (in Thousand)	3.459	0.016
Staff Strength	8.797	0.000
IT Staff Strength	1.675	0.189
Source of funds for digitalisation	9.524	0.000
Period of Online Presence	12.388	0.000

Substantial relationship has been established between the factor of Ability to support Digitalisation through IT hardware and infrastructure and gender, educational qualifications and entrepreneurship

generation of the entrepreneurs managing the SMEs and all profile variables of the SMEs barring IT staff strength and the nature of such relationship has been portrayed in table 7.

Table 7: Nature of Relationship between Ability of the SMEs to support Digitalisation through IT hardware and infrastructure and Significant profile Variables Managing the SMEs

Profile		Mean	Profile	Mean	
Nature of Business	Contractual	1.6944	Investment (Rs. in Lakhs)	<1	2.1475
	Manufacturing	2.6835*		>10	2.8684*
	Retailing	2.7105*		1-5	2.8947*
	Service	3.4029**		5-10	3.1103*
Years of Existence	> 10	2.2973	Turnover (Rs. in lakhs)	<0.5	2.5231
	< 2	2.3125		0.5-1	2.6384
	2-5	2.7317*		1-2	3.0957*
	5-10	3.0435*		>2	3.4898*
Net Profits (in Thousand)	< 5	2.4565	Years of Online Presence	<2	2.4603
	> 20	2.8073*		>5	2.6324
	5-10	2.8333*		2-5	3.1159*
		10-20	3.0796*	Education of Entrepreneurs	Schooling
Staff Strength	> 50	2.2391	Entrepreneurs	Degree	2.8026
	< 20	2.8991*		PG	2.7903
	20-50	3.1628*		Illiterates	3.2857*
Entrepreneurship Generation of Entrepreneurs	First	3.0429*	Source of funds	Diploma	3.5484*
	Others	2.4286		Partly Borrowed	2.4959
Gender of Entrepreneurs.	Males	3.0513*		Fully self	3.0585*
	Females	2.446		Fully borrowed	2.9053*

SMEs engaged in online business for 2-5 years, SMEs which have utilised exclusively self or borrowed funds for digitalising their business, SMEs with staff strength of less than 20 and 20-50, SMEs managing to earn monthly net profits of more than Rs. 5000, SMEs operating with an investment in excess of Rs. 1 lakh, SMEs engaged in business for 2-5 & 5-10 years, SMEs managed by first generation entrepreneurs, male entrepreneurs, first generation entrepreneurs and those possessing no formal education and diploma have been influenced to a larger extent by the factor of "Ability to support Digitalisation through hardware and infrastructure" when they were aspiring to digitalise their business.

Furthermore, SMEs engaged in service business were largely influenced by the factor followed by the SMEs engaged in manufacturing and retailing while SMEs engaged in contractual job were the least affected by this factor. Similarly, SMEs managing turnover in excess of Rs. 2 lakhs have been largely influenced by the factor followed by the SMEs with turnover of Rs. 1-2 lakhs while those with turnover of less than 50,000 and 50000-100000 have been the least affected by the factor.

Relationship between Competition as Influential Factor for SMEs Digitalising their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

The prevalence of substantial relationship between competition as an influential factor for SMEs digitalising their business and the profile characteristics of SMEs and the entrepreneurs managing these SMEs has been unearthed using ANOVA and the outcome is displayed in table 8.

Table 8: Relationship between Competition as Influential Factor for SMEs Digitalising their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

Profile	F	Sig.
Age of Entrepreneur	0.745	0.258
Gender of Entrepreneur	1.9456	0.057
Education of Entrepreneur	0.963	0.358
Entrepreneurship Generation of Entrepreneur	22.757	0.000
Age of Organisation	1.364	0.252
Staff Strength	0.864	0.422
IT Staff Strength	4.362	0.013
Nature of Business	11.560	0.000
Investment	12.727	0.000
Turnover	1.167	0.325
Source of Funds for Digitalisation	2.104	0.123
Monthly Profits	7.577	0.000
Period of Online Presence	3.304	0.038

Substantial relationship persists between competition prevalent in the market driving SMEs to digitalise their business and their nature of business, quantum of investment, period of online presence, IT Staff strength, monthly profits and entrepreneurship generation of entrepreneurs managing them. Nature of such relationship has been displayed in table 9.

Table 9: Nature of Relationship between Competition as Influential Factor for SMEs Digitalising their Business and Significant Profile Variables

Profile		Mean	Profile		Mean
Nature of Business	Contractual Job	3.0278	Investment (in lakhs)	<1	3.1475

	Manufacturing	3.4810*		1-5	3.6725*
	Service	3.8489**		5-10	3.9706*
	Retailing			>10	3.9737*
Monthly Net Profits (in Thousands)	< 5	3.5435	IT Staff Strength	3-5	3.2768
	5-10	3.5725		<3	3.1520
	> 20	3.6239		>5	3.72*
	10-20	4.0708*	Years of Online Presence	<2	3.4444
First	3.8679*	>5		3.7941*	
Entrepreneurship Generation.	Others	3.3968		2-5	3.7585*

SMEs which are engaged in online business for a longer period of 2-5 years & more than 5 years, SMEs which are engaging larger number of IT staff, SMEs managing moderate monthly net profits of Rs. 10,000-20,000, SMEs operating with larger investment in excess of Rs. 100,000, SMEs engaged in service & retailing and SMEs managed by first generation entrepreneurs have been largely influenced by competition prevalent in the market to digitalise their business.

Relationship Between Cost of adopting new technologies and Profile of SMEs and Entrepreneurs Managing the SMEs

The relationship between cost of adopting new technologies and equipment influencing SMEs to digitalise their business and the profile of SMEs and entrepreneurs managing the SMEs has been unearthed using ANOVA and the outcome is showcased in table 10.

Table 10: Relationship between Cost of adopting new technologies Influencing SMEs to Digitalise their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

Profile	F	Sig.
Age of Organisation	10.464	0.000
Nature of Business	6.548	0.000
Investment	27.125	0.000
Turnover	1.774	0.151
Net Profits	3.543	0.015
Staff Strength	7.728	0.001
IT Staff strength	3.719	0.025
Source of Fund	6.399	0.002

Years of online presence	13.276	0.002
Age of Entrepreneurs	1.570	0.205
Education of Entrepreneurs	1.968	0.099
Gender of Entrepreneurs	4.2554	0.036
Entrepreneurship Generation of Entrepreneurs	18.035	0.000

Substantial relationship persists between cost of adopting new technologies and equipment Influencing SMEs to Digitalise their Business and their period of existence, period of online presence, source of funds needed for digitalising business, monthly net profits, staff strength, IT staff strength, investment, nature of business and Entrepreneurship Generation & gender of entrepreneurs managing the SMEs and the nature of such relationship is displayed in table 11.

Table 11: Relationship between Cost of adopting new technologies Influencing SMEs to Digitalise their Business and Significant Profile Variables

Profile		Mean	Profile	Mean	
Years of Existence	> 10	2.5135	Nature of Business	Contractual	2.9167
	< 2	2.6875		Manufacturing	3.0633
	2-5	3.2358*		Retail	3.1447
	5-10	3.4000*		Service	3.5324*
Investment (in lakhs)	< 1	2.3607	Net Profits (in thousands)	<5	3.0435
	1-5	3.1930*		>20	3.1376
	5-10	3.5662**		5-10	3.1812
	> 10	3.7105**		10-20	3.4956*
Staff Strength	More than 50	2.7826	IT Staff strength	<3	3.152
	Less than 20	3.2587*		3-5	3.2768
	20-50	3.6047*		>5	3.7200*
Source of Fund	Partly Borrowed	2.9837	Years of online presence	<2	2.7778
	Fully Borrowed funds	3.2632*		>5	3.1176*

	Fully Self-Financed	3.3989*		2-5	3.4638**
Gender of Entrepreneurs	Males	3.3150*	Entrepreneurship Generation of Entrepreneurs	First	3.3821*
	Females	3.0902		Others	2.9286

SMEs engaged in online business for 2-5 years, those employing 20-50 employees and those operating with higher volume of investment of Rs. 5-10 lakhs & more than Rs. 10 lakhs were largely influenced by cost of adopting new technologies and equipment needed for digitalising business while SMEs engaged in online business for longer period of more than 5 years, those which are employing less than 20 employees and those operating with investment of Rs. 1-5 lakhs were modestly influenced. SMEs which are in online business for shorter duration of less than 2 years, those operating with lesser volume of investment of less than Rs. 100,000 and those employing more than 50 employees were influenced to below average extent by this factor.

SMEs which have utilised wholly self and borrowed funds for digitalising their business, those which are employing more than 5 IT staff, those earning monthly net profits of 10,000-20,000, those SMEs engaged in service business, SMEs engaged in business for 2-5 years & 5-10 years and SMEs managed by male and first generation entrepreneurs and entrepreneurs possessing diploma, post-graduation and no formal educational qualifications were largely influenced by this factor when compared with their respective counterparts.

Relationship Between Customers readiness to adopt Online Presence and Profile of SMEs and Entrepreneurs Managing the SMEs

The relationship between Customers readiness to adopt online presence influencing SMEs to digitalise their business and profile of SMEs and entrepreneurs managing the SMEs has been unearthed using ANOVA and the outcome is showcased in table 12.

Table 12: Relationship between Customers readiness to adopt online presence Influencing SMEs to Digitalise their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

Profile	F	Sig.
Age	1.570	0.209
Education	4.6454	0.002
Entrepreneurship generation	23.889	0.000
Gender	9.452	0.002
Years of Online Presence	9.937	0.007
Source of fund	7.726	0.001
IT Staff strength	7.896	0.002
Staff strength	8.855	0.000
Net profits	0.725	0.537
Turnover	13.585	0.000

Investment	8.621	0.000
Nature of Business	4.758	0.004
Age of Organisation	5.212	0.002

Substantial relationship is prevalent between Customers readiness to adopt online presence influencing SMEs to digitalise their business and gender, entrepreneurship generation and educational qualifications of entrepreneurs managing the SMEs and all profile variables of the SMEs barring monthly net profits.

Table 13: Relationship between Customers readiness to adopt online presence Influencing SMEs to Digitalise their Business and Significant Profile Variables

Profile		Mean	Profile		Mean
Years of Online Presence	< 2	3.0317	Source of fund	Partly Borrowed	3.1057
	> 5	3.2353		Fully Borrowed	3.4000*
	2-5	3.6039*		Fully Self	3.5745*
IT Staff strength	less than 3	3.3333	Staff strength	>50	2.8478
	3-5	3.4068		<20	3.4259*
	more than 5	3.7600*		20-50	3.7209*
Turnover (in Lakhs)	0.5-1	3.0847	Investment (in Lakhs)	<1	3.2924
	< 0.5	3.3077		1-5	3.2924
	1-2	3.6870*		5-10	3.5882*
	> 2	3.9184*		>10	3.7632*
Nature of Business	Contractual	2.9167	Years of Existence	>10	2.8919
	Manufacturing	3.2278		<2	2.9375
	Retail	3.2895		2-5	3.3577*
	Service	3.7194*		5-10	3.5217**
Education of Entrepreneurs.	Degree	3.2697	Gender of Entrepreneurs	Males	3.5018*
	PG	3.3871		Females	3.1654
	Schooling	3.4091	Entrepreneurship Generation of Entrepreneurs	First	3.5571*
	Diploma	3.7419*		Others	3.0238
	No Formal education	4.1429**			

SMEs engaged in business for 5-10 years and those managed by entrepreneurs without formal education were largely influenced by readiness of customers to adopt online presence followed by SMEs in business for 2-5 years and those managed by entrepreneurs with diploma qualifications while SMEs in business for more than 10 years & less than 2 years and those managed by graduate and post-graduate entrepreneurs were influenced by the factor only to an average extent.

SMEs engaged in service business, those operating with investment of Rs. 5-10 lakhs & more than Rs. 10 lakhs, those managing turnover of Rs. 1-2 lakhs & more than Rs. 2 lakhs, those SMEs employing 20-50 & more than 50 employees, SMEs operating with more than 5 IT staff, SMEs which have digitalised their business utilising purely own & borrowed funds, SMEs engaged in online business for 2-5 years and SMEs managed by male and first generation entrepreneurs were largely influenced by this factor to a greater extent than their respective counterparts.

Relationship between Demand of customers/suppliers and Profile of Entrepreneurs

The relationship between Demand of customers/suppliers influencing SMEs to digitalise their business and profile of SMEs and entrepreneurs managing the SMEs has been unearthed using ANOVA and the outcome is showcased in table 14.

Table 14: Relationship between Demand of customers/suppliers Influencing SMEs to Digitalise their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

Profile	F	Sig.
Age of Entrepreneurs	2.310	0.031
Education of Entrepreneurs	1.846	0.109
Gender of Entrepreneurs	7.869	0.003
Entrepreneurship Generation of Entrepreneurs	31.315	0.000
Age of organization	10.559	0.000
Nature of Business	4.337	0.005
Investment	9.717	0.000
Turnover	5.642	0.007
Net Profits	0.320	0.811
Staff strength	0.743	0.203
IT Staff strength	5.452	0.005
Source of funds	12.520	0.000
Years of Online presence	1.666	0.190

Substantial relationship persists between demand of customers/suppliers influencing SMEs to digitalise their business and length of experience, investment, turnover, IT staff strength, source of funds for digitalisation of business & nature of Business of the SMEs and age, gender and entrepreneurship generation of the entrepreneurs managing the SMEs. The nature of such relationship is exposed in table 15.

Table 15: Relationship between Demand of customers/suppliers Influencing SMEs to Digitalise their Business and Significant Profile Variables

Profile		Mean	Profile		Mean
Years of Existence	> 10	2.8108	Nature of Business	Contractual	2.75
	2-5	3.6016*		Manufacturing	3.5570*

	5-10	3.7043*		Retail	3.6974*
	< 2	4.0000**		Service	3.7482*
Investment (in lakhs)	< 1	3.1475	Turnover (in lakhs)	0.5-1	3.4915
	1-5	3.4912*		<0.5	3.5538
	> 10	3.7895**		>2	3.5918
	5-10	3.8971**		1-2	3.8087*
IT Staff strength	3-5	3.7684	Source of funds	Partly Borrowed	3.3252
	less than 3	3.6716		Fully Borrowed	3.6105*
	more than 5	4.44*		Fully Self	3.7819*
Gender of Entrepreneurs.	Males	3.8681*	Age of Entrepreneurs	>50	2.9667
	Females	3.5414		30-50	3.5921*
Entrepreneurship Generation of Entrepreneurs.	First	3.9607*		<30	3.6964*
	Others	3.3175			

SMEs which have utilised purely borrowed or own funds for digitalising their business, those operating with more than 5 IT staff, those with turnover of Rs. 1-2 lakhs, those engaged in manufacturing, retailing & service business and SMEs managed by male, first generation entrepreneurs and entrepreneurs aged more than 50 years and 30-50 years were largely influenced by demand of their customers/suppliers to digitalise their business when compared with their respective counterparts. SMEs which are engaged in business for less than 2 years and those operating with investment of Rs. 5-10 lakhs & more than Rs. 10 lakhs have been largely influenced by this factor while those engaged in business for 2-5 years & 5-10 years and those operating with investment of Rs. 1-5 lakhs have been moderately influenced and those operating with investment of less than Rs. 100,000 have been influenced by the factor to a lesser extent.

Relationship between Cost Minimisation Influencing SMEs to Digitalise their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

Relationship between cost minimisation influencing SMEs to digitalise their business and profile of SMEs and entrepreneurs managing the SMEs has been unearthed using ANOVA and the outcome is showcased in table 16.

Table 16: Relationship between Cost Minimisation Influencing SMEs to Digitalise their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

Profile	F	Sig.
Years of Online presence	8.900	0.000
Source of funds	0.871	0.864
IT staff strength	0.146	0.864
Staff strength	0.779	0.459
Net Profits	4.840	0.003
Turnover	3.548	0.015
Investment	16.076	0.000

Nature of Business	7.535	0.000
Age of organization	6.543	0.002
Education	3.619	0.007
Age	0.232	0.793
Entrepreneurship Generation	12.650	0.000
Gender	0.072	0.789

Substantial relationship prevails between cost minimisation as an important factor influencing the SMEs to digitalise their business and their length of existence, period of online presence, investment, turnover, net profits, nature of business and educational qualifications and entrepreneurship generation of the entrepreneurs managing them. The nature of such relationship is depicted in table 17.

Table 17: Relationship between Cost Minimisation Influencing SMEs to Digitalise their Business and Select Profile Variables

Profile		Mean	Profile	Mean	
Net Profits (in Thousands)	5-10	3.5145	Turnover (in Lakhs)	<0.5	3.5231
	> 20	3.5872		0.5-1	3.5706
	< 5	3.7826*		>2	3.8571*
	10-20	3.9912*		1-2	3.9217*
Investment (in Lakhs)	< 1	3.0164	Nature of Business	Contractual	3.0556
	> 10	3.5526*		Managerial	3.5696*
	1-5	3.6667*		Retailing	3.6908*
	5-10	4.0809**		Service	3.9424**
Years of Existence	< 2	3.25	Education of Entrepreneurs	Degree	3.4803
	> 10	3.5405*		Schooling	3.7338*
	2-5	3.6748*		PG	3.8871*
	5-10	3.7652*		No Formal Education	4.00*
Years of Online Presence.	<2	3.254	Entrepreneurship Generation of Entrepreneurs	Diploma	4.1290**
	>5	3.6324*		First	3.8214*
	2-5	3.8744*		Others	3.4206

SMEs engaged in business for more than 2 years, those managing turnover in excess of Rs. 1 lakh, those managing monthly net profits of less than Rs. 5000 & 10,000-20,000, those operating with an investment of Rs. 5-10 lakhs, those engaged in service business, those engaged in online business for more than 2 years and those managed by diploma-holders and first generation entrepreneurs were largely influenced by possibility of minimising cost while deciding about digitalising their business when

compared with their respective counterparts. SMEs operating with an investment of Rs. 1-2 lakhs & more than 10 lakhs, those engaged in retailing & manufacturing and those managed by entrepreneurs possessing post-graduation, schooling and no formal education were modestly influenced by this factor while those operating with investment of less than Rs. 1 lakh, those engaged in contractual job and those managed by graduate entrepreneurs were influenced marginally by this factor.

Relationship between Price Competitiveness Influencing SMEs to Digitalise their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

Relationship between price competitiveness influencing SMEs to digitalise their business and profile of SMEs and entrepreneurs managing the SMEs has been unearthed using ANOVA and the outcome is showcased in table 18.

Table 18: Relationship between Price Competitiveness Influencing SMEs to Digitalise their Business and Profile of SMEs and Entrepreneurs Managing the SMEs

Profile	F	Sig.
Age of Entrepreneurs	5.725	0.004
Education of Entrepreneurs	2.229	0.045
Entrepreneurship Generation of Entrepreneurs	29.564	0.000
Gender of Entrepreneurs	2.350	0.126
Age of organization	7.796	0.000
Nature of Business	8.546	0.000
Investment	7.728	0.000
Turnover	1.922	0.125
Net Profits	3.474	0.016
Staff strength	0.620	0.538
IT Staff strength	4.348	0.014
Source of funds	6.308	0.002
Years of Online presence	6.120	0.002

Substantial relationship persists between price competitiveness influencing SMEs to digitalise their business and their nature of business, source of fund for digitalising business, staff strength, investment, net profits, length of existence, period of online presence and age, entrepreneurship generation and educational qualifications of entrepreneurs managing the SMEs and the nature of such relationship is portrayed in table 19.

Table 19: Relationship between Price Competitiveness Influencing SMEs to Digitalise their Business and Significant Profile Variables

Profile	Mean	Profile	Mean
Years of Existence	> 10	Nature of Business.	Contractual
	2-5		3.6016*

	5-10	3.7043*		Retailing	3.6974*
	< 2	4.0000**		Service	3.7482*
Investment (in lakhs)	< 1	3.1475	Net Profits (in Thousands).	>20	3.3394
	1-5	3.4912*		<5	3.5435
	> 10	3.7895**		5-10	3.6667
	5-10	3.8971**		10-20	3.8053*
IT Staff strength	3-5	3.5593	Source of funds.	Partly Borrowed	3.3252
	< 3	3.5637		Fully Borrowed	3.6105*
	> 5	4.2400*		Fully self	3.7819*
Years of Online presence	< 2	3.3968	Education of Entrepreneurs.	Degree	3.4737
	> 5	3.4118		PG	3.5484
	2-5	3.7923*		Schooling	3.6429
Age of Entrepreneur.	>50	2.9667		Diploma	4.00*
	30-50	3.5921*		No Formal Education	4.235*
	<30	3.6964*	Entrepreneurship Generation.	First	3.8000*
				Others	3.1667

SMEs engaged in online business for 2-5 years, those SMEs which have utilised purely borrowed & own funds, those employing more than 5 IT employees, those SMEs earning monthly net profits of Rs. 10000-20000, SMEs engaged in manufacturing, retailing & service business and SMEs managed by first generation entrepreneurs, entrepreneurs possessing diploma & no formal education and entrepreneurs aged less than 30 & 30-50 years were largely influenced by the factor of gaining price competitiveness while deciding about digitalising their business. SMEs engaged in business for less than 2 years and those operating with an investment of more than Rs. 5,00,000 were highly influenced by the factor while SMEs engaged in business for 2-5 & 5-10 years and those operating with investment of Rs. 100,000-500,000 were modestly influenced by the factor and SMEs operating with investment of less than Rs. 100,000 and those engaged in business for more than 10 years were marginally influenced by the factor.

Relationship between Availability of Skilled Work Force Influencing SMEs to Digitalise their Business their Profile of the SMEs and Entrepreneurs Managing them

Relationship between availability of skilled work force influencing SMEs to digitalise their business and profile of the SMEs and the entrepreneurs managing the SMEs has been unearthed using ANOVA and the outcome is showcased in table 20.

Table 20: Relationship between Availability of Skilled Work Force Influencing SMEs to Digitalise their Business and Profile of SMEs and Entrepreneurs Managing them

Profile	F	Sig.
Staff strength	0.703	0.496
IT Staff strength	0.745	0.475
period of Online Presence	8.481	0.000
Source of funds	2.313	0.100
Age of organisation	2.970	0.032

Nature of Business	6.530	0.000
Investment	13.186	0.000
Turnover	9.638	0.000
Net profits	4.768	0.003
Age of Entrepreneur	0.129	0.879
Education of Entrepreneur	0.651	0.626
Gender of Entrepreneur	2.963	0.086
Entrepreneurship Generation of Entrepreneur	0.772	0.380

Substantial relationship persists between availability of skilled work force influencing SMEs to digitalise their business and their length of existence, period of online presence, nature of business, investment, net profits and turnover and the nature of such relationship is portrayed in table 21.

Table 21: Relationship between Availability of Skilled Work Force Influencing SMEs to Digitalise their Business and Significant Profile Variables

Profile		Mean	Profile		Mean
Age of organisation	Less than 2 years	3.3125	Nature of Business.	Contractual	3.3889
	More than 10 years	3.8108*		Manufacturing	3.6582*
	2-5 years	3.8211*		Retailing	4.00**
	5-10 years	4.0130*		Service	4.0863**
Investment (in lakhs)	< 1	3.3607	Turnover (in Lakhs).	<0.5	3.6308
	1-5	3.7778*		0.5-1	3.7175
	5-10	4.2279**		1-2	4.1652*
	> 10	4.2368**		>2	4.3673*
Monthly Net Profits (in Thousand)	< 5	3.6304	Years of Online Presence.	<2	3.4603
	5-10	3.7826		>5	3.8824*
	> 20	3.8899		2-5	4.0628*
	10-20	4.1947*			

SMEs managing to earn monthly net profits of Rs. 10000-20000 and turnover of more than Rs. 100,000, those engaged in business for more than 2 years and in online business for more than 2 years were largely influenced by availability of skilled work force for digitalising their business. SMEs engaged in service and retailing and those operating with investment in excess of Rs. 500,000 were highly influenced by this factor while SMEs engaged in manufacturing and those operating with investment of Rs. 100,000-500,000 were well influenced by this factor and SMEs engaged in contractual job and those operating with investment of less than Rs. 100,000 were marginally influenced.

Results and Discussion

Availability of skilled work force is the important factor casting significant bearing on SMEs deciding to digitalise their business followed by Demand of customers/suppliers, competition, minimising cost and

accomplishing price competitiveness.

Gaining price competitiveness, readiness of customers, cost of adopting new technologies and equipment, cost minimisation and infrastructure facilities have cast a significant bearing on business digitalisation endeavours of SMEs managed by entrepreneurs without much education and without entrepreneurship backing while competition has driven the business digitalisation endeavours of SMEs managed by entrepreneurs without any entrepreneurship backing. Demand of customers/vendors have driven SMEs managed by older entrepreneurs and entrepreneurs without entrepreneurship backing towards digitalisation of business while gaining price competitiveness has driven SMEs managed by younger entrepreneurs towards digitalisation of business.

infrastructural facilities, cost of adopting new technologies and equipment, readiness of customers to adopt online presence, demand of customers/suppliers, cost minimisation, gaining price competitiveness and availability of skilled work force have driven SMEs engaged in manufacturing, retailing and services to digitalise their business. Readiness of customers to adopt online presence has driven large sized SMEs in terms of staff strength to digitalise their business while small sized SMEs have been driven by infrastructural facilities and competition. SMEs with more IT staff were influenced by competition, cost of adopting new technologies and equipment, readiness of customers to adopt online presence, demand of customers/suppliers and gaining price competitiveness to digitalise their business.

SMEs managing high turnover were influenced by infrastructural facilities, competition, cost of adopting new technologies and equipment, readiness of customers to adopt online presence, cost minimisation and availability of skilled work force to adopt digitalisation of business while SMEs managing moderate turnover were influenced by demand of customers/suppliers, cost minimisation and availability of skilled work force.

SMEs managing to earn lower monthly profits were influenced by cost minimisation to digitalise their business while SMEs earning high profits were influenced by infrastructural facilities and competition and SMEs managing to earn moderate profits were influenced by cost of adopting new technologies and equipment, cost minimisation, gaining price competitiveness and availability of skilled work force.

SMEs operating with higher volume of investment were influenced by infrastructural facilities, competition, readiness of customers to adopt online presence, demand of customers/suppliers, gaining price competitiveness and availability of skilled work force to adopt digitalisation of business while SMEs operating with moderate investment were influenced by cost minimisation.

SMEs engaged in business for long period were influenced by cost minimisation and availability of skilled work force to digitalise their business while SMEs in business for medium term were influenced by infrastructural facilities, competition, cost of adopting new technologies and equipment, readiness of customers to adopt online presence and cost minimisation and SMEs in business for shorter period were influenced by demand of customers/suppliers and gaining price competitiveness.

SMEs engaged in online business for longer period were influenced by competition, cost of adopting new technologies, cost minimisation and availability of skilled work force while SMEs engaged in online business for moderate period were influenced by readiness of customers to adopt online presence, cost minimisation and gaining price competitiveness.

SMEs which have utilised purely borrowed funds or purely self funds for digitalising their business were influenced by infrastructural facilities, competition, cost of adopting new technologies and equipment, readiness of customers to adopt online presence, demand of customers/suppliers, gaining price competitiveness and availability of skilled work force to digitalise their business.

Conclusion

This study has revealed that availability of proficient manpower is the most important determinant of SMEs venturing into digitalisation of business. Hence, SMEs can successfully digitalise their business only if they have competent staff to take care of the changing needs of technology execution. Further, market conditions and possibility of minimising cost also plays important part in SMEs digitalising their business and gain competitive advantage over the firms doing business through the conventional offline mode.

REFERENCES

1. Aggestam, L. and E. Soderstrom (2004). "Managing Critical Success Factors." I ADIS International Journal on WWW/Internet 4(1): 96-110.
2. Al-Mashari, M. (2002). Electronic commerce. Benchmarking: An International Journal, 9(2), 182–189.
3. Amoroso, D. and S. Vannoy (2006). "Translating the adoption of b2b ebusiness into measurable value for organizations."
4. Angeles, R. and R. Nath (2007). "Business-to-business e-procurement: success factors and challenges to implementation." Supply Chain Management: An International Journal 12(21): 104-115.
5. Avlonitis, G. J., & Karayanni, D. A. (2000). The impact of internet use on business-to-business marketing: Examples from American and European companies. Industrial Marketing Management.
6. Azam, M. (2006). "Implementation of B2C e-commerce in Bangladesh: The effects of buying culture and e-infrastructure." ADVANCES IN GLOBAL BUSINESS RESEARCH 3(1): 55-56
7. Bertschek, I. and H. Fryges (2002). "The adoption of business-to-business ecommerce: Empirical evidence for German companies." Center for European Economic Research (ZEWL
8. Chen, L., Gillenson, M. L., & Sherrell, D. L. (2004). Consumer acceptance of virtual stores. ACM SIGMIS Database, 35(2), 8–31.
9. Ching, H. L., & Ellis, P. (2004). Marketing in Cyberspace: What Factors Drive E-Commerce Adoption? Journal of Marketing Management, 20(3–4), 409–429.
10. Chong, S. (2008). "Success in electronic commerce implementation: A crosscountry study of small and medium-sized enterprises." Journal of Enterprise Information Management 21(5): 468-492
11. Claycomb, C., Iyer, K., & Germain, R. (2005). Predicting the level of B2B e-commerce in industrial organizations. Industrial Marketing Management, 34(3), 221–234.
12. Cullen, A. and M. Taylor (2009). "Critical success factors for B2B ecommerce use within the UK NHS pharmaceutical supply chain." International Journal of Operations & Production Management 29(11): 1156-1185.
13. Dans, E. and D. Allen (2002). B2B e-Marketplaees: What's in it for me?. Academic Conferences Limited.
14. Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. Management Science.
15. Dubelaar, C., Sohal, A., & Savic, V. (2005). Benefits, impediments and critical success factors in B2C E-business adoption. Technovation, 25(11), 1251–1262.
16. Duffy, G. and B. Dale (2002). "E-commerce processes: a study of criticality." Industrial Management & Data Systems 102(8): 432-441.

17. Esichaikul, V. and S. Chavananon (2001). Electronic Commerce and Electronic Business Implementation Success Factors.
18. Falk, H. and L. Hogstrom (2001). "KEY SUCCESS FACTORS FOR A FUNCTIONING SUPPLY CHAIN IN E-COMMERCE B2B."
19. Jeffcoate, J., Chappell, C., & Feindt, S. (2002). Best practice in SME adoption of e-commerce. *Benchmarking: An International Journal*, 9(2), 122–132.
20. Jennex, M. E., Amoroso, D., & Adalakun, O. (2004). E-Commerce Infrastructure Success Factors for Small Companies in Developing Economies. *Electronic Commerce Research*, 4(3), 263–286.
21. Kaefer, F. and E. Bendoly (2004). "Measuring the impact of organizational constraints on the success of business-to-business e-commerce efforts: a transactional focus." *Information & Management* 41(5): 529-541
22. Kamal, M. (2006). "IT innovation adoption in the government sector: identifying the critical success factors." *Journal of Enterprise Information Management* 19(2): 192-222.
23. Li, J. and L. Li (2005). On the critical success factors for B2B e-marketplace. *ACM*.
24. Liu, C. and K. Arnett (2000). "Exploring the factors associated with Web site success in the context of electronic commerce." *Information & Management* 38(1): 23-33.
25. Madeja, N. and D. Schoder (2003). "Designed for success-empirical evidence on features of corporate web pages."
26. McCue, S. (1999). Small firms and the internet: force or farce?. In *International Trade Forum* (No. 1, p. 27). International Trade Centre.
27. Subramaniam, C. and M. Shaw (2002). "A study of the value and impact of B2B e-commerce: The case of Web-based procurement." *International Journal of Electronic Commerce* 6(4): 19-40
28. Sung, T. (2006). "E-commerce critical success factors: East vs. West." *Technological Forecasting and Social Change* 73(9): 1161-1177
29. Teo, T. S. H., Lin, S., & Lai, K. (2009). Adopters and non-adopters of e-procurement in Singapore: An empirical study. *Omega*, 37(5), 972–987.
30. Thompson S. H. Teo, C Ranganathan, et al. (2001). Facilitators and inhibitors for deploying business to business e-commerce application. *Twenty-Second International Conference on Information Systems*
31. Turban, E., D. King, et al. (2002). *Electronic commerce: A managerial perspective 2002*, Prentice Hall.
32. Viehland, D. (2000). Critical success factors for developing an e-business strategy.
33. Vlachopoulou, M. and V. Manthou (2003). "Partnership alliances in virtual markets." *International Journal of Physical Distribution & Logistics Management* 33(3): 254-267
34. Yan, G. and Paradi J.C. (1999). "Success Criteria for Financial Institutions in Electronic Commerce", *Proceeding of the 32nd Annual Hawaii International Conference on System Sciences*, vol.5, pp.5007, January 1999