ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

Annual Methodological Archive Research Review

http://amresearchreview.com/index.php/Journal/about

Hira Tanweer Butt[1], Tehmina Fiaz Qazi[2], Abdul Aziz Khan Niazi[3], Sara Atif Syed[4], Abdul Basit[5], Maryam Aziz[6]

Structural Analysis of Barriers Faced by Entrepreneurships in Pakistan

Hira Tanweer Butt
Department of Management Sciences, University of Engineering and Technology, Lahore, Pakistan, hira.tanweer@yahoo.com
Tehmina Fiaz Qazi
Hailey College of Banking and Finance, University of the Punjab, Lahore, Pakistan, tehmina.qazi@gmail.com
Abdul Aziz Khan Niazi
Department of Management Sciences, University of Engineering and Technology, Lahore, Pakistan, azizniazi@uet.edu.pk
Sara Atif Syed
Department of Management Sciences, University of Engineering and Technology, Lahore, Pakistan, sara.atif.syed@gmail.com
Abdul Basit
Lahore Institute of Science & Technology, Lahore, Pakistan. abasit_shahbaz@yahoo.com
Maryam Aziz
Institute of Business and Management, University of Engineering and Technology, Lahore, Pakistan, maryamaziz05@gmail.com

Abstract

The study aims to expound and analyze the barriers faced by entrepreneurship in Pakistan. The design of the study is a review of the literature, primary data curation, modelling, and analysis of the phenomenon. The methodology is Interpretive Structural Modeling (ISM) and Matriced' Impacts Croise's Multiplication Appliquée a UN Classement (MICMAC). The population understudy is the current and prospective entrepreneurs and all other stakeholders in entrepreneurship. The sampling design of the study is the non-probability-based type of focus group (i.e. a panel of experts purposively selected in the context of the study). Data are collected through a matrix-type questionnaire in the field setting. The literature discourse results show that twenty-five major barriers hamper entrepreneurship in Pakistan. The results of ISM show that the barriers namely low initial profit, lack of formal guidelines, long startup time, lack of good curriculum, lack of self-efficacy, lack of formal learning, lack of structural support, lack of entrepreneurial institutes, lack of awareness, lack of interest, conservative corporate social norms, lack of capital cost, lack of entrepreneurs, lack of government interest, gender biases occupy Level I of the ISM model. High operating costs, corporate culture of the country, operational and market risk, lack of perceived desirability, and lack of public concerns occupy Level II. Lack of innovation, lack of support for start-ups, and lack of resources occupy Level III. Lack of academic courses related to entrepreneurship and lack of support for entrepreneurship occupy Level IV. Whereas, the barrier namely lack of academic courses related to entrepreneurship occupies Level V. Results of MICMAC show that lack of

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

public concerns and gender biases fall in the autonomous cluster. Lack of formal learning, lack of entrepreneurial institutes, lack of awareness, lack of entrepreneurs, conservative corporate social norms, and lack of capital cost fall in the dependent cluster. Lack of innovation, low initial profit, lack of formal guidelines, long startup time, lack of good curriculum, lack of self-efficacy, lack of structural support, lack of interest, lack of support for start-ups, lack of support for entrepreneurship, lack of perceived desirability and lack of government interest fall in the linkage cluster. The lack of academic courses related to entrepreneurship, high operating costs, the corporate culture of the country, operational and market risk, and lack of resources fall in the independent cluster. This is an original study based on realistic primary data. The results of the study provide deep insights to the stakeholders by way of identification, classification, hierarchicalization, and prioritization of the barriers that have profound practical and theoretical implications.

Keywords	Barriers, Entrepreneurship, Pakistan, MICMAC, ISM, Modelling

INTRODUCTION

Entrepreneurship is considered the hallmark of economies nowadays. It has become imperative to take the initiative in social, business, and industrial entrepreneurship (Malokani et al., 2024). It is gaining day-by-day importance for the nations (Ali, 2015; Abdelwahed et al., 2023; Rath, 2024). Therefore, it has emerged as an emergent area of research and study in academia. Different aspects of entrepreneurship are high on the agenda of academic research (Nasir, 2019; Tanveer et al., 2021). Stakeholder communities include current entrepreneurs, potential entrepreneurs, academia, industry, society at large, the international community, trade associations, and a plethora of different governmental agencies and departments. They are keen to embark on the current entrepreneurial era. This urge has surged all over the world but it is more critical and severe in developing countries (Bashir & Rashid, 2019; Yakubu, 2021; Das, 2022; Malokani et al., 2024; Abbas & Uddin, 2025). Pakistan is also trying to go on board the ferry of entrepreneurship (Zahid, 2018; Altaf, 2023; Irfan, et al. 2023; Zaidi, et al., 2023; Shahabuddin & Ali, 2024; Shahzad et al., 2025). The work has already started at all levels, particularly in academia, governmental quarters, and individual levels. These stakeholders are striving to make the environment conducive for entrepreneurship. Academia is aligned with current governmental efforts to remove the obstacles hampering the entrepreneurial processes (Perveez, 2019; Tanveer et al., 2021; Audi et al., 2021; Ahmed & Rua, 2024). It is identifying obstacles and putting forward the solutions thereof, apart from generating and illuminating new entrepreneurship ideas (Khanin, et al., 2022; Abdur-Rauf & Raimi, 2024). The current study is designed to complement this

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

drive of academia and government. There is a research gap in many areas of entrepreneurship. The research is coming in a piecemeal and scanty way leaving a major gap to be filled by future research. Barriers faced by entrepreneurship in Pakistan are one of the critical issues that have almost been neglected so for to date (Ali & Zulfiqar, 2018; Karhan, 2019; Adjasi & Yu, 2021; Banyen, 2022; Altaf, 2023; Irfan, et al. 2023; Sadashiv, 2023; Zaidi, et al., 2023).

The current study aims to address this problem in a bit more comprehensive manner by way of ascertaining the list of barriers to entrepreneurship in Pakistan and analyzing them. Objectives of the study therefore set forth as: i) ascertain the barriers hampering entrepreneurship in Pakistan, and ii) perform structural modeling & analysis of the interrelationship and interdependencies of the barriers. The study is helpful to scholars' readership because it sets forth the order of priorities, dependencies, and hierarchies of barriers hampering entrepreneurship in Pakistan using new and different methodologies. For data elicitation, modeling, and analysis a wide range of statistical and mathematical methods is considered. It includes considering Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), Stepwise Weight Assessment Ratio Analysis (SWARA), VIekriterijumsko KOmpromisno Rangiranje (VIKOR), Decision making trial and evaluation laboratory (DEMATEL), Wavelet Analysis (WA), Structural Equation Modelling (SEM), Interpretive Structural, Modelling (ISM), Cross Impact Matrix Multiplication Applied to Classification (MICMAC), Data Envelopment Analysis (DEA), Grey Relational Analysis (GRA), Total Interpretive Structural Modelling (TISM), Modified-TISM, Polarized-TISM, Fuzzy-ISM/TISM, Analytical Hierarchy Process (AHP), Analytical Network Process (ANP), Artificial Neural Networks (ANN), as possible choices Multi-Objective Optimization on the basis of Ratio Analysis (MOORA) (Abbass, et al., 2022; Basit, et al. 2021; Niazi, et al. 2023; Qazi, et al. 2020). Using the methods in combination is also considered. ISM with MICMAC is considered to be appropriate for achieving the aforementioned objectives of the study (Qazi, et al. 2022; Nasir, 2022; Qazi, et al., 2019; Niazi, et al., 2021a; Niazi, et al., 2023c). This combination of methodologies is common, simple to use, and understandable for the readers and at the same time capable of simplifying the conundrum and complex inter-factor relationships (Maurya, 2018; Fu, et al. 2022; Niazi, et al. 2021; Tansuchat & Thaicharo, 2025). The study enhances the frontiers of knowledge of the stakeholders. The rest of the study is represented as a literature review (section 2), methodology (section 3), modeling, analysis, results, & discussion (section 4), and conclusion (section 5).

LITERATURE REVIEW

Entrepreneurship is one of the hot topics of research in the domain of business (Tanveer et al., 2021; Abdelwahed et al., 2023). An influx of research articles is being placed on record addressing dimensions of entrepreneurship in wide variety of contexts (Soomro et al., 2024). Therefore, it is found to be appropriate to take stock of contemporary research literature. Admittedly, the review of literature is helpful to set out the very outset of the study particularly to ascertain that what is already done and what needs to be done (Willy, 2018; Qazi, et al. 2022; Niazi, et al., 2021a). The review also helps to include and/or exclude the studies from reporting herein as part of this study. The review also help the researchers to avoid any objectionable duplication (Qazi, et al., 2019; Diaz & Weber,

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

2020). Therefore, a review of contemporary literature has been conducted. Since the study is focused on barriers of entrepreneurship in Pakistan (Altaf, 2023; Irfan, et al. 2023 and Zaidi, et al., 2023; Audi et al., 2025), therefore, a set of search keywords selected includes: entrepreneurship in Pakistan, entrepreneurial activities, barriers of entrepreneurship, obstacles of entrepreneurship, obstacles of business startups, hindrances of entrepreneurship, issues of entrepreneurship, bottlenecks to business startups etc. using these keywords all renowned databases (Luna & Luna, 2018; Abbass, et al., 2022; Basit, et al. 2021; Niazi, et al. 2023) concerning social sciences i.e. ScienceDirect, Wiley Blackwell, JStor, Emarald Insights, Sage, Taylor & Francis etc. are explored through advanced search feature of the databases with appropriate filters. As a result, hundreds of the research articles have been obtained and reviewed. However, only selected research papers are being reported here. The reporting criteria includes the relevance of literature to the topic. The literature is organized in tabular form (Table 1) that contains factors, description of factors and citation of the source. Since the study is about barriers in entrepreneurship in Pakistan, therefore, only literature related to the barriers have been reported here. The literature in general addresses the issues of entrepreneurship in piecemeal and there is as such hardly any study that addresses hurdles, barriers, obstacles or issues in total (Ali & Rehman, 2015; Alawamleh, et al., 2023; Barbulescu, et. al. 2024; Mohammadi, 2022; Khanin, et al., 2022; Soomro, et al. 2024; Tunio, et.al., 2021; Khalid & Abdul, 2025). Therefore, the authors find that there is a gap in the literature to that extent. However, there are many aspects that have even been over studied in this area of research. Particularly, in case of Pakistan there is lot to job to be done by the researchers. Identification of barriers of entrepreneurship in Pakistan, the structures, the dependencies, the impacts and/or influences and theory building are the fertile topics for future studies (Alidrisi, 2020). The study in hand addresses a bit of these topics. In this research, 25 factors have been identified as barriers to entrepreneurship from existing literature.

TABLE 1: LIST OF BARRIERS

Code	Factors	Description	Source
1.	Lack of academic courses related to Entrepreneurship	There are not many specializations and courses related to entrepreneurship in academia.	(Tanveer et al., 2021)
2.	Lack of innovation	People are not creative enough to understand the importance of entrepreneurship.	(Arshad et al., 2024)
3.	High operating cost	Entrepreneurship needs high operating costs initially.	(Nazir et al., 2024)
4.	Low initial Profit	Entrepreneurship may generate lower profits initially.	(Munawar et al., 2023)
5.	Lack of formal Guidelines	There are no specific guidelines for opting for entrepreneurship.	(Irfan et al., 2023)
6.	Long startup-time	Entrepreneurship takes a bit more time for startups as compared to jobs.	(Zaidi et al., 2023)
7.	Lack of good	The curriculum has become too old for the	(Tanveer et al.,

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

	curriculum	understanding of entrepreneurship.	2021)
8.	Lack of self-efficacy	People are not confident to run their own business.	(Abdelwahed et al., 2023)
9.	The corporate culture of the country	The country has a corporate culture i.e. employment is considered more safe.	(Malokani et al., 2024)
10.	Operational and Market risk	There is an operational and market risk in entrepreneurship.	(Altaf, 2023)
11.	Lack of formal learning	There is a lack of formal learning in the educational institutes about entrepreneurship.	(Tanveer et al., 2021)
12.	Lack of structural support	There is no structural support for the entrepreneurs.	(Nazir et al., 2024)
13.	Lack of entrepreneurial institutes	There are no such institutes in the country that guide or train people about entrepreneurship.	(Tanveer et al., 2021)
14.	Lack of awareness	People are not well aware of the importance and advantages of entrepreneurship.	(Abdelwahed et al., 2023)
15.	Lack of interest	People have less interest in entrepreneurship.	
16.	Lack of support for start-ups	There is a lack of support for entrepreneurship.	(Nazir et al., 2024)
17.	Lack of support for entrepreneurship	Entrepreneurship is not much supported.	(Nazir et al., 2024)
18.	Lack of perceived desirability	The rewards of entrepreneurship are considered unattractive.	(Malokani et al., 2024)
19.	Conservative corporate social norms	The society is habitual of employment.	(Malokani et al., 2024)
20.	Lack of capital cost	The strategies of entrepreneurship require human resources and high financial costs.	(Altaf, 2023)
21.	Lack of entrepreneurs	There are not enough experts in entrepreneurship.	(Abdelwahed et al., 2023)
22.	Lack of public concerns	The public is not sensitive to entrepreneurship.	(Zaidi et al., 2023)
23.	Lack of resources	Resources such as capital, technology, etc. are missing.	(Abdelwahed et al., 2023)
24.	Lack of government interest	The government has less interest in and support for entrepreneurship.	(Nazir et al., 2024)
25.	Gender Biases	Females cannot be good at entrepreneurship.	(Soomro et al., 2024)

Twenty-five barriers (Table 1) have been identified as barriers after going through the literature, therefore, the study is built on the aforementioned twenty-five barriers.

METHODOLOGY

For this study to be conducted, researchers have selected the qualitative approach because it can unearth new facets of the data and researchers coupled this approach to the

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

philosophy of interpretivism. The philosophy of interpretivism is grounded in the contextual study of factors and variables to build a narrative (Abbass et al., 2022) this feature of interpretivism makes it the most appropriate philosophy to be employed as the context holds the position of a key feature to make things more understandable for us. The fundamental principle of interpretivism is that knowledge creation is based on the interpretations and experiences of individuals (Abbass et al., 2022). Therefore, the data has been collected from existing literature and the penal of experts. These experts have in-depth knowledge of our research topic primarily because they are encountering a similar problem in one way or the other. This study contributes to the theory and the structural model which is why it has used an inductive approach. Furthermore, in Pakistan, the topic is under-researched making the inductive approach more appropriate and practical. The purpose of this research is to identify the barriers to entrepreneurship in Pakistan. Thus, by screening the existing literature; the barriers are extracted from it. These extracted barriers are investigated to identify their relationship with one another then the traced relationships have been modeled to classify them according to their dependence and driving power by using ISM. Purposive sampling is used to conduct this study as it ties both the sample and research objectives strongly which consequently improves the reliability of the result. Furthermore, this method empowers the researcher in selecting a panel of experts to conduct research that is truly based on his/her perception. The researcher, while conducting the study, opines that all stakeholders of entrepreneurship in Pakistan are a part of the population. Therefore, whoever is a stakeholder such as the owner of an entrepreneurial business, a customer, an investor, or from academia is included in the population. Due to heterogeneous elements, the research sample varies from 5 to 15 henceforth a panel of thirteen experts is on board. Moreover, the heterogeneity of the panel will help in eliminating biases and situations of ties while bringing clarity to the research. To measure the effects of barriers and their formed relationship a questionnaire based on matrix is opted. It is distributed among the panel of experts to be filled in to validate the barriers that have been extracted from the literature by the researchers. Hence, the panel of 13 experts has effectively contributed to the conduction of the research. To collect data for this study, a list of barriers has been prepared by researchers after studying currently available literature. After finalizing the list of barriers, a questionnaire of ISM has been created and the penal of experts filled the questionnaire which is of matrix type (Shaukat, et al. 2021; Qazi, et al., 2021; Qazi, et al., 2021a; Qazi, Niazi, & Basit, 2021; Niazi, et al. 2023b; Niazi, et al., 2019; Niazi, Qazi, & Basit, 2019a; Basit, et al., 2023; Niazi, et al., 2019a; Niazi, Qazi, & Basit, 2021; Basit, Qazi, & Niazi, 2020a). Then, an analysis of ISM and MICMAC is furnished on the data collected. For data analysis of this study techniques of ISM and MICMAC have been used. ISM technique is employed for creating a graphical model of the problem that is being studied (Rashid, et al., 2021; Qazi, et al., 2020a; Qazi, Niazi, & Inam, 2019; Abbass, et al., 2022a; Niazi, et al. 2023a; Niazi, Qazi, & Sandhu, 2019; Basit, et al., 2019; Basit, Qazi, & Niazi, 2020; Niazi, et al., 2020; Niazi, Qazi, & Basit, 2019b). It is accompanied by the MICMAC analysis in which a system has been divided into four clusters namely independent, autonomous, linkage, and dependent. In this research,

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

MICMAC analysis was used to identify which factors belong to which cluster. Classical procedure devised by Godet (1986) is used.

MODELING, ANALYSIS, RESULTS, AND DISCUSSION

ISM Modeling: The classical procedure of ISM modeling is used as devised by Warfield, 1973 endorsed by Warfield, 1974 and Sushil, 2017 and used by (Tariq, et al. 2023; Shaukat, et al., 2023; Qazi, et al., 2023; Qazi, et al., 2023a; Qazi, Niazi, & Basit, 2020; Niazi, et al., 2020a; Niazi, et al., 2020b; Farid, et al. 2023; Niazi, Qazi, & Basit, 2019; Basit, Khan, & Qazi, 2021; Basit, Qazi, & Khan, 2021). A Structural Self-Interpretive matrix is established by aggregating the data collected from experts using the rule minority gives way to the majority (Table 2).

TABLE 2: STRUCTURAL SELF-INTERACTION MATRIX (SSIM)

Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1		V	A	V	A	O	V	O	O	O	V	V	V	V	V	V	V	O	O	A	X	O	A	A	O
2			A	V	V	O	O	V	A	X	V	A	A	O	A	V	O	O	O	A	V	V	V	A	O
3				A	V	V	O	X	A	A	O	A	O	X	X	V	O	O	V	V	O	O	A	V	O
4					V	X	O	A	X	A	X	A	O	A	V	A	A	V	V	O	O	A	V	A	O
5						V	V	A	A	O	V	O	V	O	V	V	O	V	V	X	A	O	A	A	O
6							V	V	A	A	A	O	A	A	V	A	O	V	V	V	A	A	A	X	O
7								V	V	A	A	V	V	X	V	X	O	X	A	V	X	O	A	A	O
8									V	V	V	A	V	A	O	V	O	A	V	A	O	A	A	V	O
9										A	V	V	V	A	O	A	V	X	A	V	O	O	X	X	O
10											V	V	O	A	V	V	A	O	V	V	A	O	A	A	O
11												X	V	A	V	V	A	V	O	A	X	O	A	A	O
12													X	V	X	A	V	X	V	X	X	A	A	X	O
13														X	A	V	A	A	A	V	V	O	A	A	O
14															A	V	O	A	A	V	A	A	A	V	O
15																A	V	V	A	V	A	O	V	A	O
16																	X	V	V	V	V	V	O	V	O
17																		X	X	V	A	V	V	A	O
18																			O	O	V	A	V	V	O
19																				A	V	O	A	V	O
20																					V	A	A	A	O
21																						X	O	A	O
22																							A	A	O
23																								A	O
24																									O
25																									

SSIM (Table 2) is converted into an initial reachability matrix (Table 3) using classical rules as devised by Warfiel, 1973.

TABLE 3: INITIAL REACHABILITY MATRIX

Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

1	1	1	0	1	0	0	1	0	0	0	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0
2	0	1	0	1	1	0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0
3	1	1	1	0	1	1	0	1	0	0	0	0	0	1	1	1	0	0	1	1	0	0	0	1	0
4	0	0	1	1	1	1	0	0	1	0	1	0	0	0	1	0	0	1	1	0	0	0	1	0	0
5	1	0	0	0	1	1	1	0	0	0	1	0	1	0	1	1	0	1	1	1	0	0	0	0	0
6	0	0	0	1	0	1	1	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0
7	0	0	0	0	0	0	1	1	1	0	0	1	1	1	1	1	0	1	0	1	1	0	0	0	0
8	0	0	1	1	1	0	0	1	1	1	1	0	1	0	0	1	0	0	1	0	0	0	0	1	0
9	0	1	1	1	1	1	0	0	1	0	1	1	1	0	0	0	1	1	0	1	0	0	1	1	0
10	0	1	1	1	0	1	1	0	1	1	1	1	0	0	1	1	0	0	1	1	0	0	0	0	0
11	0	0	0	1	0	1	1	0	0	0	1	1	1	0	1	1	0	1	0	0	1	0	0	0	0
12	0	1	1	1	0	0	0	1	0	0	1	1	1	1	1	0	1	1	1	1	1	0	0	1	0
13	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	1	0	0	0	1	1	0	0	0	0
14	0	0	1	1	0	1	1	1	1	1	1	0	1	1	0	1	0	0	0	1	0	0	0	1	0
15	0	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	1	0	0	1	0	0
16	0	0	0	1	0	1	1	0	1	0	0	1	0	0	1	1	1	1	1	1	1	1	0	1	0
17	0	0	0	1	0	0	0	0	0	1	1	0	1	0	0	1	1	1	1	1	0	1	1	0	0
18	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	1	1	0	0	1	0	1	1	0
19	0	0	0	0	0	0	1	0	1	0	0	0	1	1	1	0	1	0	1	0	1	0	0	1	0
20	1	1	0	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0
21	1	0	0	0	1	1	1	0	0	1	1	1	0	1	1	0	1	0	0	0	1	1	0	0	0
22	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	0	0	1	0	1	1	1	0	0	0
23	1	0	1	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	1	1	0	0
24	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	0	1	1	1	1	1	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

The initial reachability matrix (Table 3) is converted into the transitive matrix (Table 4) by incorporating the transitive relations using the classical procedure of transitivity check.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

TABLE 4: FINAL REACHABILITY MATRIX

CODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Driving
1	1	1	1*	1	1*	1*	1	1*	1*	1*	1	1	1	1	1	1	1	1*	1*	1*	1	1*	1*	1*	0	24
2	1*	1	1*	1	1	1*	1*	1	1*	1	1	1*	1*	1*	1*	1	1*	1*	1*	1*	1	1	1	1*	0	24
3	1	1	1	1*	1	1	1*	1	1*	1*	1*	1*	1*	1	1	1	1*	1*	1	1	1*	1*	1*	1	0	24
4	1*	1*	1	1	1	1	1*	1*	1	1*	1	1*	1*	1*	1	1*	1*	1	1	1*	1*	1*	1	1*	0	24
5	1	1*	1*	1*	1	1	1	1*	1*	0	1	1*	1	1*	1	1	1*	1	1	1	1*	1*	1*	1*	0	23
6	1*	1*	1*	1	1*	1	1	1	1*	1*	1*	1*	1*	1*	1	1*	1*	1	1	1	1*	1*	1*	1	0	24
7	1*	1*	1*	1*	1*	1*	1	1	1	1*	1*	1	1	1	1	1	1*	1	1*	1	1	1*	1*	1*	0	24
8	1*	1*	1	1	1	1*	1*	1	1	1	1	1*	1	1*	1*	1	1*	1*	1	1*	1*	1*	1*	1	0	24
9	1*	1	1	1	1	1	1*	1*	1	1*	1	1	1	1*	1*	1*	1	1	1*	1	1*	1*	1	1	0	24
10	1*	1	1	1	1*	1	1	1*	1	1	1	1	1*	1*	1	1	1*	1*	1	1	1*	1*	1*	1*	0	24
11	0	1*	1*	1	1*	1	1	1*	1*	0	1	1	1	1*	1	1	1*	1	1*	1*	1	1*	1*	1*	0	22
12	1*	1	1	1	1*	1*	1*	1	1*	1*	1	1	1	1	1	1*	1	1	1	1	1	1*	1*	1	0	24
13	0	1	1*	1*	1*	1	1*	1*	1*	1*	1*	1	1	1	1*	1	1*	1*	1*	1	1	1*	0	1*	0	22

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

14	1*	1*	1	1	1*	1	1	1	1	1	1	1*	1	1	1*	1	1*	1*	1*	1	1*	0	1*	1	0	23
15	1*	1	1	1*	1*	1*	1*	1*	1*	1*	1*	1	1	1	1	1*	1	1	1*	1	1*	1*	1	1*	0	24
16	1*	1*	1*	1	1*	1	1	1*	1	1*	1*	1	1*	1*	1	1	1	1	1	1	1	1	1*	1	0	24
17	0	1*	1*	1	1*	1*	1*	1*	1*	1	1	1*	1	1*	1*	1	1	1	1	1	1*	1	1	1*	0	23
18	1*	1*	1*	1*	1*	1*	1	1	1	1*	1*	1	1	1	1*	1*	1	1	1*	1*	1	1*	1	1	0	24
19	0	1*	0	1*	1*	1*	1	1*	1	1*	1*	1*	1	1	1	1*	1	0	1	1*	1	1*	1*	1	0	21
20	1	1	0	1*	1	1*	1*	1	0	1*	1	1	1*	1*	1*	1*	1*	1*	1	1	1	0	0	1*	0	20
21	1	1*	1*	1*	1	1	1	1*	0	1	1	1	1*	1	1	1*	1	1*	1*	1*	1	1	0	1*	0	22
22	0	0	1*	1	1*	1	1*	1	1*	1*	1*	1	1*	1	1*	0	1*	1	1*	1	1	1	0	1*	0	20
23	1	1*	1	1*	1	1	1	1	1	1	1	1	1	1	1*	1*	0	1*	1	1	1*	1	1	1*	0	23
24	1	1	1*	1	1	1	1	1	1	1	1	1	1	1*	1	1*	1	1*	1*	1	1	1	1	1	0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Dependence	19	23	22	24	24	24	24	24	22	22	24	24	24	24	24	23	23	23	24	24	24	22	20	24	1	

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

The transitive matrix (Table 4) is partitioned into sub-matrices by using the interaction method (Tables 5-9).

TABLE 5: ITERATION-I

Code	Reachability Set	Antecedent Set	Intersection Set	Level
1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20, 21, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20, 21, 23, 24	
2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24	
3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 22, 23, 24	
4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	I
5	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	I
6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	I
7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	I
8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	I
9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24	

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	
11	2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	I
12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	I
13	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24	I
14	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24	I
15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	I
16	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21,23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24	
17	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24	
18	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24	
19	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24	I

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

20	1, 2, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 24	I
21	1, 2, 3, 4, 5, 6, 7, 8,10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24	I
22	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 21, 22, 23, 24	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24	
23	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 18, 19, 23, 24	
24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24	I
25	25	25	25	I

TABLE 6: ITERATION-II

Code	Reachability Set	Antecedent Set	Intersection Set	Level
1	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 18, 23	1, 2, 3, 9, 10, 16, 18, 23	
2	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 23	1, 2, 3, 9, 10, 16, 17, 18, 23	
3	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	II
9	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	II
10	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	II
16	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 23	1, 2, 3, 9, 10, 16, 17, 18, 23	
17	2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22	2, 3, 9, 10, 16, 17, 18, 22	
18	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	II
22	3, 9, 10, 16, 17, 18, 22, 23	1, 2, 3, 9, 10, 16, 17, 18, 22, 23	3, 9, 10, 16, 17, 18, 22, 23	II
23	1, 2, 3, 9, 10, 17, 18, 22	1, 2, 3, 9, 10, 16, 17, 18, 23	1, 2, 3, 9, 10, 18	

TABLE 7: ITERATION-III

Code	**Reachability Set**	**Antecedent Set**	**Intersection Set**	**Level**
1	1, 2, 16, 17, 23	1, 2, 16, 23	1, 2, 16, 23	

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

2	1, 2, 16, 17, 23	1, 2, 16, 17, 23	1, 2, 16, 17, 23	III
16	1, 2, 16, 17, 23	1, 2, 16, 17, 23	1, 2, 16, 17, 23	III
17	2, 16, 17, 23	1, 2, 16, 17	2, 16, 17	
23	1, 2, 17	1, 2, 16, 17, 23	1, 2, 17	III

TABLE 8: ITERATION-IV

Code	Reachability Set	Antecedent set	Intersection Set	Level
1	1, 17	1	1	
17	17	1, 17	17	IV

TABLE 9: ITERATION-V

Code	Reachability Set	Antecedent set	Intersection Set	Level
1	1	1	1	V

By partitioning the final reachability matrix (Table 4) into iterations (Table 5-9), a conical matrix is prepared on diagonals of which the ISM model appeared. That model is extracted in the form of a digraph. The conical matrix and digraph are optional in the procedure of ISM therefore we have omitted them here for the sake of brevity. However, an abridged form of ISM modeling is represented as Table 10.

TABLE 10: ABRIDGED PROCESS OF ISM MODELLING

Reachability

Levels	CODE	4	5	6	7	8	11	12	13	14	15	19	20	21	24	25	3	9	10	18	22	2	16	23	17	1	
Level I	4	1	1	1	1*	1*	1	1*	1*	1*	1	1	1*	1*	1*	0	1	1	1*	1	1*	1*	1*	1	1*	1*	24
	5	1*	1	1	1	1*	1	1*	1	1*	1	1	1	1*	1*	0	1*	1*	0	1	1*	1*	1	1*	1*	1	23
	6	1	1*	1	1	1	1*	1*	1*	1*	1	1	1	1*	1	0	1*	1*	1*	1	1*	1*	1*	1*	1*	1*	24
	7	1*	1*	1*	1	1	1*	1	1	1	1	1*	1	1	1*	0	1*	1	1*	1	1*	1*	1	1*	1*	1*	24
	8	1	1	1*	1*	1	1	1*	1	1*	1*	1	1*	1*	1	0	1	1	1	1*	1*	1*	1	1*	1*	1*	24

Antecedent

Driving Power

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

	11	1	1*	1	1	1*	1	1	1	1*	1	1*	1*	1	1*	0	1*	1*	0	1	1*	1*	1	1*	1*	0	22
	12	1	1*	1*	1*	1	1	1	1	1	1	1	1	1	1	0	1	1*	1*	1	1*	1	1*	1*	1	1*	24
	13	1*	1*	1	1*	1*	1*	1	1	1	1*	1*	1	1	1*	0	1*	1*	1*	1*	1*	1	1	0	1*	0	22
	14	1	1*	1	1	1	1	1*	1	1	1*	1*	1	1*	1	0	1	1	1	1*	0	1*	1	1*	1*	1*	23
	15	1*	1*	1*	1*	1*	1*	1	1	1	1	1*	1	1*	1*	0	1	1*	1*	1	1*	1	1*	1	1	1*	24
	19	1*	1*	1*	1	1*	1*	1*	1	1	1	1	1*	1	1	0	0	1	1*	0	1*	1*	1*	1*	1	0	24
	20	1*	1	1*	1*	1	1	1	1*	1*	1*	1	1	1	1*	0	0	0	1*	1*	0	1	1*	0	1*	1	20
	21	1*	1	1	1	1*	1	1	1*	1	1	1*	1*	1	1*	0	1*	0	1	1*	1	1*	1*	0	1	1	19
	24	1	1	1	1	1	1	1	1	1*	1	1*	1	1	1	0	1*	1	1	1*	1	1	1*	1	1	1	24
	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Level II	3	1*	1	1	1*	1	1*	1*	1*	1	1	1	1	1*	1	0	1	1*	1*	1*	1*	1	1	1*	1*	1	24
	9	1	1	1	1*	1*	1	1	1	1*	1*	1*	1	1*	1	0	1	1	1*	1	1*	1	1*	1	1	1*	24
	10	1	1*	1	1	1*	1	1	1*	1*	1	1	1	1*	1*	0	1	1	1	1*	1*	1	1	1*	1*	1*	24
	18	1*	1*	1*	1	1	1*	1	1	1	1*	1*	1*	1	1	0	1*	1	1*	1	1*	1*	1*	1	1	1*	24
	22	1	1*	1	1*	1	1*	1	1*	1	1*	1*	1	1	1*	0	1*	1*	1*	1	1	0	0	0	1*	0	20

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

Level III	2	1	1	1*	1*	1	1	1*	1*	1*	1*	1*	1*	1	1*	0	1*	1*	1	1*	1	1	1	1	1*	1*	24
	16	1	1*	1	1	1*	1*	1	1*	1*	1	1	1	1	1	0	1*	1	1*	1	1	1*	1	1*	1	1*	24
	23	1*	1	1	1	1	1	1	1	1	1*	1	1	1*	1*	0	1	1	1	1*	1	1*	1*	1	0	1	23
Level IV	17	1	1*	1*	1*	1*	1	1*	1	1*	1*	1	1	1*	1*	0	1*	1*	1	1	1	1*	1	1	1	0	23
Level V	1	1	1*	1*	1	1*	1	1	1	1	1	1*	1*	1	1*	0	1*	1*	1*	1*	1*	1	1	1*	1	1	24
		24	24	24	24	24	24	24	24	24	24	24	24	24	24	1	22	22	22	23	22	23	23	20	23	19	
Dependence Power																											

ISM Model: The ISM model is prepared by replacing the codes on the digraph with the descriptions of the barriers and the model appears in Figure 1.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

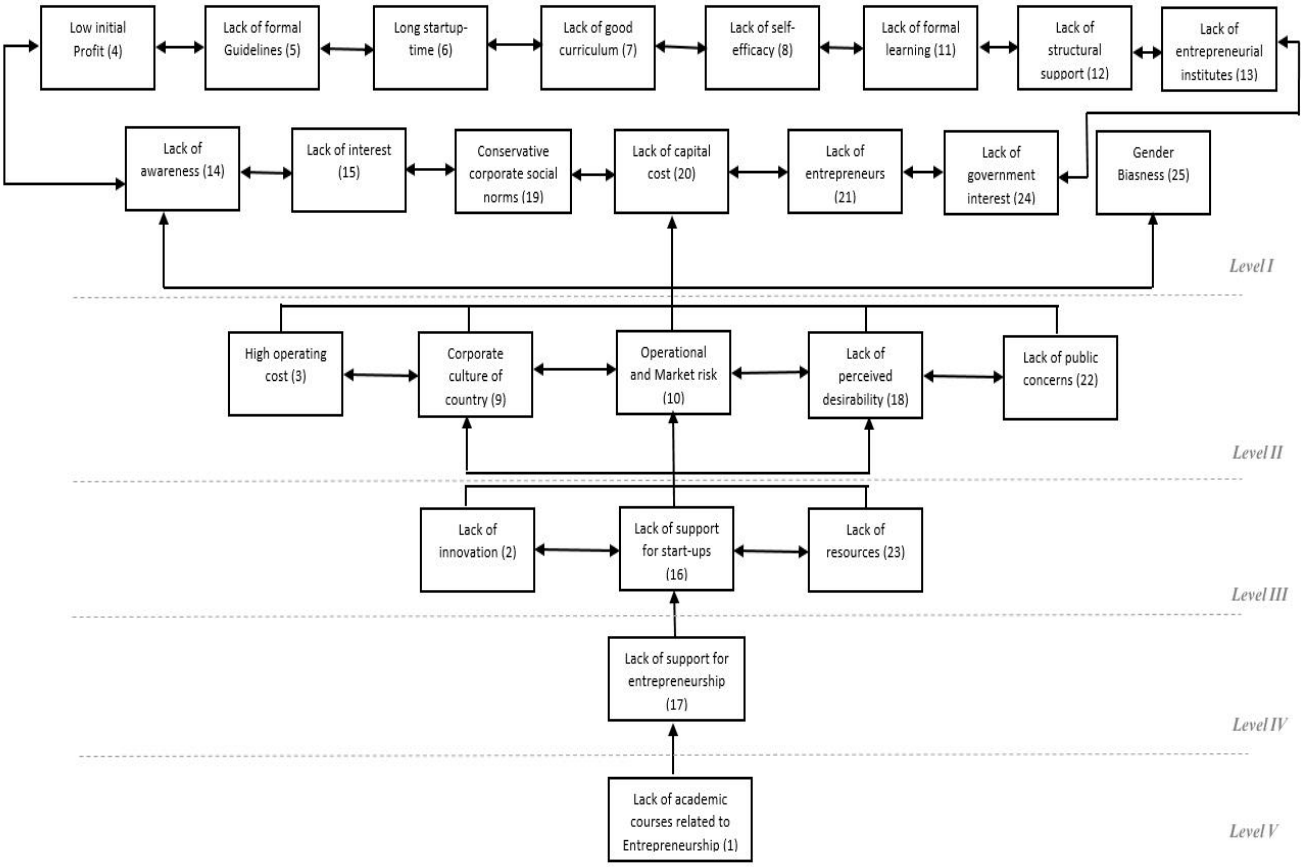

FIGURE 1: STRUCTURAL MODEL

The results of ISM (Figure 1) depict that barriers coded as 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 19, 20, 21, 24, and 25 fall at *Level I*. The barriers coded as 3, 9, 10, 18, and 22, fall at *Level II*. Factors coded as 2, 16, and 23 fall at *Level III*. The barriers coded as 1, and 17 fall at *Level IV*. The barrier coded as 1 falls at *Level V* (the bottom level).

MICMAC ANALYSIS: The analysis of the barriers is performed according to classical procedure of Matriced' Impacts Croise's Multiplication Appliquée a UN Classement – MICMAC (Godet, 1986) is applied to the data as contained in final reachability matrix Table 4 and resultantly a figure titled as Figure 2 is obtained. The analysis follows data centric approach in classifying the factors.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

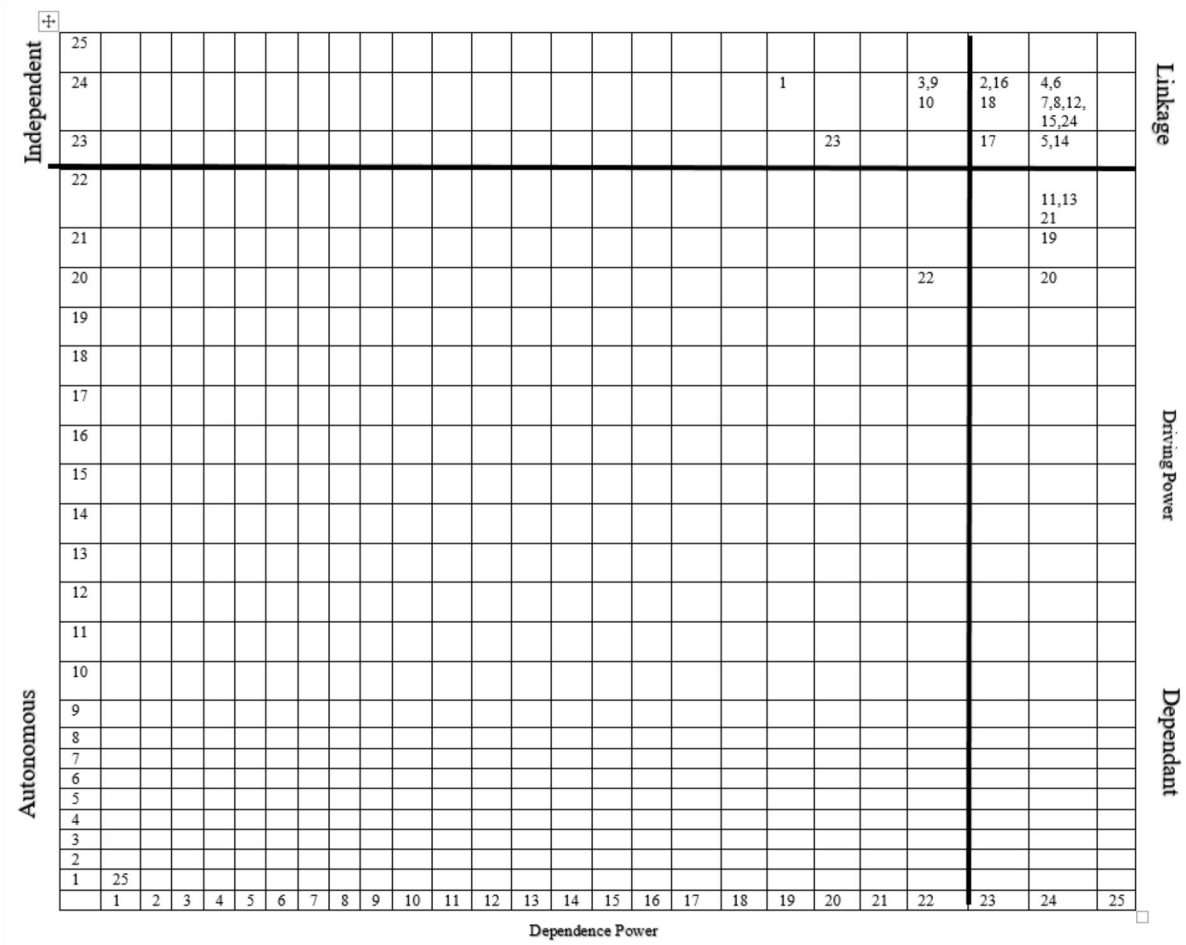

FIGURE 2: MICMAC ANALYSIS

Results of MICMAC (Figure 2) depict that the barriers coded as 22, and 25 fall in the autonomous cluster. The barriers coded as 11, 13, 14, 21, 19, and 20 fall in the dependent cluster. The barriers coded as 2, 4, 5, 6, 7, 8, 1), 15, 16, 17, 18, and 24 fall in the linkage cluster. While, the barriers coded as 1, 3, 9, 10, and 23 fall in the independence cluster.

RESULTS: This study presents useful understanding of the barrier to entrepreneurship in Pakistan and presents a structural modal to identify which barriers should be given priority. It also presents the graphical representation of factors distribution as per dependence and driving power. Barriers are stopping the way of entrepreneurship to flourish in Pakistan. For solving any problem first step will be the identification of these problems or barriers then comes the solution. So, the purpose of this study is the identification of these barriers in the context of Pakistan. In this study technique of data analysis consisted of ISM and MICMAC. Twenty-five barriers have been identified as barriers after going through the literature which is: lack of academic courses related to entrepreneurship, lack of innovation, high operating cost, low initial profit, lack of formal guidelines, long startup time, lack of good curriculum, lack of self-efficacy, the corporate culture of country, operational and market risk, lack of formal learning, lack of structural support, lack of entrepreneurial institutes, lack of awareness, lack of interest, lack of

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

support for start-ups, lack of support for entrepreneurship, lack of perceived desirability, conservative corporate social norms, lack of capital cost, lack of entrepreneurs, lack of public concerns, lack of resources, lack of government interest and gender biases. The results of ISM depicts that low initial profit (4), lack of formal guidelines (5), long startup time (6), lack of good curriculum (7), lack of self-efficacy (8), lack of formal learning (11), lack of structural support (12), lack of entrepreneurial institutes (13), lack of awareness (14), lack of interest (15), conservative corporate social norms (19), lack of capital cost (20), lack of entrepreneurs (21), lack of government interest (24), gender biases (25) fall at *Level I*. High operating cost (3), corporate culture of country (9), operational and market risk (10), lack of perceived desirability (18), lack of public concerns (22), fall at *Level II*. Lack of innovation (2), lack of support for start-ups (16), lack of resources (23), fall at *Level III*. Lack of academic courses related to entrepreneurship (1), lack of support for entrepreneurship (17), fall at *Level IV*. Barriers located at the bottom of the structural modal indicate that this barrier is of utmost importance, in this study lack of academic courses related to Entrepreneurship (1) is at *Level V* (the bottom level). Therefore, the lack of academic courses related to Entrepreneurship (1) is the most crucial barrier that has to be eliminated or dealt with to make the entrepreneurial process flourish. Moreover, lack of support for entrepreneurship (17) is also considered to be an important barrier because it is also located at the bottom level, so it will also be considered important for eliminating or reducing. However, the factors that are located at the center of the model level are moderate factors having mild or negligible effects. Results of MICMAC depict that lack of public concerns (22) and gender biases (25) fall in autonomous clusters which means they have weak dependence and driving forces both are also disconnected. In the dependent cluster, the lack of formal learning (11), the lack of entrepreneurial institutes (13), the lack of awareness (14), the lack of entrepreneurs (21), conservative corporate social norms (19), and the lack of capital cost (20), fall which means they have high dependence and low driving power. Lack of innovation (2), low initial profit (4), lack of formal guidelines (5), long startup time (6), lack of good curriculum (7), lack of self-efficacy (8), lack of structural support (12), lack of interest (15), lack of support for start-ups (16), lack of support for entrepreneurship (17), lack of perceived desirability (18), lack of government interest (24), fall in third cluster which is of linkages, it depicts that these factors have high driving and dependence power. While, lack of academic courses related to entrepreneurship (1), high operating cost (3), the corporate culture of the country (9), operational and market risk (10), and lack of resources (23) fall in the fourth cluster which is a cluster of independence and it depicts that these factors have week dependence and strong driving power. Thus, the first factor which is the Lack of academic courses related to Entrepreneurship (1) is the most important barrier because not only it is affecting the entrepreneurship at most but also drives the other barriers. So, this barrier should be treated first, as, we know that academic courses serve as a foundation of knowledge and if the foundation is creating problems, then nothing can be corrected without correcting the foundation.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

TABLE 11: RESULT SUMMARY

Code	Issue	Driving	Dependence	Effectiveness	Cluster	Level	Comment
1	Lack of academic courses related to Entrepreneurship	24	19	5	Independent	V	Key Factor
2	Lack of innovation	24	23	1	Linkage	*III*	
3	High operating cost	24	22	2	Independent	*II*	
4	Low initial Profit	24	24	0	Linkage	*I*	
5	Lack of formal Guidelines	23	24	-1	Linkage	*I*	
6	Long startup-time	24	24	0	Linkage	*I*	
7	Lack of good curriculum	24	24	0	Linkage	*I*	
8	Lack of self-efficacy	24	24	0	Linkage	*I*	
9	Corporate culture of the country	24	22	2	Independent	*II*	
10	Operational and Market risk	24	22	2	Independent	*II*	
11	Lack of formal learning	22	24	-2	Dependent	*I*	
12	Lack of structural support	24	24	0	Linkage	*I*	
13	Lack of entrepreneurial institutes	22	24	-2	Dependent	*I*	
14	Lack of awareness	23	24	-1	Linkage	*I*	
15	Lack of interest	24	24	0	Linkage	*I*	
16	Lack of support for start-ups	24	23	1	Linkage	*III*	
17	Lack of support for entrepreneurship	23	23	0	Linkage	*IV*	
18	Lack of	24	23	1	Linkage	*II*	

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

	perceived desirability					
19	Conservative corporate social norms	21	24	-3	Dependent	*I*
20	Lack of capital cost	20	24	-4	Dependent	*I*
21	Lack of entrepreneurs	22	24	-2	Dependent	*I*
22	Lack of public concerns	20	22	-2	Autonomous	*II*
23	Lack of resources	23	20	3	Independent	*III*
24	Lack of government interest	24	24	0	Linkage	*I*
25	Gender Biases	1	1	0	Autonomous	*I*

DISCUSSION: Uncertainty is one of the basic conditions in which entrepreneurs work and this uncertainty may be caused due to barriers faced by entrepreneurs. Previous research has pointed out different barriers related to entrepreneurship but despite these efforts' barriers are not fully identified previous research work failed to identify the interaction of these barriers. This study uses ISM and MICMAC methods to identify the interaction of barriers which will help in understanding how these barriers can affect each other. By doing so, we will be able to prioritize barriers that can also affect other barriers. The result of the analysis depicts the intensity of barriers by which they can affect entrepreneurial activity in Pakistan. A study conducted by Alidrisi (2020) on sustainable entrepreneurship presented many barriers to it such as risk aversion, lack of financial resources and experience in entrepreneurship, the complexity of social problems, external pressures, and lack of awareness of the opportunities and potential which had affected progress of entrepreneurship; uncertainty had been taken as an inherited factor of entrepreneurship during the conduction of this study. In that research, data was collected through interviews and surveys which were further analyzed through Fuzzy DEMATEL. Fuzzy DEMATEL helped the researchers in quantifying the direction and strength of the barriers furthermore it made it possible for the researchers to display the intricate web that had been formed by these barriers. Another research held by Alnassai (2023) focused on institutional and psychological barriers to determine their effect on entrepreneurial activities. Institutional and psychological barriers were categorized as economic instability, lack of social networking, fear of failure, political instability, risk aversion, and lack of resources presenting them as an integral part of it while for the conduction of the research, the researchers employed survey-based approach methodology. As the population of the study was heterogeneous so the data was collected through a questionnaire and further it was analyzed by using secondary data. Thus, the research concluded that lack of resources, risk aversion, and fear of failure acted as barriers to

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

entrepreneurship in developing countries. Alawamleh, et al. (2023) research conducted in Jordan brought forth the obstacles and barriers that were encountered by stakeholders on their journey toward progress. The research was conducted with the help of data which were collected from four start-up companies offering diversified fields while keeping the essence of their specialty alive. Consequently, it stated that key barriers challenged distributing work, obtaining information, commercial relations, financial and logistical support, networking, and owning operating experiences. Moreover, the study offered valuable propositions to eradicate or reduce the obstacles. The worth mentioning suggestions were to start pilot projects by governments and provide investment, and to provide facilities of technical knowledge in the private sector.

CONCLUSION

Entrepreneurship is of utmost importance and has great value for countries and companies that wish to prioritize their efforts and resources to remove hampering critical barriers and challenges for the successful implementation of entrepreneurial policies. There are quite many barriers hampering entrepreneurial activities in Pakistan. The study expounds and analyzes the barriers faced by entrepreneurship in Pakistan. The design of the study is a review of the literature, data curation, modeling, and analysis. The methodology ISM modeling and MICMAC analysis. The results of the literature discourse revealed that there are twenty-five major barriers (i.e. lack of academic courses related to entrepreneurship, lack of innovation, high operating cost, low initial profit, lack of formal guidelines, long startup time, lack of good curriculum, lack of self-efficacy, the corporate culture of country, operational and market risk, lack of formal learning, lack of structural support, lack of entrepreneurial institutes, lack of awareness, lack of interest, lack of support for start-ups, lack of support for entrepreneurship, lack of perceived desirability, conservative corporate social norms, lack of capital cost, lack of entrepreneurs, lack of public concerns, lack of resources, lack of government interest and gender biases) that hamper entrepreneurship in Pakistan. The results of ISM (Figure 1) depict that barriers coded as 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 19, 20, 21, 24, and 25 fall at *Level I*. The barriers coded as 3, 9, 10, 18, and 22, fall at *Level II*. Factors coded as 2, 16, and 23 fall at *Level III*. The barriers coded as 1, and 17 fall at *Level IV*. The barrier coded as 1 falls at *Level V* (the bottom level). Results of MICMAC (Figure 2) depict that the barriers coded as 22, and 25 fall in the autonomous cluster. The barriers coded as 11, 13, 14, 21, 19, and 20 fall in the dependent cluster. The barriers coded as 2, 4, 5, 6, 7, 8, 1), 15, 16, 17, 18, and 24 fall in the linkage cluster. While, the barriers coded as 1, 3, 9, 10, and 23 fall in the independence cluster.

IMPLICATIONS, LIMITATIONS, AND RECOMMENDATIONS

The structural model for the barriers to entrepreneurship has been developed by studying current literature, obtaining experts' opinions, and evaluating it with the help of ISM. This research depicts the key barriers to entrepreneurship and their contextual relationship in the context of Pakistan. So, it contributes to the existing literature by adding value to it and it also provides aid for future research in testing the theories that are associated with the factors, identified as barriers in this research. This research sheds light on the idea of barriers to entrepreneurship in Pakistan by presenting a structural modal of barriers to entrepreneurship. It assists government regulatory bodies to draft

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

regulations that can help to remove the entrepreneurial barriers to increase entrepreneurial activity which will improve the economic condition of Pakistan. It also assists academia in preparing an entrepreneurial mindset in youth and provides them with economic independence. The study accounts for twenty-five barriers to entrepreneurship in Pakistan extracted from the limited amount of literature but of course, there could be more factors that need to be identified, discussed, and included. This research is conducted in Pakistan and it is a qualitative study based on fifteen panelists that limits the scope of the study accordingly. Future research can be conducted by incorporating more barriers to entrepreneurship. Across the various types and sectors of entrepreneurship to ascertain whether the effects of barriers will be changed if we segmentize it or not. More developing countries can be included to find out the geographical impact of barriers. Quantitative methods and longitudinal studies can also be used for future research. The number of experts can also be increased.

REFERENCES

Abbas, J., & Uddin, Z. (2025). Understanding Digital Entrepreneurial Intentions: A Diffusion of Innovation Perspective in Higher Education. *Journal of Policy Options*, *8*(1).

Abbass, K., Asif, M., Niazi, A. A. K., Qazi, T. F., Basit, A., & Al-Muwaffaq Ahmed, F. A. (2022). Understanding the interaction among enablers of quality enhancement of higher business education in Pakistan. *Plos One*, 17(5), e0267919.

Abbass, K., Niazi, A. A. K., Qazi, T. F., Basit, A., & Song, H. (2022a). The aftermath of COVID-19 pandemic period: barriers in implementation of social distancing at workplace. *Library Hi Tech*, 40(2), 569-585.

Abdelwahed, N. A. A., Soomro, B. A., Shah, N., & Saraih, U. N. (2023). Effect of institutional support and entrepreneurial knowledge on women's entrepreneurial self-efficacy and venture performance in a developing country. *International Journal of Innovation Science*, *15*(5), 776-798.

Abdur-Rauf, I. A., & Raimi, L. (2024). A Conceptual Discourse on Islamic Finance Investment Modes for Established and Emerging Entrepreneurs: Tripartite Implications. *Journal of Business and Economic Options*, *7*(2).

Adjasi, C. K., & Yu, D. (2021). Investigating South Africa's economic growth: The role of financial sector development. *Journal of Business and Economic Options*, *4*(3).

Ahmed, J., & Rura, H. (2024). Understanding Heuristics and Investor Behavior in Financial Markets. *Journal of Policy Options*, *7*(4).

Alawamleh, M., Francis, Y. H., & Alawamleh, K. J. (2023). Entrepreneurship challenges: the case of Jordanian start-ups. *Journal of Innovation and Entrepreneurship*, *12*(1), 21.

Ali, A. (2015). *The Impact of Macroeconomic Instability on Social Progress: An Empirical Analysis of Pakistan*. Ph.D Dissertation. NCBA&E, Lahore, Pakistan, 1-152.

Ali, A., & Rehman, H. U. (2015). Macroeconomic instability and its impact on gross domestic product: an empirical analysis of Pakistan. *Pakistan Economic and Social Review*, 285-316.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

Ali, A., & Zulfiqar, K. (2018). An Assessment of Association between Natural Resources Agglomeration and Unemployment in Pakistan. *Journal of Pakistan Vision*, *19*(1).

Alidrisi, H. (2020). Barriers to Green Entrepreneurship: An ISM-Based Investigation. *Journal of Risk and Financial Management*, 13(11), 249.

Alnassai, J. M. I. A. (2023). A Study on the Barriers to Entrepreneurship in the UAE. *Journal of Risk and Financial Management*, *16*(3), 146.

Altaf, Z. (2023). *Entrepreneurship in the third world: Risk and uncertainty in industry in Pakistan*. Routledge.

Arshad, M. H., Sulaiman, Y., & Yusr, M. M. (2024). Influence of innovation on the relationship between market orientation, entrepreneurial orientation, and SME performance in Pakistan. *Multidisciplinary Science Journal*, *6*(5).

Attri, R., Dev, N., & Sharma, V. (2013). Interpretive structural modelling (ISM) approach: an overview. *Research journal of management sciences*, *2319*(2), 1171.

Audi, M., Ali, A., & Roussel, Y. (2021). Aggregate and Disaggregate Natural Resources Agglomeration and Foreign Direct Investment in France. *International Journal of Economics and Financial Issues*, *11*(1), 147-156.

Audi, M., Poulin, M., Ahmad, K., & Ali, A. (2025). Quantile Analysis of Oil Price Shocks and Stock Market Performance: A European Perspective. *International Journal of Energy Economics and Policy*, *15*(2), 624-636.

Banyen, T. (2022). Behavioral drivers of stock market participation: Insights from Ghanaian investors. *Journal of Business and Economic Options*, *5*(2).

Barbulescu, O., Capó-I-Vicedo, J., Maldonado-Gómez, G., & Tomás-Miquel, J. V. (2024). Barriers to social entrepreneurship among business management university students in Spain: A Fuzzy Dematel Approach. In *INTED2024 Proceedings* (pp. 2728-2736). IATED.

Bashir, F., & Rashid, B. (2019). Exploring the impact of foreign direct investment, consumption, inflation, and unemployment on GDP per capita. *Journal of Policy Options*, *2*(2).

Basit, A., Khan, A. A., & Qazi, T. F. (2021). Who performed more on worth going to see? Country-wide ranking and categorization based on performance in travel and tourism. *South Asian Journal of Educational and Social Research*, *4*(2), 119–130.

Basit, A., Niazi, A. A. K., Qazi, T. F., & Imtiaz, S. (2019). Evaluation and ranking of Pakistani Islamic banks: Using CAMELS model with GRA. *COMSATS Journal of Islamic Finance*, *4*(2).

Basit, A., Qazi, T. F., & Khan, A. A. (2021). A country-level analysis of worldwide official financing by international financial institutions. *South Asian Journal of Educational and Social Research*, *4*(2), 139–146.

Basit, A., Qazi, T. F., & Niazi, A. A. K. (2020). Expounding dynamics of tacit knowledge critical to credit decision making: Juxtaposed findings of GRA and RIDIT. *Journal of Accounting and Finance in Emerging Economies*, *6*(1), 87–106.

Basit, A., Qazi, T. F., & Niazi, A. A. K. (2020a). Expounding dynamics of tacit knowledge critical to credit decision making: Juxtaposed findings of GRA and RIDIT. *Journal of Accounting and Finance in Emerging Economies*, *6*(1), 87–106.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

Basit, A., Qazi, T. F., Niazi, A. A. K., & Niazi, I. A. K. (2023). Structural analysis of the barriers to address cyber security challenges. *Journal of Policy Research*, *9*(1).

Basit, A., Scholz, M., Niazi, A. A. K., Qazi, T. F., Shaukat, M. Z., Rao, Z. U. R., & Mahmood, A. (2021). Structural modeling on the determinants of effectiveness of SOPs containing COVID-19 in mass gatherings. *Frontiers in Psychology*, *12*, 755221.

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., ... & Walker, K. (2020). Purposive sampling: Complex or simple? Research case examples. *Journal of Research in Nursing*, *25*(8), 652–661.

Chauhan, A., Gupta, S., & Gupta, S. (2023). An ISM and MICMAC approach for modelling the contributors of multibagger stocks. *Asia-Pacific Financial Markets*, *30*(4), 677–699.

Das, N. (2022). The role of youth entrepreneurship in economic growth and social inclusion in India. *Journal of Policy Options*, *5*(1).

Diaz, A., & Weber, O. (2020). Balancing Investor Rights and Sustainable Development in International Investment Arbitration. *Journal of Energy and Environmental Policy Options*, *3*(4).

Farid, H., Qazi, T. F., Basit, A., & Niazi, A. A. K. (2023). Expounding the environment of small and medium enterprises (SMEs): A qualitative study conducted in Pakistan. *Bulletin of Business and Economics*, *12*(4), 321–334.

Fu, H., Abbass, K., Qazi, T. F., Niazi, A. A. K., & Achim, M. V. (2022). Analyzing the barriers to putting corporate financial expropriations to a halt: A structural modeling of the phenomenon. *Frontiers in Environmental Science*, *10*, 967418.

Irfan, M., Ahmad, A., Shah, S. M. A., & Ishaque, A. (2023). Social entrepreneurship: An exploration of formal and informal institution factors in Pakistan. *Russian Law Journal*, *11*(5S), 529–541.

Karhan, G. (2019). Investing in research and development for technological innovation: A strategy for Turkey's economic growth. *Journal of Business and Economic Options*, *2*(4).

Khalid, M. A., & Abdul, M. (2025). Green Growth and Human Capital in Bangladesh: Evaluating the Roles of Financial Development and Foreign Direct Investment in Reducing Carbon Emissions. *Journal of Energy and Environmental Policy Options*, *8*(1).

Khanin, D., Rosenfield, R., Mahto, R. V., & Singhal, C. (2022). Barriers to entrepreneurship: Opportunity recognition vs. opportunity pursuit. *Review of Managerial Science*, *16*(4), 1147–1167.

Kincaid, H., & Van Bouwel, J. (Eds.). (2023). *The Oxford handbook of philosophy of political science*. Oxford University Press.

Luna, A., & Luna, G. (2018). Exploring Investment Dynamics in Renewable Energy for Low-Carbon Economies through a Global Comparative Analysis. *Journal of Energy and Environmental Policy Options*, *1*(3).

Malokani, D., Junejo, D., Makhdoom, T. R., Mumtaz, S. N., Qazi, N., & Darazi, M. A. (2024). Impact of organizational culture on entrepreneurial orientation: Role of organizational commitment. *Migration Letters*, *21*(S7), 1048–1057.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

Maurya, R. (2018). Indian mutual funds: An empirical investigation. *Journal of Business and Economic Options*, *1*(1).

Mohammadi, H. (2022). Exploring the Role of Investment, Economic Structure, and Urbanization on Energy Intensity in the MENA Nations. *Journal of Energy and Environmental Policy Options*, *5*(4).

Munawar, S., Yousaf, H. Q., Ahmed, M., & Rehman, S. (2023). The influence of online entrepreneurial education on entrepreneurial success: An empirical study in Pakistan. *The International Journal of Management Education*, *21*(1), 100752.

Nasir, M. (2019). Navigating economic challenges: Opportunities and challenges for emerging entrepreneurs. *Journal of Policy Options*, *2*(3).

Nasir, Z. M. (2022). Macroeconomic factors shaping foreign direct investment inflows: Evidence from Pakistan. *Journal of Business and Economic Options*, *5*(2).

Nazir, M. A., Khan, R. S., & Khan, M. R. (2024). Identifying prosperity characteristics in small and medium-sized enterprises of Pakistan: Firm, strategy and characteristics of entrepreneurs. *Journal of Asia Business Studies*, *18*(1), 21–43.

Niazi, A. A. K., Asghar, W., Basit, A., & Zeeshan Shaukat, M. (2021). Evaluation of global goals promoting sustainability: A study of selected sixty-eight countries. *Elementary Education Online*, *20*(1), 2821–2821.

Niazi, A. A. K., Qazi, T. F., & Basit, A. (2019). An interpretive structural model of barriers in implementing corporate governance in Pakistan. *Global Regional Review*, *4*, 359–375.

Niazi, A. A. K., Qazi, T. F., & Basit, A. (2019a). What hinders to promote tourism in Pakistan? Using binary matrices for structuring the issue. *Review of Economics and Development Studies*, *5*(4), 881–890.

Niazi, A. A. K., Qazi, T. F., & Basit, A. (2019b). Expounding the structure of slyer ways of tunneling in Pakistan. *Global Regional Review*, *4*(2), 329–343.

Niazi, A. A. K., Qazi, T. F., & Basit, A. (2021). Evaluating unemployment through grey incidence analysis model: A study of one hundred thirteen selected countries. *Global Regional Review*, *6*(1), 23–35.

Niazi, A. A. K., Qazi, T. F., & Sandhu, K. Y. (2019). Uncovering the myths of total quality management in readymade garment sector of Pakistan: An interpretive structural modeling approach. *Review of Economics and Development Studies*, *5*(3), 531–540.

Niazi, A. A. K., Qazi, T. F., Ali, I., & Ahmad, R. (2020). Prioritizing determinants of effective whistle blowing: Interpretative structural modeling approach. *International Journal of Law and Management*, *62*(3), 213–230.

Niazi, A. A. K., Qazi, T. F., Aziz, M., Basit, A., & Niazi, I. A. K. (2023). Using the binary matrices for modeling the supply chain issues of virtual shops: An evidence from Pakistan. *Journal of Policy Research*, *9*(2), 548–564.

Niazi, A. A. K., Qazi, T. F., Basit, A., & Khan, K. S. (2019). Curing expensive mistakes: Applying ISM on employees' emotional behaviors in environment of mergers. *Review of Economics and Development Studies*, *5*(1), 79–94.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

Niazi, A. A. K., Qazi, T. F., Basit, A., & Khan, R. A. (2019a). Expounding complex relations among criticisms on Islamic banking through interpretive structural modeling. *Paradigms*, *13*(2), 151–159.

Niazi, A. A. K., Qazi, T. F., Basit, A., & Shaukat, M. Z. (2021a). Evaluation of climate of selected sixty-six countries using grey relational analysis: Focus on Pakistan. *Journal of Business and Social Review in Emerging Economies*, *7*(1), 95–106.

Niazi, A. A. K., Qazi, T. F., Butt, H. T., Niazi, I. A. K., & Basit, A. (2023a). A structural analysis of barriers being faced by green banking initiatives in Pakistan. *Journal of Policy Research*, *9*(2), 182–199.

Niazi, A. A. K., Qazi, T. F., Hameed, R., & Basit, A. (2020a). How they get stuck? Issues of women entrepreneurs: An interpretive structural modeling approach. *Paradigms*, *14*(1), 73–80.

Niazi, A. A. K., Qazi, T. F., Khan, K. S., Basit, A., & Ahmad, R. (2020b). Identification and ranking of employees' physical behaviors critical to mergers. *International Journal of Management Research and Emerging Sciences*, *10*(4).

Niazi, A. A. K., Qazi, T. F., Sarwar, A., Niazi, I. A. K., & Basit, A. (2023b). A structural model of hindrances to switch from traditional to virtual real estate marketing in Pakistan. *Journal of Policy Research*, *9*(2), 1–16.

Niazi, A. A. K., Saleem, M., Basit, A., Iqbal, Z., & Khan, I. A. (2023c). Analysing the barriers in tacit knowledge sharing among skilled workers: An evidence from technical and vocational education and training sector of Pakistan. *Journal of Technical Education and Training*, *1*(1), 46–59.

Perveez, T. (2019). The impact of domestic interest rates on foreign direct investment: Evidence from Pakistan. *Journal of Policy Options*, *2*(1).

Qazi, T. F., Basit, A., Asghar, W., & Niazi, A. A. K. (2020). Composite appraisal of women development in selected thirty-six countries with special focus on Pakistan: Applying grey incidence analysis model. *Journal of Business and Social Review in Emerging Economies*, *6*(4), 1227–1236.

Qazi, T. F., Basit, A., Asghar, W., & Niazi, A. A. K. (2020a). Composite appraisal of women development in selected thirty-six countries with special focus on Pakistan: Applying grey incidence analysis model. *Journal of Business and Social Review in Emerging Economies*, *6*(4), 1227–1236.

Qazi, T. F., Basit, A., Niazi, A. A. K., & Saleem, M. (2023). What stops to switch on to solar energy? An empirical evidence from Pakistan. *Bulletin of Business and Economics*, *12*(4), 288–298.

Qazi, T. F., Niazi, A. A. K., & Basit, A. (2020). Investigating critical resemblances of Islamic banking with conventional: Binary matrices as solution methodology. *Journal of Business and Social Review in Emerging Economies*, *6*(1), 349–364.

Qazi, T. F., Niazi, A. A. K., & Basit, A. B. (2021). Assessment of agricultural performance of districts of Punjab based on composite agricultural indicators using grey relational analysis. *Global Social Sciences Review*, *6*(1), 158–172.

Qazi, T. F., Niazi, A. A. K., & Inam, S. (2019). Evaluating research performance of leading Pakistani universities: A grey relational analysis. *Journal of Research & Reflections in Education*, *13*(2).

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

Qazi, T. F., Niazi, A. A. K., Asghar, W., & Basit, A. (2021a). Ease of doing business: Analysis of trade facilitations of one hundred twenty-seven countries of the world. *Journal of Accounting and Finance in Emerging Economies*, *7*(1), 65–75.

Qazi, T. F., Niazi, A. A. K., Basit, A., Rehman, A., & Nazir, A. (2019). The jostle of workplace pressures on credit managers: Interpretive structural modeling to underpin the severity. *Bulletin of Business and Economics*, *8*(3), 155–163.

Qazi, T. F., Niazi, A. A. K., Mahmood, A., Basit, A., & Niazi, I. A. K. (2023a). An analysis of the determinants of trust in virtual buying: An interpretive structural modeling approach. *Journal of Policy Research*, *9*(2), 87–102.

Qazi, T. F., Niazi, A. A. K., Sheikh, S., Niazi, I. A. K., & Basit, A. (2022). Analysis of vulnerability factors of NGOs: An interpretive structural modeling approach. *Journal of Policy Research*, *8*(4), 483–497.

Qazi, T. F., Shaukat, M. Z., Niazi, A. A. K., & Basit, A. (2021). Evaluating the immediate response of country-wide health systems to the COVID-19 pandemic: Applying the grey incidence analysis model. *Frontiers in Public Health*, *9*, 635121.

Rajiani, I., Kot, S., Michałek, J., & Gede Riana, I. (2023). Barriers to technology innovation among nascent entrepreneurs in deprived areas. *Problems and Perspectives in Management*, *21*(3), 614–628.

Rashid, M. K., Basit, A., Qazi, T. F., & Niazi, A. A. K. (2021). Comprehensive analysis of tariff barriers worldwide: A composite assessment approach. *Journal of Accounting and Finance in Emerging Economies*, *7*(1), 205–215.

Rath, N. (2024). Perceived advantages and challenges of internet marketing: A study of small entrepreneurs in Punjab, India. *Journal of Policy Options*, *7*(1).

Sadashiv, K. R. (2023). Foreign direct investment dynamics and economic growth in the case of India. *Journal of Business and Economic Options*, *6*(1).

Shahabuddin, Q., & Ali, M. (2024). Investment decisions and satisfaction of individual investors at the Dhaka Stock Exchange: A behavioral perspective. *Journal of Policy Options*, *7*(2).

Shahzad, S., Audi, M., Sulehri, F. A., & Ali, A. (2025). Nexus between Financial Liberalization and Financial Market Performance: A Testing of Convergence Hypothesis. *Policy Journal of Social Science Review*, *3*(1), 320-343.

Shaukat, M. Z., Saleem, M., Mirza, M. U. A., Basit, A., & Niazi, A. A. K. (2023). Using interpretive structural modelling to impose hierarchy on critical issues of contractual bargaining: A study of construction industry of Pakistan. *Journal of Policy Research*, *9*(3), 69–84.

Shaukat, M. Z., Scholz, M., Qazi, T. F., Niazi, A. A. K., Basit, A., & Mahmood, A. (2021). Analyzing the stressors for frontline soldiers fighting against coronavirus disease 2019 pandemic. *Frontiers in Psychology*, *12*, 751882.

Soomro, B. A., Abdelwahed, N. A. A., & Shah, N. (2024). Entrepreneurship barriers faced by Pakistani female students in relation to their entrepreneurial inclinations and entrepreneurial success. *Journal of Science and Technology Policy Management*, *15*(3), 569–590.

ISSN (E) 3007-3197
ISSN (P) 3007-3189
Publisher Name : COLLABORATIVE EDUCATIONAL LEARNING INSTITUTE
Frequency Of Journal: Bi-Annual
Annual Methodological Archive Research Review

VOL-3, ISSUE-3, 2025

Sushil, A. (2017). Modified ISM/TISM process with simultaneous transitivity checks for reduced direct pair comparisons. *Global Journal of Flexible Systems Management*, *18*(4), 331–351.

Tansuchat, P., & Thaicharo, Y. (2025). Cognitive Biases and Investment Choices: Exploring the Psychological Determinants of Financial Decision-Making in Thailand. *Journal of Business and Economic Options*, *8*(1).

Tanveer, M., Ali, H., & Haq, I. U. (2021). Educational entrepreneurship policy challenges and recommendations for Pakistani universities. *Academy of Strategic Management Journal*, *20*(2), 1–15.

Tariq, S., Shaukat, M. Z., Niazi, A. A. K., & Basit, A. (2023). Evaluating the counterproductive behaviors of employees at work place: Empirical evidence from public sector organizations. *Bulletin of Business and Economics*, *12*(2), 178–187.

Tunio, M. N., Jariko, M. A., Børsen, T., Shaikh, S., Mushtaque, T., & Brahmi, M. (2021). How entrepreneurship sustains barriers in the entrepreneurial process—A lesson from a developing nation. *Sustainability*, *13*(20), 11419.

Warfield, J. N. (1973). Binary matrices in system modeling. *IEEE Transactions on Systems, Man, and Cybernetics*, *(5)*, 441–449.

Warfield, J. N. (1974). Toward interpretation of complex structural models. *IEEE Transactions on Systems, Man, and Cybernetics*, *(5)*, 405–417.

William, F. K. A. (2024). Interpretivism or constructivism: Navigating research paradigms in social science research. *Interpretivism or Constructivism: Navigating Research Paradigms in Social Science Research*, *143*(1), 5–5.

Willy, R. (2018). The role of economic growth, foreign direct investment in determining environmental degradation: A panel data analysis. *Journal of Energy and Environmental Policy Options*, *1*(4).

Yakubu, A. (2021). Entrepreneurial Intentions Among Senior High School Students in Ghana. *Journal of Policy Options*, *4*(1).

Zahid, M. (2018). Economic misery, exchange rate, interest rate, and foreign direct investment: Empirical evidence from Pakistan. *Journal of Policy Options*, *1*(2).

Zaidi, R. A., Khan, M. M., Khan, R. A., & Mujtaba, B. G. (2023). Do entrepreneurship ecosystem and managerial skills contribute to startup development? *South Asian Journal of Business Studies*, *12*(1), 25–53.