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Expounding the Environment of Small and Medium Enterprises (SMEs): A Qualitative Study Conducted in Pakistan

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Abstract
The aim of this study is to expound the environment of SMEs by way of identifying, ranking and classifying factors that affect growth of SMEs. The overall design of the study comprises of review of literature, data collection from primary sources and application of modeling techniques. This is a qualitative study that comprises of literature review along with experts' opinion for exploring environmental factors affecting growth of SMEs. The experts are selected on the basis of non-probability based purposive sampling and data is collected by face to face interview through a questionnaire. The factors are ranked in different levels of importance using Interpretive Structural Model (ISM) which later on are classified in independent, dependent, autonomous and linkage using MICMAC. The results of literature review and experts' opinion show that there are fifteen important factors that are critical. The results of ISM show that the least critical factors occupying *Level I* includes 'age of enterprise', 'experience of owner' and 'education of owner', whereas, 'trade internationalization' is the most critical factor occupying *Level IX*. Remaining eleven factors are with effects that range on the continuum of moderate to severe moderate occupying middle position of the model. The results of MICMAC reveal that trade internationalization is categorized as the important independent factor along with seven other factors. Six factors are categorized as dependent factors. Only one factor is classified as autonomous, and as such no factor is categorized in linkage. This is a seminal research study that contributes to the literature by providing new firsthand information on the phenomenon under study by using novel mathematical modeling techniques. This study is helpful to all stakeholders including Government, industry, researchers and academicians in prioritizing the critical factors for revolutionary growth of SME sector.
Keywords: SMEs, ISM, MICMAC, Environment, Critical Factors Affecting Growth of SMEs

1. Introduction

SMEs are the backbone of the economy of any country. These enterprises play a vital role in economic growth of developing countries. The significance and role that SMEs sector plays in economic progression of any country cannot be underestimated because it contributes to improving employment opportunities, living standards and gross domestic product of the country (Obafemi et al., 2021). A lot of theoretical and empirical research studies are found on stressing the importance of SMEs e.g Denicolai et al., 2021; Gkypali et al., 2021; Mothoa, and Rankhumise, 2021; Obafemi et al., 2021. In order to reap the benefits of SMEs, it is also important to understand the environmental factors that can help in fostering the growth of these enterprises. Many researchers claim that SMEs are major contributors to the GDP of most of the developing countries around the world (Ogundana et al., 2017). SMEs sector comprises almost 90% of Pakistan's businesses by providing employment oppurtunities to 80% of workforce and contributing 40% to the GDP (Qalati et al., 2021). Despite all these, SMEs in Pakistan face numerous environmental issues that hinder their growth. Therefore, it is the need of hour to investigate various factors that can have an impact on growth of SMEs in Pakistan so that Pakistan can have long term benefits from this sector. The objectives of the study are: i) To extract environmental factors having potential to affect growth of SMEs in Pakistan ii) to determine relationship among the identified factors, iii) to impose hierarchy on extracted factors and identify the most critical factors, iv) to apply MICMAC by classifying factors. In order to achieve these objective, various methodological techniques are available like AHP, ANP, TOPSIS and Interpretive Structural Modeling (ISM), Matriced' Impacts Croise's Multiplication Appliquée a UN Classement (MICMAC). After due consideration, ISM in combination with MICMAC is found to be the most pertinent techniques for this study because it has several benefits over other statistical and/or mathematical techniques (Warfield, 1973 and 1974; Sushil, 2017; Chidambaranathan et al., 2009; Shaukat et al., 2021; Fu et al. 2022a; Abbass et al., 2022a; Fu, et al., 2022b; Abbass, et al., 2022b; Basit, et al., 2021; Abbass, et al. 2021; Shaukat, et al., 2021a). This methodology is suitable for this type of qualitative study as it uses limited amount of primary data for analysis and provides deeper valuable insights to the phenomenon under investigation by exploiting Boolean algebra, set theory and graph theory (Abbass et al., 2021). The study contributes a structural model and classification diagram of the critical environmental factors of SMEs' growth. Rest of the paper is structured as: literature review, methodology, modeling/analysis/results/discussion and conclusion.

2. Literature Review

Review of literature is an important aspect as it not only provides rationale for study but also saves time in reinventing the wheel. For the purpose, we have explored literature on renowned research databasis using google scholar as search engine and different keywords like small and medium enteprizes, growth factors SMEs, ISM, MICMAC, small businesses, medium size businesses etc. We found more than five hundred papers, reviewed them and identified a list of factors (Annexture I) that make environment of growth of SMEs. Some relevant studies are presented here to clarify the context of the study. Aquilante and Vendrell-Herrero (2021) evaluated the effect of products and services on exports of German SMEs. Arza and López (2021) analyzed the barriers affecting innovation in Argentina SMEs. Barrett et al., 2021 investigated the impact of SMEs leader (founder/CEO) on open innovation adoption capabilities in Irish SMEs. Cosenz and Bivona (2021) presented a case-study of SMEs currently involved in innovating its business model in Italy. The competitiveness of high-tech companies with other SMEs was analyzed in France (Enjolras et al., 2019). Huo et al. (2021) asserted that early-life exposure to R & D and marketing transition significantly support SMEs CEOs to engage in proactive innovative activities. Haddoud et al. (2021) carried a comprehensive study to propose a model that encompasses

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on vital factors determining SMEs export performance and survival. Hoang et al. (2021) examined the relationship among gender, innovation and labor productivity as a case study in Vietnam SMEs. Kamali Zonouzi et al. (2021) explored the political factors impacting the survival of Iranian SMEs. Kijkasiwat (2021) buttressed that subjective norms, attitudes and perceived behavioral control of owners of SMEs' adversely affect their intention to use private finance. Kim and Park (2021) analyzed the impact of government funded R&D collaboration on Korean SMEs business performance. Matsuzaki et al. (2021) affirmed that policy programs (open innovation, ratio of R&D investment to sales, sources of ideas, HR development, problem solving ability and business development strategies) enhance the innovation policy of Japan SMEs. Modisane and Jokonya (2021) highlighted chief factors (using conceptual research model based on technology-organization-environment framework) that has impact on cloud computing adoption amongst small, medium and micro-size enterprises. Lam et al. (2017) assessed the likelihood of risks and rewards associated with the adoption of building information modeling for SMEs in UK. Nguyen et al. (2021) bolstered that entrepreneurial leadership through the mediators (like 'dynamic capabilities', 'team creativity' and 'competitive advantages') can enhance the performance of SMEs. Le et al. (2021) argued that CSR practices towards environment, society, employees and other stakeholders are the major determinants to increase business continuity and customer retention leading to a better SMEs performance. Lee (2021) examined technology-related innovation characteristics affecting survival of SMEs in manufacturing industry of Korea. Nordhagen et al. (2021) gathered data from 367 agri-food micro, small and medium-sized enterprises in 17 low and middle income countries to examine the food supply chains and make sure the nutrition and food security. Nyoni and Bonga (2018) identified the critical success factors for SMEs in Zambabwe. Rajalo and Vadi (2021) investigated the low capacity SMEs and collaboration of researchers to help excel SMEs in Estonia. Turkyilmaz et al. (2021) highlighted the challenges and opportunities for Kazakhstan SMEs. Viswanathan and Telukdarie (2021) used systems dynamic approach to provide strategic business support to SMEs digitalization in South Africa. Yoruk et al. (2021) explored the impact of interdependencies between knowledge sources and internationalization on the level of innovation of Romanian SMEs. Bai et al. (2021) investigated the COVID-19 impact on micro and small enterprises and found adverse impact on them because of limited use of digital technologies especially in under-developed countries. Centobelli et al. (2021) examined the relationships between environmental commitment, social pressure, green economic incentives, sustainable supply chain design, supply chain relationship management and circular economy capability to propose a model. The results revealed that i) green economic activities and environmental commitment have a substantial positive impact on sustainable supply chain design and supply chain relationship management, ii) there is a positive effect of social pressure on green economic incentives and environmental commitment, and iii) sustainable supply chain design and supply chain relationship management are pertinent to improve the circular economy capabilities of SMEs. In short, initially thirty factors affecting growth of SMEs were extracted from review of literature (Annexure 1). List of factors was presented to experts to verify relevance, importance, and final inclusion in the study. The experts were given an option to include, eliminate, merge and/or bifurcate the factors. In this way, only 15 factors qualified for further study as given Table 1. Approval vote sheet of experts in this regard is given as Annexure II.

Table 1: Final List of Factors

Code	Factor Name	Votes
F1	Availability of Sufficient capital	10
F2	Size of Enterprise	9
F3	Age of Enterprise	8
F4	Experience of owner	10
F5	Education of owner	9
F6	Informal Enterprise	12
F7	Availability of Infrastructure facilities	13
F8	Adoption of innovative advance Technology	13
F9	Govt. Regulations & Taxes	9
F10	Trade Internationalization	15
F11	Human Resource Management	13
F12	Accessibility to Bank Credit	11
F13	Entrepreneurial Orientation in family enterprise	11
F14	Incorporation of TQM Techniques	10
F15	Integration of Corporate Social Responsibility	12

The thirty factors in fact have been reduced to fifteen by majority rule. Since there are fifteen experts on panel therefore the factors attaining approval votes less than eight could not qualify for further study. Table 1 contains the elected factors depicting the votes thereagainst.

3. Methodology

This study uses interpretivisim as research philosophy and inductive research approach to investigate environmental factors affecting growth of SMEs. The overall research design is qualitative comprising of review of literature, primary data collection, and mathematical analysis using ISM and MICMAC. The population of the study is folks of stakeholders of SMEs. The sample of fifteen experts (focus group) from within the stakeholders of SMEs is chosen on the basis of non-probability purposive sampling. Data is collected from the field through a semi-structured interview followed by matrix type questionnaire. This study employed different methods: i) for identification of factors, ii) data elicitation and iii) modeling & analysis. There are range of methodologies available

for identification of factors/elements of systems e.g. literature review (Li et al., 2019; Avinash et al., 2018; Thamsatitdej et al., 2017), expert opinion (Majumdar & Sinha, 2019; Thamsatitdej et al., 2017; Cai & Xia, 2018), case study (Valmohammadi & Dashti, 2016), exploratory factor analysis (Li & Yang, 2014), presuming by authors: (Lohaus & Habermann, 2019), Delphi method (Zhang & Wei, 2010), and anecdotal evidences from literature (Azevedo et al., 2013) etc. After considering all these, the combination of review of literature with opinions from experts are found to be the most suitable for identifying environmental factors affecting growth of SMEs. For eliciting the data from experts, there is also a wide variety of methods including Delphi method, nominal group technique, repertory-grid interview technique, brainstorming, idea engineering, problem solving groups, open ended interviews, matrix type questionnaires, one to one interviews, approval voting on alternatives or elect alternatives (*VAXO*) for every pair of relations through questionnaire and/or software. We used one to one interview and matrix type of questionnaire to extract data on $n((n-1)/2)$ matrix using traditional ISM symbols *VAXO*. For extraction of data certain instructions were devised and mention on the questionnaire attached as *Annexure-V* for ready reference of readers. A wide range of mathematical and statistical modeling methods e.g. ANP, FANP, AHP, TOPSIS, ISM, TISM, IPA, MICMAC ARAS, WASPAS, IRP, and ARAS-F etc. were considered by authors for modeling and analysis (Shaukat, et al., 2021b; Niazi, et al., 2020a; Niazi, et al., 2020b; Niazi, et al., 2020c; Niazi, Qazi, & Basit, 2020; Qazi, et al., 2019). ISM and MICMAC outweigh all other techniques in the case of the phenomenon under study.

Panel of Experts: The responses from experts are extracted for the reason that data on factors affecting growth of SMEs are not readily/simply available from secondary sources. Panel of experts can be categorized into two i.e. homogenous and heterogeneous. For homogenous panel of experts, it is recommended to have a panel of 10-16 experts in order to have the optimal results (Strasser & Vaux 2018). For a heterogeneous group of experts, the optimum size may range from 8 to 14 experts from different fields (Warfield, 1974; Niazi, et al., 2019; Niazi, Qazi, Basit, & Khan, 2019; Niazi, Qazi, & Sandhu, 2019; Niazi, Qazi & Basit, 2019a; Niazi, Qazi & Basit, 2019b; Niazi, Qazi & Basit, 2019c). Expert groups are often chosen for data elicitation because of their benefits over other statistical groups. As experts have better knowledge and understanding of the phenomenon under study along with expertise to establish contexts, directions, and relationships on factors therefore the data collected from them is more meaningful than that of statistical groups. The size of the panel for this particular study is 15 experts from academia and industry. Criteria to select experts is: having more than ten years of relevant work/research experience, at least university graduate, permanent employee/proprietor of the organization, dealing with SMEs in one way or other and have some acumen of research. Three discussion rounds were held with experts i.e. for invitation & rapport development, data elicitation and model validation. In last round experts verified model both logically and theoretically. This process took a time period of three to five months. Among fifteen experts nine were from SMEs' credit related departments of nine different banks, three were from industry, one was entrepreneur, one was from academia and one was from general public (*Annexure III*).

4. Modelling, Analysis, Results and Discussion

ISM Modeling: To apply ISM, a classical procedure developed by Warfield (1973) and used by Abbas et al. (2021) is used. The schema of Abbas et al. (2021) is adopted and appended below for clarity of understanding the methodology.

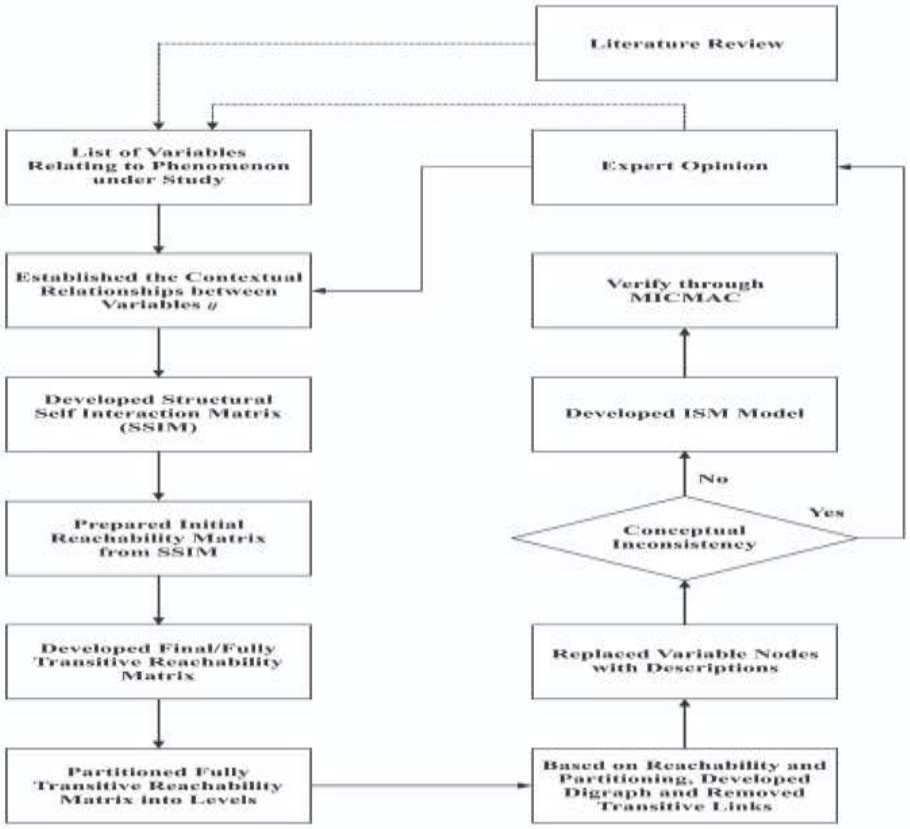

Figure 1: Schema of Applying ISM (Adopted from Abbass et al., 2021)

The data elicited from experts is accumulated by majority rule and a matrix is created shown as Table 2.

Table 2: Structural Self Interaction Matrix (SSIM)

Factors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
F1		A	V	V	V	A	A	A	A	A	A	V	A	A	A
F2			V	V	V	A	A	A	A	A	A	X	A	A	A
F3				A	V	A	A	A	A	A	A	A	A	A	A
F4					X	A	A	A	A	A	A	A	A	A	A
F5						A	A	A	O	A	A	A	A	A	A
F6							V	A	A	A	A	A	A	A	A
F7								A	A	A	V	V	A	A	A
F8									A	A	V	V	V	V	V
F9										A	X	A	A	A	A
F10											V	V	V	V	V
F11												A	V	V	V
F12													V	V	V
F13														A	A
F14															A
F15															

SSIM is converted into initial reachability matrix (Table 3) using classical rules of conversion of SSIM into reachability matrix (Attri et al., 2013; Warfield, 1973; Niazi et al., 2019).

Table 3: Initial Reachability Matrix

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	Driving
F1	1	0	1	1	1	0	0	0	0	0	0	1	0	0	0	5
F2	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	6
F3	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
F4	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3
F5	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
F6	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	7
F7	1	1	1	1	1	0	1	0	0	0	1	1	0	0	0	8
F8	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	13
F9	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	9
F10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
F11	1	1	1	1	1	1	0	0	1	0	1	0	1	1	1	11
F12	0	1	1	1	1	1	0	0	1	0	1	1	1	1	1	11
F13	1	1	1	1	1	1	1	0	1	0	0	0	1	0	0	9
F14	1	1	1	1	1	1	1	0	1	0	0	0	1	1	0	10
F15	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	11
Dependence	11	11	14	14	14	9	8	3	7	1	6	6	7	6	5	

Table 4: Final Reachability Matrix

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15
F1	1	1*	1	1	1	1*	0	0	1*	0	1*	1	1*	1*	1*
F2	1	1	1	1	1	1*	0	0	1*	0	1*	1	1*	1*	1*
F3	0	0	1	1*	1	0	0	0	0	0	0	0	0	0	0
F4	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
F5	0	0	1*	1	1	0	0	0	0	0	0	0	0	0	0
F6	1	1	1	1	1	1	1	0	0	0	1*	1*	0	0	0
F7	1	1	1	1	1	1*	1	0	1*	0	1	1	1*	1*	1*
F8	1	1	1	1	1	1	1	1	1*	0	1	1	1	1	1
F9	1	1	1	1	1*	1	1	1	1	0	1	1*	1*	1*	1*
F10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F11	1	1	1	1	1	1	1*	1*	1	0	1	1*	1	1	1
F12	1*	1	1	1	1	1	1*	1*	1	0	1	1	1	1	1
F13	1	1	1	1	1	1	1	1*	1	0	1*	1*	1	0	0
F14	1	1	1	1	1	1	1	1*	1	0	1*	1*	1	1	0
F15	1	1	1	1	1	1	1	1*	1	0	1*	1*	1	1	1

In order to have a fully transitive matrix, every 0 is assessed and all possible transitive relations are assimilated and denoted as 1* in Table 4 as final reachability matrix.
Transitive matrix is segregated with the help of classical iteration method used to partition binary matrices presented as Table A1-A9 (*Annexure* IV). After partitioning of transitive matrix (Table *4*) using the concept of permutation a conical matrix is obtained as Table A10 of Annexure IV. ISM model is created from hierarchical partitioning aforementioned (Figure 2).

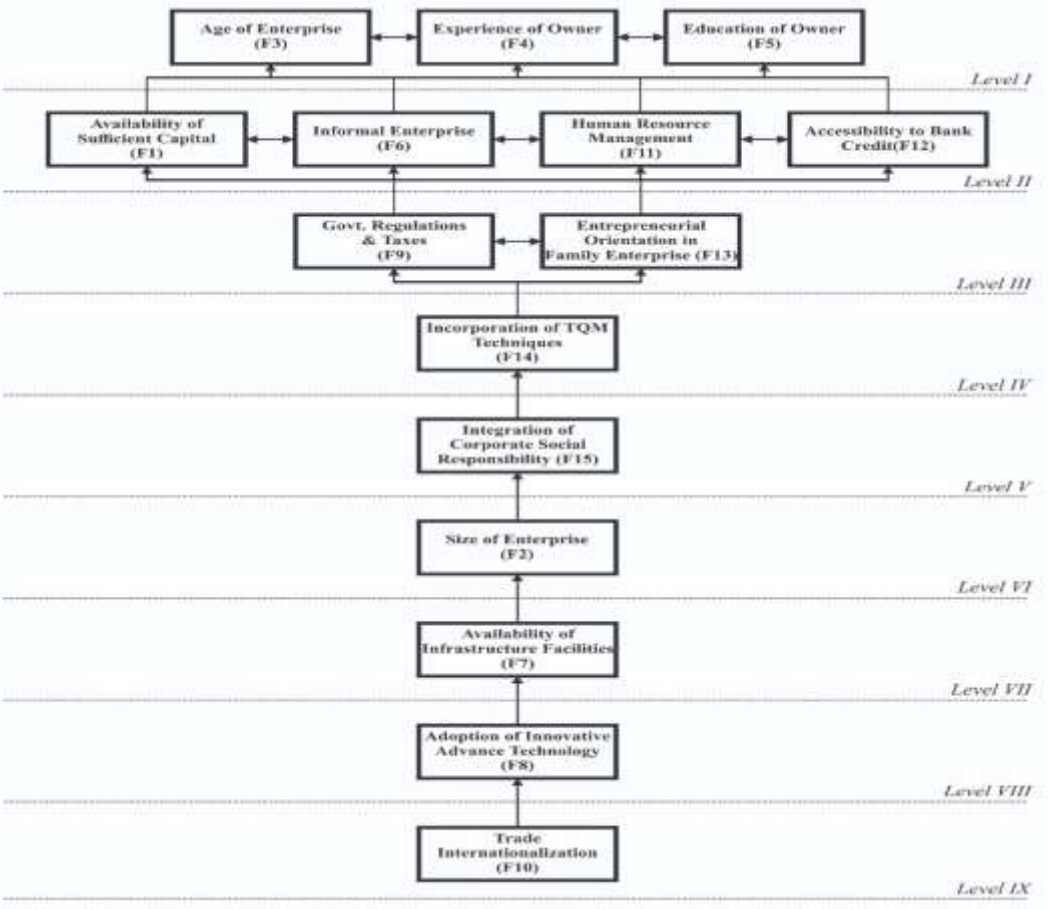

Figure 2: ISM Model

Close observation of hierarchical model developed through ISM reveals that factors coded as F3, F4 & F5 occupy *Level I* (top), F1, F6, F11 & F12 occupy *Level II,* F9 & F13 *Level III,* F14 *Level IV,* F15 *Level V,* F2 *Level VI,* F7 *Level VII,* F8 *Level VIII* and factor coded as F10 occupy *Level IX* of the model.

MICMAC Analysis: MICMAC is a standalone structural methodology that can verify the results of ISM and is also used to classify the factors into four quadrants viz: independent, autonomous, dependent and linkage. We used scale centric approach to divide the Cartesian plane.

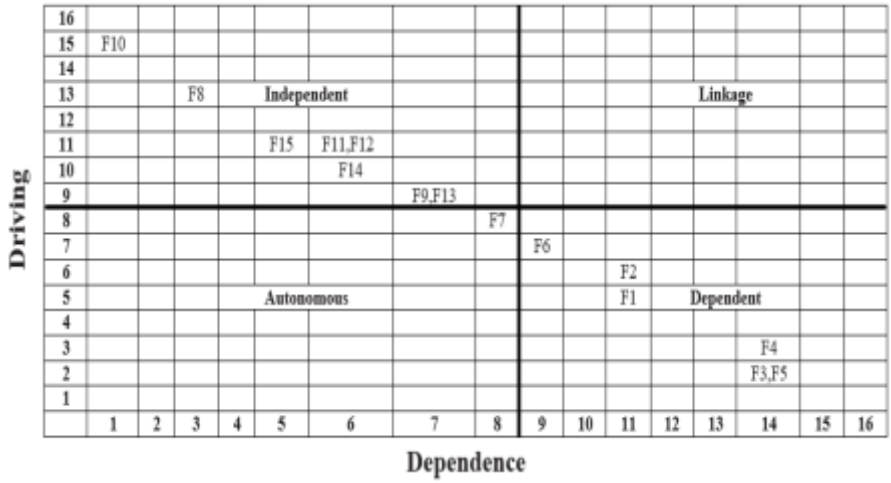

Figure 3: MICMAC Analysis

By observation of MICMAC diagram (Figure 3) it is found that F10 is categorized as the most important independent factor along with F8, F9, F11, F12, F13, F14, and F15. F1, F2, F3, F4, F5, and F6 are categorized as dependent factors. F7 is categorized as autonomous. There is no factor as such categorized in linkage.

Results: The importance and contribution of SMEs towards economic growth and progression of developing countries cannot be denied. The SMEs sector is facing a lot of problems that need to be focused upon by both government and private sector to have the maximum benefits out of it. Hence, it is extremely important to investigate the factors that can affect the growth of SMEs. For this purpose, we explored available literature, statistical reports and official websites to extract factors that can serve the purpose. The results of literature along with experts' opinion show that there are fifteen most important factors concerning the phenomenon that need to be studied. Results of ISM show that age of enterprise (F3), experience of owner (F4) and education of owner (F5) occupy *Level I* (i.e. top level of the model). Availability of sufficient capital (F1), informal enterprise (F6), human resource management (F11) and accessibility to bank credit (F12) occupy *Level II*. Accordingly, government regulations & taxes (F9) and entrepreneurial orientation in family enterprise (F13) occupy *Level III*, incorporation of TQM techniques (F14) *Level IV*, integration of corporate social responsibility (F15) *Level V*, size of enterprise (F2) *Level VI*, availability of infrastructure facilities (F7) *Level VII*, and adoption of innovative advance technology (F8) *Level VIII*, whereas, trade internationalization (F10) occupy *Level IX* (bottom level of the model). The results of MICMAC reveal that trade internationalization (F10) is categorized as the most important independent factor along with innovative advance technology (F8), government regulations & taxes (F9), human resource management (F11), accessibility to bank credit (F12), entrepreneurial orientation in family enterprise (F13), incorporation of TQM techniques (F14), and integration of corporate social responsibility (F15). Availability of sufficient capital *(*F1), size of enterprise (F2), age of enterprise (F3), experience of owner (F4), education of owner (F5), and informal enterprise (F6) are categorized as dependent factors. Availability of infrastructure facilities (F7) is categorized as autonomous. There is no factor as such categorized as linkage. The summarized results of methodologies are represented juxtaposed in Table 5.

Table 5: Positioning of Factors

No	Factors	Driving	Dependence	Effectiveness	Cluster	Level
F1	Availability of sufficient capital	12	12	0	Dependent	*II*
F2	Size of enterprise	12	12	0	Dependent	*VI*
F3	Age of enterprise	3	15	-12	Dependent	*I*
F4	Experience of owner	3	15	-12	Dependent	*I*
F5	Education of owner	3	15	-12	Dependent	*I*
F6	Informal enterprise	9	12	-3	Dependent	*II*
F7	Availability of infrastructure facilities	13	10	3	Autonomous	*VII*
F8	Adoption of innovative advance technology	14	8	6	Independent	*VIII*
F9	Government regulations & taxes	14	11	3	Independent	*III*
F10	***Trade internationalization***	***15***	***1***	***14***	***Independent***	***IX***
F11	Human resource management	14	12	2	Independent	*II*
F12	Accessibility to bank credit	14	12	2	Independent	*II*
F13	Entrepreneurial orientation in family enterprise	12	11	1	Independent	*III*
F14	Incorporation of TQM techniques	13	10	3	Independent	*IV*
F15	Integration of corporate social responsibility	14	9	5	Independent	*V*

Table 5 shows that 'trade internationalization F10' grey, bold and italicized is the most critical and key factor with maximum driving power to affect growth potential of SMEs.

5. Discussion

Discussion is divided into five parts i.e. discussion on: results, contrasting the contemporary literature with current study, implications, limitation and future directions. Results of literature show that there are fifteen most important factors having potential to influence SMEs' growth. A refined list of these factors is prepared as aforementioned in literature section and vide in *Annexure I, Annexure II and Annexure III* and resultant Table 1. Results of ISM as mentioned in result section i.e. factors occupying different levels can be understood and interpreted as that the factors on top level of model *(Level I)* are least critical, that on *Level II/III/IV* are relative to the *Level I* are more critical but still less critical to other ones. Factors occupying *Level V/VI/VII* are moderate critical, whereas, factors occupying *Level VIII/X* (bottom) levels are considered as the most critical factors for growth of SMEs. All the factors at Levels I/II/III have at level two way inter-relationships among them. The results of MICMAC as aforementioned reveal that F10 is categorized as the most important independent factor along with F8, F9, F11, F12, F13, F14, and F15. F1, F2, F3, F4, F5, and F6 are categorized as dependent factors. F7 is categorized as autonomous. There is no factor as such categorized as linkage. The factors that are categorized as in independent have high driving but low dependence power and have the capability to drive the other factors and the factors that are categorized as dependent they have low driving but high dependence power and are driven by others or depend on other factors. Factors that are categorized as autonomous are disconnected from the system may be deleted from analysis but at the same time they might have few powerful connections with other factors as well and have a rationale to be included in the analysis. Factors categorized as linkage have high driving and dependence power and are unsettled, unbalanced and agile in nature. Therefore, the results of the study must be according understood and interpreted. The study in hand is different from existing studies in approach, method of data collection, method of modelling, analysis and results. The current study is unique in nature,

however, it is comparable with some of the studies from contemporary literature. Therefore, it is attempted to generate a contrast thereof (Table 6).

Table 6: Current Study Comparison with Contemporary Studies

Sr.	Studies	Focus	Variables	Methodology	Results
1	Current	Investigating the relationships of factors affecting growth of SMEs	30	ISM and MICMAC	Trade internationalization is the most critical and key factor.
2	Khurana et al. (2021)	Determine essential Critical Success Factors (CSFs) to implement Sustainable Orientated Innovation (SOI) practices in Micro, SMEs (MSMEs)	8	Analytical hierarchy process	Results bolstered that government initiatives, top management support and financial resources are the most essential factors substantially contributing in implementing SOI practices in MSMEs.
3	Qalati et al. (2021)	Social media adoption and its effect on Small and Medium-sized Enterprises (SMEs).	13	PLS-SEM	There is a direct positive relationship between technology-organizational-environmental constructs, adoption of social media and SMEs performance
4	Sarvari et al. (2021)	Critical Success Factors (CSFs) for managing construction SMEs in developing countries of Middle East	63	Mixed research methods- Delphi survey, statistical analysis (Kendall coefficient of concordance, Kolmogorov-Smirnov test, t-test, Friedman test), factor analysis	Results showed that all CSFs ranged between medium and high and are significant for managing construction SMEs in developing countries of the Middle East. Likewise, in CSFs categories, technology with an average (MS) of 6.38 was rated the most significant CSFs category.
5	Yáñez-Araque et al. (2021)	Relationship between Corporate Social Responsibility (CRS), economic performance and Micro, Small and Medium Sized Enterprises (MSMEs)	9	PLS-SEM	CSR targets economic performance simultaneously when taking into account the social, economic and environmental dimensions for family and nonfamily MSMEs.

Khurana et al. (2021) determined Critical Success Factors (CSFs) to implement Sustainable Orientated Innovation (SOI) practices in Micro, SMEs (MSMEs) by taking eight variables. They used analytical hierarchy process and concluded that government and top management support along with provision of sufficient financial resources contributes significantly towards implementation of SOI practices in MSMEs. Similarly, Sarvari et al. (2021) explored Critical Success Factors (CSFs) for managing construction SMEs in developing countries of Middle East by taking 63 variables. They opted for mixed research methods- Delphi survey, statistical analysis (Kendall coefficient of concordance, Kolmogorov-Smirnov test, t-test, Friedman test), and factor analysis to conclude that all CSFs ranged between medium and high and are significant for managing construction SMEs in developing countries of the Middle East. Qalati et al. (2021) investigated social media adoption and its effect on Small and Medium-sized Enterprises (SMEs) by considering thirteen variables. The results of PLS-SEM showed a direct positive relationship between technology-organizational-environmental constructs, adoption of social media and SMEs performance. Yáñez-Araque et al. (2021) used PLS-SEM to examine relationship between Corporate Social Responsibility (CSR), economic performance in Micro, Small and Medium Sized Enterprises (MSMEs) and concluded that CSR targets economic performance by taking into account the social, economic and environmental dimensions for family and nonfamily MSMEs. In contrast to all these studies, the current study investigates the relationships of factors affecting growth of SMEs by considering thirty factors using ISM and MICMAC and concluded trade internationalization as the most critical factor. This study has a lot of theoretical and practical implications for academicians, researchers, industrialists, government and community at large. By focusing on the factors of growth in this study, industry and companies can expand their trade volume and thus will benefit from more profit. Government can use the results of this study to facilitate SMEs by focusing on the most critical factor identified and thus in turn not only can help growth of SMEs but also will increase SMEs contribution to GDP. This is helpful for researchers as they can use the factors identified and framework presented in this study for future studies. For community at large it is helpful in understanding the importance of SMEs along with the contributing factors of growth. This study has meaningful theoretical contributions as well. It aims to extend the boundaries of current knowledge by providing a framework regarding the factors under study. The results are sufficient and logical to fill the gap as mentioned in introduction section of the study. The scope of the study is limited in term of generalizability as it has used limited data set and small number of experts in panel. ISM is best suited for identification of relationships among factors but quantification of the relationship cannot be ascertained by it. The results are based on the perception of experts from within Pakistan. The research can be extended by using a comprehensive list of factors affecting growth of SMEs. The size of the panel may be increased. This

research can be replicated in other research setting by taking international expert's perspectives from different countries. It is also noteworthy to check the validity of the results obtained by using other statistical techniques. The researchers can also use other techniques to quantify the relationships. This study has contributed to the body of literature by way of list of factors critical to growth of SMEs, ISM model, MICMAC diagram, new information about the relationships of factors affecting growth of SMEs and a framework for future research by way of indicating independent and dependent factors.

6. Conclusion

SMEs are one of the major contributors of growth to economy and providers of employment opportunities to a large number of population. This research is of great value as it is going to help government and industry in focusing the factors that are supportive to conducive environment for growth of SMEs sector (i.e. the backbone of economies). This study is to expound the environment of SMEs by way of identifying, ranking and classifying factors that affect growth of SMEs. Results of literature show that there are fifteen important factors concerning the phenomenon that need to be studied. The extracted factors were then analyzed and classified using ISM and MICMAC respectively. Results of ISM reveal that factors coded as F3, F4 & F5 occupy *Level I* (top), F1, F6, F11 & F12 occupy *Level II*, F9 & F13 *Level III*, F14 *Level IV*, F15 *Level V*, F2 *Level VI*, F7 *Level VII*, F8 *Level VIII* and factor coded as F10 occupy *Level IX* of the model. The factor namely 'trade internationalization F10' grey, bold and italicized in Table 5 is the most critical and key factor with maximum driving power to affect growth potential of SMEs. The results of MICMAC show that F10, F8, F9, F11, F12, F13, F14, and F15 are categorized as independent factor. Whereas, F1, F2, F3, F4, F5, and F6 are categorized as dependent factors. F7 is the only factor categorized as autonomous with no factor as such categorized as linkage. In nutshell, it is a seminal study useful for different stakeholders in wide variety of manners by providing new insights.

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Annexure I

Initial List of Factors Extracted from Literature

Sr.	Factor No	References
1.	Size of Enterprise	(Quartey et al., 2017)
2.	Age of Enterprise	(Pilar, et al., 2018)
3.	Experience of owner	(Isaga, 2015)
4.	Education of owner	(Isaga, 2015)
5.	Availability of infrastructure facilities	(Ndiaye et al., 2018)
6.	Availability of sufficient capital	(Rossi, 2014)
7.	Entrepreneurship in family SME	(Arzubiaga et al., 2018; Flamini et al., 2021)
8.	Informality	(Ndiaye et al., 2018; Quartey et al., 2017)
9.	Human Resource Management	(Ndiaye et al., 2018; Pilar et al., 2018)
10.	Trade Internationalization	(Ndiaye et al., 2018; Pilar et al., 2018; Bagheri et al., 2019; Deng et al., 2018)
11.	Corporate Social Responsibility	(Ortiz-Avram et al., 2018; İyigün, 2015)
12.	Bank Credit	(Iwanicz-Drozdowska et al., 2018; Degryse et al., 2018; Quartey et al., 2017)
13.	Incorporation of TQM Techniques	(Toke & Kalpande, 2020)
14.	Government Regulations and Taxes	(Pilar et al., 2018; Ndiaye et al., 2018)
15.	Innovation and Technology	(Aboelmaged & Hashem, 2019; Cenamor et al., 2019)
16.	Types of Products and Service	(Philip et al., 2010)
17.	Supply Chain Management	(Si et al., 2018)
18.	Social Relations	(Si et al., 2018)
19.	Labor Productivity	(Ndiaye et al., 2018)
20.	Ownership Structure	(Obasan, 2016)
21.	Gender of Owner	(Roomi et al., 2009)
22.	Price Determination	(Sije & Oloko, 2013)
23.	Contracting with clients	(Jaafar & Abdul-Aziz, 2005)
24.	Collective Action	(Battisti & Perry, 2015)
25.	Orientation of corporate culture	(Peillon et al., 2018)
26.	Credit Risk	(Aysan & Disli, 2019)
27.	Digital Platforms	(Cenamor et al., 2019)
28.	Green Innovation Adoption	(Aboelmaged & Hashem, 2019).
29.	Mobile Commerce Adoption	(Rana et al., 2019)
30.	Tax Payments	(Van & Cuong, 2019).

Annexure II

Experts' Approval Vote Sheet

Sr.	Factor	Experts' Response															Votes
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
1	Size of Enterprise	√	√	√	*X*	*X*	√	*X*	√	√	*X*	*X*	√	√	*X*	√	9
2	Age of Enterprise	*X*	√	√	√	*X*	*X*	*X*	√	*X*	√	√	*X*	√	√	*X*	8
3	Experience of owner	*X*	√	√	√	√	*X*	√	√	√	*X*	√	√	√	*X*	*X*	10
4	Education of owner	√	*X*	*X*	√	√	√	√	*X*	*X*	*X*	*X*	√	√	√	√	9
5	Availability of infrastructure facilities	√	√	√	√	*X*	√	√	√	√	*X*	√	√	√	√	√	13
6	Availability of sufficient capital	*X*	*X*	√	√	√	*X*	*X*	√	√	√	√	*X*	√	√	√	10
7	Entrepreneurship in family SME	√	√	√	√	√	*X*	√	√	√	√	*X*	*X*	√	*X*	√	11
8	Informality	*X*	*X*	√	√	√	√	√	√	√	*X*	√	√	√	√	√	12
9	Human Resource Management	√	√	√	√	*X*	*X*	√	√	√	*X*	√	√	√	√	*X*	13
10	Trade Internationalization	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	15
11	Corporate Social Responsibility	*X*	√	√	√	√	√	√	√	*X*	*X*	√	√	√	√	√	12
12	Bank Credit	√	*X*	√	√	√	√	√	√	*X*	√	*X*	√	*X*	√	√	11
13	Incorporation of TQM Techniques	*X*	√	*X*	*X*	*X*	√	√	√	√	√	*X*	√	√	√	√	10
14	Government Regulations and Taxes	*X*	√	*X*	√	√	√	√	√	√	*X*	√	*X*	*X*	√	*X*	9
15	Innovation and Technology	√	√	√	√	√	√	√	√	*X*	√	√	√	√	√	*X*	13
16	Types of Products and Service	*X*	*X*	*X*	√	√	√	√	*X*	*X*	√	*X*	√	*X*	*X*	√	7
17	Supply Chain Management	*X*	√	*X*	*X*	√	*X*	*X*	*X*	√	*X*	*X*	√	*X*	√	√	6
18	Social Relations	*X*	*X*	√	*X*	*X*	*X*	√	*X*	*X*	*X*	√	*X*	*X*	√	*X*	4
19	Labor Productivity	*X*	√	*X*	*X*	*X*	*X*	*X*	√	√	√	√	*X*	√	√	*X*	7
20	Ownership Structure	*X*	*X*	*X*	√	*X*	*X*	√	*X*	*X*	*X*	*X*	√	*X*	*X*	*X*	3
21	Gender of Owner	√	*X*	*X*	√	√	*X*	*X*	*X*	√	√	*X*	*X*	*X*	*X*	*X*	5
22	Price Determination	*X*	*X*	*X*	√	√	√	√	*X*	*X*	*X*	*X*	*X*	√	√	*X*	6
23	Contracting with clients	*X*	*X*	*X*	*X*	*X*	*X*	√	√	√	√	*X*	√	√	√	*X*	7
24	Collective Action	√	*X*	*X*	*X*	√	*X*	*X*	*X*	√	*X*	√	*X*	*X*	*X*	√	5
25	Orientation of corporate culture	*X*	√	*X*	√	*X*	*X*	*X*	√	*X*	*X*	*X*	√	*X*	*X*	*X*	4
26	Credit Risk	*X*	*X*	√	*X*	√	√	*X*	*X*	√	√	*X*	*X*	√	*X*	√	7
27	Digital Platforms	√	*X*	*X*	√	*X*	*X*	√	*X*	*X*	√	*X*	*X*	*X*	√	*X*	5
28	Green Innovation Adoption	*X*	√	*X*	*X*	*X*	*X*	*X*	√	*X*	*X*	√	*X*	*X*	*X*	√	4
29	Mobile Commerce Adoption	√	*X*	*X*	√	*X*	√	*X*	*X*	√	*X*	*X*	√	*X*	√	*X*	6
30	Tax Payments	*X*	√	√	*X*	√	√	*X*	*X*	√	√	*X*	*X*	√	*X*	*X*	7

Annexure III

Brief Profile of the Experts on Panel

Expert	Organization	Designation	Area of expertise	Qualification	Experience (in Years)
1	A large size public sector commercial bank	Head Commercial & Retail Risk	Lending to SMEs	Graduation in Cost & Management Accounting	25
2	Medium size shoe manufacturing company	Proprietor	Managing shoe manufacturing enterprise	Post- Graduation on in Business Administration	20
3	A very successful medium size enterprise exporting textile made-ups	Managing Director	Managing exporter enterprise of textile made-ups	Master of Arts in Administrative Sciences	25
4	A large size Islamic commercial bank having large credit exposure to SMEs in Pakistan	Credit Analyst	Lending to SMEs	Master in Business Administration	10
5	A large private sector Modaraba (Islamic financial institution) having major portfolio in SMEs	Trade Manager	Managing import/export documents SMEs	Master in Business Administration	15
6	Central bank of Pakistan SME division	Director	Formulation of policies & regulations for SMEs	Master in Business Administration	15
7	Known/successful small embroidery enterprise	Proprietor	Managing small embroidery enterprise	Graduation in Cost & Management Accounting	13
8	A large size public sector commercial bank	Credit Risk Analyst	Lending to SMEs	Master in Business Administration	12
9	A large size public sector commercial bank	Unit Head Policy	Policy making for SMEs	Master in Business Administration	16
10	A large size private sector commercial bank	Regional Chief	Lending to SMEs	Master in Business Administration	20
11	Large public sector engineering university	Professor	Active researcher in the area of SMEs	Doctor of Philosophy	15
12	Public at Large (individual considered to be representative)	Individual	Consumer of SME products	Master in Business Administration	20
13	Federal government initiative to promote	Director	Mentoring Entrepreneurships	Master in Business Administration	14
14	A customer of SMEs	Individual	Dealing with SMEs	Master in Business Administration	11
15	A medium size textile manufacturing enterprise	Proprietor	Owning small enterprise	University Graduate in Arts	11

Annexure IV

Table A1: Level Partitioning-Level 1

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
1	1,2,3,4,5,6,9,11,12,13,14,15	1,2,6,7,8,9,10,11,12,13,14,15	1,2,6,9,11,12,13,14,15	
2	1,2,3,4,6,9,11,12,13,14,15	1,2,6,7,8,9,10,11,12,14,	1,2,6,9,11,12,14	
3	3,4,5,	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	3,4,5,	*I*
4	3,4,5,	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	3,4,5,	*I*
5	3,4,5,	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	3,4,5,	*I*
6	1,2,3,4,5,6,7,11,12,	1,2,6,7,8,9,11,12,14,15	1,2,6,7,11,12	
7	1,2,3,4,5,6,7,9,11,12,13,14,15	6,7,8,9,10,11,12,13,14,15,	6,7,9,11,12,13,14,15	
8	1,2,3,4,5,6,7,8,9,11,12,13,14,15	8,9,10,11,12,13,14,15	8,9,11,12,13,14,15	
9	1,2,3,4,5,6,7,8,9,11,12,13,14,15	1,2,7,8,9,10,11,12,13,14,15	1,2,7,8,9,11,12,13,14,15	
10	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	10	10	
11	1,2,3,4,5,6,7,8,9,11,12,13,14,15	1,2,6,7,8,9,10,11,12,13,14,15	1,2,6,7,8,9,11,12,13,14,15	
12	1,2,3,4,5,6,7,8,9,11,12,13,14,15	1,2,6,7,8,9,10,11,12,13,14,15	1,2,6,7,8,9,11,12,13,14,15	
13	1,2,3,4,5,6,7,8,9,11,12,13,	1,2,7,8,9,10,11,12,13,14,15	1,2,7,8,9,11,12,13,	
14	1,2,3,4,5,6,7,8,9,11,12,13,14	1,2,7,8,9,10,11,12,14,15	1,2,7,8,9,11,12,14,	
15	1,2,3,4,5,6,7,8,9,11,12,13,14,15	1,2,7,8,9,10,11,12,15	1,2,7,8,9,11,12,15	

Table A2: Level Partitioning-Level 2

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
1	1,2,6,9,11,12,13,14,15	1,2,6,7,8,9,10,11,12,13,14,15	1,2,6,9,11,12,13,14,15	*II*
2	1,2,6,9,11,12,13,14,15	1,2,6,7,8,9,10,11,12,14,	1,2,6,9,11,12,14	
6	1,2,6,7,11,12,	1,2,6,7,8,9,11,12,14,15	1,2,6,7,11,12	*II*
7	1,2,6,7,9,11,12,13,14,15	6,7,8,9,10,11,12,13,14,15,	6,7,9,11,12,13,14,15	
8	1,2,6,7,8,9,11,12,13,14,15	8,9,10,11,12,13,14,15	8,9,11,12,13,14,15	
9	1,2,6,7,8,9,11,12,13,14,15	1,2,7,8,9,10,11,12,13,14,15	1,2,7,8,9,11,12,13,14,15	
10	1,2,6,7,8,9,10,11,12,13,14,15	10	10	
11	1,2,6,7,8,9,11,12,13,14,15	1,2,6,7,8,9,10,11,12,13,14,15	1,2,6,7,8,9,11,12,13,14,15	*II*
12	1,2,6,7,8,9,11,12,13,14,15	1,2,6,7,8,9,10,11,12,13,14,15	1,2,6,7,8,9,11,12,13,14,15	*II*
13	1,2,6,7,8,9,11,12,13,	1,2,7,8,9,10,11,12,13,14,15	1,2,7,8,9,11,12,13,	
14	1,2,6,7,8,9,11,12,13,14	1,2,7,8,9,10,11,12,14,15	1,2,7,8,9,11,12,14,	
15	1,2,6,7,8,9,11,12,13,14,15	1,2,7,8,9,10,11,12,15	1,2,7,8,9,11,12,15	

Table A3: Level Partitioning-Level 3

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
2	2,9,13,14,15	2,7,8,9,10,14,	2,9,14	
7	2,7,9,13,14,15	7,8,9,10,13,14,15,	7,9,13,14,15	
8	2,7,8,9,13,14,15	8,9,10,13,14,15	8,9,13,14,15	
9	2,7,8,9,13,14,15	2,7,8,9,10,13,14,15	2,7,8,9,13,14,15	*III*
10	2,7,8,9,10,13,14,15	10	10	
13	2,7,8,9,13,	2,7,8,9,10,13,14,15	2,7,8,9,13,	*III*
14	2,7,8,9,13,14	2,7,8,9,10,14,15	2,7,8,9,14,	
15	2,7,8,9,13,14,15	2,7,8,9,10,15	2,7,8,9,15	

Table A4: Level Partitioning-Level 4

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
2	2,14,15	2,7,8,10,14,	2,14	
7	2,7,14,15	7,8,10,14,15,	7,14,15	
8	2,7,8,14,15	8,10,14,15	8,14,15	
10	2,7,8,10,14,15	10	10	
14	2,7,8,14	2,7,8,10,14,15	2,7,8,14,	*IV*
15	2,7,8,14,15	2,7,8,10,15	2,7,8,15	

Table A5: Level Partitioning-Level 5

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
2	2,15	2,7,8,10,	2,	
7	2,7,15	7,8,10,15,	7,15	
8	2,7,8,15	8,10,15	8,15	
10	2,7,8,10,15	10	10	
15	2,7,8,15	2,7,8,10,15	2,7,8,15	*V*

Table A6: Level Partitioning-Level 6

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
2	2	2,7,8,10	2	*VI*
7	2,7	7,8,10	7	
8	2,7,8	8,10	8	
10	2,7,8,10	10	10	

Table A7: Level Partitioning-Level 7

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
7	7	7,8,10	7	*VII*
8	7,8	8,10	8	
10	7,8,10	10	10	

Table A8: Level Partitioning-Level 8

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
8	8	8,10	8	*VIII*
10	8,10	10	10	

Table A9: Level Partitioning-Level 9

Factor	Reachability Set	Antecedence Set	Intersection Set	Level
10	10	10	10	*IX*

Table A10: Conical Matrix

	F3	F4	F5	F1	F6	F11	F12	F9	F13	F14	F15	F2	F7	F8	F10
F3	1	1*	1	0	0	0	0	0	0	0	0	0	0	0	0
F4	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
F5	1*	1	1	0	0	0	0	0	0	0	0	0	0	0	0
F1	1	1	1	1	1*	1*	1	1*	1*	1*	1*	1*	0	0	0
F6	1	1	1	1	1	1*	1*	0	0	0	0	1	1	0	0
F11	1	1	1	1	1	1	1*	1	1	1	1	1	1*	1*	0
F12	1	1	1	1*	1	1	1	1	1	1	1	1	1*	1*	0
F9	1	1	1*	1	1	1	1*	1	1*	1*	1*	1	1	1	0
F13	1	1	1	1	1	1*	1*	1	1	0	0	1	1	1*	0
F14	1	1	1	1	1	1*	1*	1	1	1	0	1	1	1*	0
F15	1	1	1	1	1	1*	1*	1	1	1	1	1	1	1*	0
F2	1	1	1	1	1*	1*	1	1*	1*	1*	1*	1	0	0	0
F7	1	1	1	1	1*	1	1	1*	1*	1*	1*	1	1	0	0
F8	1	1	1	1	1	1	1	1*	1	1	1	1	1	1	0
F10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Annexure V

Summarized Questionnaire

Instructions: 1) contextual relationship = leads to, 2) fill *ij* part (white part) only, 3) enter *V* when the row influences the column, 4) enter *A* when the column influences the row, 5) enter *O* when there is no relation between the row and the column and 6) enter *X* when row and column influence

Sr.	Factors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Availability of Sufficient capital															
2	Size of Enterprise															
3	Age of Enterprise															
4	Experience of owner															
5	Education of owner															
6	Informal Enterprise															
7	Availability of Infrastructure facilities															
8	Adoption of innovative advance Technology															
9	Govt. Regulations & Taxes															
10	Trade Internationalization															
11	Human Resource Management															
12	Accessibility to Bank Credit															
13	Entrepreneurial Orientation in family enterprise															
14	Incorporation of TQM Techniques															
15	Integration of Corporate Social Responsibility															