

**“MANAGEMENT PRACTICES FOR
PROVIDING RESURGENCE TO
MANUFACTURING SECTOR – A CASE STUDY
OF YEMEN”**

Thesis submitted to Kuvempu University for the Degree of

DOCTOR OF PHILOSOPHY

In

MANAGEMENT AND BUSINESS ADMINISTRATION



by

Mugaahed Abdu Kaid Saleh M.B.A.

Reg. No. 403 / 02-01-2018
Department of Management and Business Administration
Kuvempu University

Research Guide

Dr. Manjunath K. R. M.B.A., Ph.D.

Department of Management and Business Administration
Kuvempu University
Jnana Sahyadri, Shankaragatta – 577 451
Karnataka, India

September-2022

**“MANAGEMENT PRACTICES FOR
PROVIDING RESURGENCE TO
MANUFACTURING SECTOR – A CASE STUDY
OF YEMEN”**

Thesis submitted to Kuvempu University for the Degree of

DOCTOR OF PHILOSOPHY

In

MANAGEMENT AND BUSINESS ADMINISTRATION



by

Mugaahed Abdu Kaid Saleh M.B.A.

Reg. No. 403 / 02-01-2018
Department of Management and Business Administration
Kuvempu University

Research Guide

Dr. Manjunath K. R. M.B.A., Ph.D.

Department of Management and Business Administration
Kuvempu University
Jnana Sahyadri, Shankaragatta – 577 451
Karnataka, India

September-2022

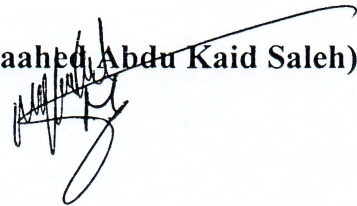
Mr. Mugaahed Abdu Kaid Saleh

Department of Management and Business Administration
Kuvempu University
Shivamogga-India
Email: mugaahed@yahoo.com

Declaration

I hereby declare that the thesis entitled “**Management Practices for Providing Resurgence to Manufacturing Sector – A Case Study of Yemen**” submitted to **Kuvempu University**, for the award of the degree of **Doctor of Philosophy in Management** under the guidance of **Dr. Manjunath K. R.**, Associate Professor, Department of Management and Business Administration, is the result of my own investigations, except where otherwise stated. All other sources are acknowledged in front of bibliographic references. This work has not been previously accepted in substance for award of any degree, diploma or fellowship and is not being concurrently submitted in candidature for any degree unless, as agreed upon by the University, for approved dual awards.

(Mugaahed Abdu Kaid Saleh)



Place: Shankaragatta

Date: 28/9/2022



KUVEMPU UNIVERSITY

(NAAC "A" Grade, NIRF 86th Rank)

Department of Management and Business Administration

Shankaraghatta 577451, Shivamogga, Karnataka, India

Dr. Manjunath K. R. M.B.A. Ph.D.

Mobile: 9480012101

Associate Professor and Research [Email:manjurajappa@gmail.com](mailto:manjurajappa@gmail.com)

Guide

krm@kuvempu.ac.in

Certificate

This is to certify that the work reported in this thesis entitled **“Management Practices for Providing Resurgence to Manufacturing Sector – A Case Study of Yemen”** submitted by **Mr. Mugaahed Abdu Kaid Saleh** to Kuvempu University, for the award of **Doctor of Philosophy in Management** is a record of bonafide and original research work carried out by him under my guidance and direct supervision. The work reported in this thesis has not formed the basis for the award of any degree, diploma, fellowship or any other similar title in any other institution or university.

Place: Shankaraghatta

Date: 28/09/2022


Dr. Manjunath K/R.

Associate professor and Research Guide,
Department of Management and Business
Administration,
Kuvempu University, Shankaraghatta

Prof. H. N. Ramesh, M.B.A. Ph.D.
Chairman

Mobile: 9886130767
Email: hnrameshku@gmail.com

Certificate

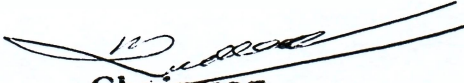
This is to certify that the work reported in this thesis entitled “**Management Practices for Providing Resurgence to Manufacturing Sector – A Case Study of Yemen**” submitted by **Mr. Mugaahed Abdu Kaid Saleh** to Kuvempu University, for the award of **Doctor of Philosophy in Management** is a record of bonafide and original research work carried out by him under the guidance and direct supervision of Dr. Manjunath K. R. Associate professor and Research guide in the Department of Management and Business Administration. The work reported in this thesis has not formed the basis for the award of any degree, diploma fellowship or any other similar title in any other Institution or University.

Prof. H. N. Ramesh

Place: **Shankaraghatta**

Date: 28/9/2022

Chairman,
Department of Management and
Business Administration
Kuvempu University,
Shankaraghatta


Chairman
Institute of Management Studies
and Research
Kuvempu University
Shankaraghatta

Acknowledgement

The research journey is completed at last. It has been a professional and emotional rollercoaster with a steep learning curve. I am glad it is finally completed, even though I will miss working on it. It has been successfully completed only due to several individuals who have in one way or another contributed and extended their support to the success of my research work presented herein

I am very grateful to the people around me who never saved any effort to support me and stand behind me. The most debt I have is to my mother, **Safiah Kaid**, who showered me with her prayers and blessings, I love you and I am shamefully apologizing to you for being far from you during these years, and I am sure my father is looking down on me from heaven and feeling very proud; My brother **Taha Futaahy**, who has taken the role of the father and the big brother who is the very backbone and a pillar behind my education and whom I turned to when no one else is seen around, I love you and I will never be able to return or reciprocate your support; My best friend, **Ruth Minkov** who has been the real definition of real friendship that upgrades to family bond, I love you and I am forever grateful to you for all the unconditional love and unwavering support you graciously offer and I seriously needed. My nephews **Abdulrahman Ahmad** and **Sameer Samadi** for their unwavering support without which, it would have been difficult to be here and write these notes. I am deeply grateful to my special friend **Wesam Qahtan** for his tremendous and gracious support especially the support that facilitated my abroad life.

This research would not have been possible without the support and guidance of my supervisor **Dr. Manjunath K. R.**, I heartly and endlessly owe him for his

ability to make sense out of everything I contribute and guide me until the very end of this PhD journey and his support being the reason behind the quality of this research work, he is the one who went above and beyond to read every line of the manuscript in meticulous detail, and most importantly who whetted my appetite for research and gave me the opportunity to study management further. Without your consistent support and encouragement, I would not have been able to be here and rub shoulders with esteemed academicians, while attempting to leave my mark in the scholarly literature. I am indebted to you for your belief, tutelage, encouragement, patience, and deeply grounding presence.

I am deeply grateful to the administration of the department of Management and Business Administration at Kuvempu university represented by **Prof. H. N. Ramesh**, who creates a friendly environment wherever he is, and **Prof. R. Hiremani Naik**, who keeps the attention of research scholar directed on the main goal for why they joined the department.

I would like to thank the **staff, guest faculties and fellow research scholars** of the department of Management and Business Administration, Kuvempu University, who greeted me with the smile that made me feel I did not travel from home to study.

I wish to thank and express my unlimited gratitude to **Dr. Neeraj Kaushik**, Associate Professor, NIT, Kurukshetra, who laid the scholarly foundation of my work knowledge and has been unfailingly generous and supportive mentor. I am grateful to him for his knowledge, expertise, kind cooperation, useful discussions, the academic conversations and sharing PhD experiences.

I'm eternally indebted to **Dr. Riaz Mahmood**, Director, International Students' Cell and Chairman, Department of Biotechnology, Kuvempu

University, Kuvempu University, for his reliability and ensuring convenience and facilitating the necessary formalities required for smooth and legal stay of all foreign students in the university.

Most gratitude goes to the **authorities of Kuvempu University** and all the people who were involved in the decision to grant me the chance to complete my research work. I am thankful to the **local community** involved in the campus of Kuvempu University and outside campus in Shankaraghatta, Shimoga and India in general; the society in which I never experienced homesickness during the last five years. I am grateful to all the teachers that I learned from directly and indirectly throughout my academic life.

I am also thankful to my **Yemeni friends** and colleagues pursuing their studies here at Kuvempu University where we were able to create a little Yemen, through which, we feel home and connected with who we are and where we came from. Further gratitude is expressed towards the **managers and owners of manufacturing SMEs in Yemen** for their support and willingness to help in participating in this research work.

Finally, I am grateful to all the individuals who have directly and indirectly have offered their help and support to me during my studies.

Finally, all of my gratitude would be definitely incomplete if I would forget to thank the most merciful and gracious ALLAH for the real guidance and success in life.

Mugaahed Abdu Kaid Saleh, ..

Dedication

To Safiah Kaid,

The best mother

To Taha Futaahy,

The best brother

To Ruth Minkov,

The best friend

List of tables

Table 2-1 Variables adopted for the research model with resources.	106
Table 2-2:Chapters scheme.	115
Table 3-1: Employment among SMEs in Yemen 2003 - 2017.....	129
Table 3-2: Employment compensation among SMEs in Yemen 2003 – 2017.....	129
Table 3-3: Value added among manufacturing SMEs in Yemen 2003 - 2017.....	132
Table 3-4: Relevant studies that have investigated the challenges of the SME sector.....	134
Table 3-5: Export and imports 2003 - 2017 (percentage of GDP).....	143
Table 4-1: Response rate details.	158
Table 4-2: Characteristics of managers.....	160
Table 4-3: Characteristics of enterprises.....	161
Table 4-4: Common method Bias - Marker Variable.	165
Table 4-5: Descriptive statistics - Diagnosing the problem.	166
Table 4-6: Descriptive statistics - Developing Alternatives.....	169
Table 4-7: Descriptive statistics - Evaluating available alternatives.....	171
Table 4-8: Descriptive statistics - Choosing the best alternative.	174
Table 4-9: Descriptive statistics - Implementing the chosen alternative.	176
Table 4-10: Descriptive statistics - Monitoring and following up the alternative.	179
Table 4-11: Descriptive statistics - Evaluating the current performance.	181
Table 4-12: Descriptive statistics - Evaluating managerial performance.	184
Table 4-13: Descriptive statistics - Evaluation of managers' performance.	186
Table 4-14: Descriptive statistics - Strategic analysis (Internal resources).	188
Table 4-15: Descriptive statistics - strategic analysis (S.W.O.T).	190
Table 4-16: Descriptive statistics - Performance growth among SMEs.	193
Table 4-17: Descriptive statistics - Performance during the last five years.....	195
Table 4-18: Descriptive statistics - Internal performance of SMEs.....	196
Table 4-19: Descriptive statistics - learning growth performance.	199

Table 4-20: Descriptive statistics - organizational learning.....	201
Table 4-21: Descriptive statistics - traditional decision making.....	204
Table 4-22: Descriptive statistics - Information technology in decision making.....	206
Table 4-23: Descriptive statistics - Entrepreneurial competencies.....	209
Table 4-24: Descriptive statistics - willingness for further education and training in management and entrepreneurship.....	212
Table 4-25: Differences in DMPs based on enterprises' characteristics.....	216
Table 4-26: Differences in DMPs based on managers' characteristics.....	218
Table 4-27: Differences in SMEs performance based on enterprises' characteristics.....	220
Table 4-28: Differences in SMEs performance based on managers' characteristics.....	222
Table 4-29: Reliability measures of the independent variables.....	225
Table 4-30: reliability measures of the dependent variables.....	227
Table 4-31: Reliability measures of mediating and moderating variables.....	228
Table 4-32: Discriminant validity - Fornell-Larcker's criteria.....	231
Table 4-33: Discriminant validity - HTMT criteria.....	233
Table 4-34: Correlation across the independent variables.....	236
Table 4-35: Correlations across the dependent variables.....	237
Table 4-36: Reliability measures of the second order variables.....	238
Table 4-37: Discriminant validity of the higher order model - Fornell-Larcker's criteria.....	239
Table 4-38: Discriminant validity of the higher order model - HTMT criteria.....	240
Table 4-39: Variance Inflation Factor of all main variables.....	241
Table 4-40: The decision making process variables coefficients - zero order.....	243
Table 4-41: The strategic practices for decision making coefficients - zero order.....	246
Table 4-42: Coefficients of the decision making practices model - higher order.....	249
Table 4-43: Coefficients of the decision making process model - higher order.....	255

Table 4-44: Coefficients of the strategic practices model - higher order.....	258
Table 4-45: Comparison of coefficients of the three models.....	260
Table 4-46: Comparison of variance explained (R^2) in the three models.	262
Table 4-47: Explanatory power of the research model - Rsquared.....	263
Table 4-48: Explanatory power of the research model - f squared (Effect size). .	264
Table 4-49: The predictive power of the research model.	267
Table 4-50: The direct effect without the mediator.	269
Table 4-51: The indirect effects through the mediators.....	270
Table 4-52: The direct effect with the presence of the mediator.	272
Table 4-53: Th interaction effects of the moderators.....	274
Table 4-54: Summary of hypotheses testing (DMPs adoption).....	274
Table 4-55: Summary of hypotheses testing (differences in adopting DMPs and performance).....	275
Table 4-56: Summary of hypotheses testing (Impact of SMEsP).....	276
Table 4-57: Comparing the results of the three models.	277
Table 4-58: Summary of hypotheses testing (Mediating analysis).....	278
Table 4-59: Summary of hypotheses testing (Moderation analysis).....	278

List of Figures

Figure 2-1: Research model (1): The main research model containing all the practices in the study.....	74
Figure 2-2: Research model (2): The decision making process steps model.....	75
Figure 2-3: Research model (3): The strategic practices related to decision making Model.....	76
Figure 2-4: Determining the minimum sample size through G-Power.....	104
Figure 4-1: The decision making process model - zero order	245
Figure 4-2: The strategic practices model - zero order	247
Figure 4-3: The decision making practices model - higher order	254
Figure 4-4: The decision making process model - higher order	257
Figure 4-5: The strategic practices model - higher order.....	259
Figure 4-6: Symmetrical distribution of prediction errors.....	265

List of Abbreviation

Abbreviation	Full form
DMPS	Decision Making Practices
DP	Diagnosing the problems
DA	Developing alternatives
EA	Evaluating Alternatives
CA	Choosing Alternatives
IA	Implementing the alternatives
MEA	Monitoring the effectiveness of the alternative
ECP	Evaluating current performance
EMP	Evaluating managerial performance
EMSP	Evaluating Managers' performance
SAIR	Strategic Analysis – Internal Resources
SASWOT	Strategic Analysis – Strength, Weakness, Opportunities and Threats.
SMEsP	SMEs Performance
PG	Performance growth among SMEs
PI	Performance improvement among SMEs
IP	Internal performance
LGP	Learning growth performance
SPDM	Strategic practices for decision making
DMPsM	Decision making process Model
SPMDM	Strategic practices model for decision making
OL	Organizational Learning
TDMPs	Traditional Decision Making Practices
ITinDM	information technology in Decision making
ECs	Entrepreneurial Competences
WFFTE	Willingness For Further Training and Education
GSCM	Green Supply Chain Management
MPS	Management Practices Score (MPS)
CEOs	Chief executive officer.

List of Terms (Glossary)

Ambidexterity: The ability to apply multiple approaches to strategy either concurrently or successively.

Belligerents: the parties involved in the prevailing war (in Yemen).

Environmental munificence: The scarcity or abundance of critical resources needed by firms operating within an environment.

Friends of Yemen: Friends of Yemen Group is an organization that was established in 2011 by a group of 39 countries supporting Yemen during the conflict, it is co-chaired by the United Kingdom, the Kingdom of Saudi Arabia and the Republic of Yemen.

Hypothesis: The term hypothesis, unless stated otherwise, always refers to the null hypothesis set for the study.

Islamic sects: The two different branches in Islam which are Sunni and Shia sects, including the sub-sects under them.

Managerial hubris: The unrealistic belief held by managers in bidding firms that they can manage the assets of a target firm more efficiently than the target firm's current management.

Manufacturing Sector: Since the economy of Yemen is not a manufacturing economy, the term “manufacturing sector in Yemen” refers to the processing sector.

Patriarchal authoritarianism: A system of society where the men are the head-of-the-household, carry the most power and where the family lineage passes on through men.

Primogeniture: The system by which a company, authority or property that is owned by a man goes to his oldest son after his death.

Redress: To tackle and deal challenges and difficulties faced by the SME sector.

Rev up: To develop and improve the skills among individuals.

The comprehensive industrial survey: A survey conducted in 2010 with the support of the World Bank to count the manufacturing enterprises in Yemen.

List of Contents

1	Chapter One: Introduction	1
	Part A: Management Practices and its relevance to developing and underdeveloped countries.....	2
1.1	Developing management practices for better performance.....	6
1.2	Towards developing management practice	9
1.3	Decision making practices.....	16
1.4	The Arab context of management and decision making	17
1.5	Managerial practices in enterprises in Yemen.....	19
	Part B: Research and its contribution to Management Practices in Developing/Underdeveloped Countries.....	22
1.6	Importance of Management for an Organization	22
1.7	Developing management practices	33
1.8	Towards Management Practices in Small Enterprises	34
1.9	The decision making practices	37
1.10	The role of decision making in the business performance.....	45
1.11	The context of Yemen.....	49
2	Chapter Two: Research Design	57
2.1	Research Gap	57
2.2	Statement of the research problem	59
2.3	Significance of the Research	60
2.4	Research Objectives	62
2.5	Research questions	63
2.6	Research Hypothesis.....	64
2.6.1	DMPs adoption	64
2.6.2	Differences in adopting DMPs.....	64
2.6.3	Impact on SMEs performance	64
2.7	Research Scope.....	66
2.7.1	Conceptual scope	67
2.7.2	Geographical scope.....	68
2.8	Methodology.....	69
2.9	Theoretical framework of the research model.....	70
2.10	Operational definitions.....	77
2.10.1	The dependent variables	77
2.10.2	The independent variables for the study - the attributes of decision making practices.....	79

2.10.3	Strategic practices relevant to decision making.....	89
2.10.4	The mediating and moderating variables.....	96
2.11	Research Sample.....	103
2.12	Data source.....	105
2.13	Research instrument and measurement.....	105
2.14	Data collection.....	107
2.15	Data analysis.....	108
2.15.1	Descriptive statistics.....	109
2.15.2	Reliability and validity.....	109
2.15.3	Inferential statistics.....	109
2.15.4	The predictive power of the model.....	114
2.16	Chapters scheme.....	115
3	Chapter Three: The manufacturing SMEs in Yemen: A theoretical background.....	117
3.1	Introduction.....	117
3.2	Manufacturing sector during the Ottoman empire in Yemen.....	118
3.3	Manufacturing before the establishment of Yemen as a republic.....	119
3.4	Defining small and medium enterprises.....	120
3.5	Manufacturing enterprises in Yemen.....	122
3.5.1	Ownership in the manufacturing sector.....	123
3.5.2	Spread of manufacturing enterprises in Yemen.....	125
3.6	The role of small and medium manufacturing enterprises in the Yemeni economy.....	127
3.6.1	Employment.....	127
3.6.2	Employee compensations.....	130
3.6.3	Value added.....	131
3.7	Challenges and obstacles encountered by the manufacturing sector in Yemen	133
3.7.1	Classifying the challenges faced by SMEs based on their approach to resolve	138
3.8	The impact of the recent political and economic instability on the performance and activities of the SME sector.....	151
3.8.1	Business Closure.....	151
3.8.2	Loss of customer base.....	153
3.8.3	Workers lay off.....	153
3.8.4	Worsening business constraints for SMEs.....	155
4	Chapter Four: Contemporary Management Practices and Resurgence of manufacturing sector: An analysis.....	157

4.1	Preliminary analysis of the data.....	157
4.1.1	Response rate	157
4.1.2	Demographic background.....	158
4.1.3	Data screening.....	161
4.1.4	Normal distribution of the data.....	162
4.1.5	Common method bias analysis	162
4.2	Descriptive statistics	166
4.2.1	Diagnosing the problem (DP)	166
4.2.2	Developing alternatives (DA)	169
4.2.3	Evaluating available alternatives (EA)	171
4.2.4	Choosing the best alternative (CA).....	174
4.2.5	Implementing the chosen alternative (IA)	176
4.2.6	Monitoring and following up with the alternative implemented (MEA) 179	
4.3	Other strategic practices relating to Decision making among SMEs (SPDM) 181	
4.3.1	Evaluating the current performance (ECP).....	181
4.3.2	Evaluating managerial performance (EMP)	183
4.3.3	Evaluation of managers' performance (EMSP).....	186
4.3.4	Strategic analysis (Internal resources) (SAIR)	188
4.3.5	Strategic analysis (S.W.O.T) (SASWOT)	190
4.4	The performance of SMEs (SMEsP).....	193
4.4.1	Performance growth among SMEs (PG)	193
4.4.2	Performance improvement during the last five years (PI).....	195
4.4.3	Internal performance of SMEs (IP).....	196
4.4.4	Learning growth and performance (LGP).....	198
4.5	Mediating and moderating variables:	201
4.5.1	Organizational learning (OL).....	201
4.5.2	Traditional decision making practices (TDMPs).....	204
4.5.3	Information technology systems in decision making (ITinDM).....	206
4.5.4	Entrepreneurial competencies (ECs).....	209
4.5.5	Willingness for further training and education (WFFTE)	212
4.6	Analysis of variance	215
4.6.1	Differences in DMPs based on enterprises' characteristics.....	215
4.6.2	Differences in DMPs based on managers' characteristics:.....	217
4.6.3	Differences in SMEs performance based on enterprises' characteristics	219

4.6.4	Differences in SMEs performance based on managers' characteristics	221
4.7	Assessment of the measurement model (Confirmatory Factor Analysis).....	223
4.7.1	Assessment of the zero-order model.....	223
4.7.2	Assessment of the second order model.....	237
4.8	Assessment of the structure model	240
4.8.1	Assessment of multicollinearity.....	240
4.8.2	Assessment of the significance and relevance of the relationships across the model	241
4.8.3	Assessment of the explanatory power of the model	262
4.8.4	Assessment of the predictive power of the model	264
4.9	Mediation analysis	267
4.9.1	Direct effects	268
4.9.2	Indirect effects	269
4.9.3	Direct effect with the presence of mediators	271
4.10	Moderation analysis	272
4.11	Summary of hypothesis testing.....	274
4.11.1	DMPs adoption	274
4.11.2	Differences in adopting DMPs.....	274
4.11.3	Impact on SMEs performance	276
4.11.4	Mediation analysis	278
4.11.5	Moderation analysis	278
4.12	Discussion	279
5	Chapter Five: Findings, Suggestions and Conclusion	287
5.1	Findings of the study	287
5.2	Suggestions of the study	297
5.3	Conclusion	305
5.4	Scope for further research.....	308
5.5	Study Limitations	308
5.6	References	1
5.7	Appendices	29

Chapter One: Introduction

Researchers in economics have referred to the difference in productivity and performance across firms and companies in an economy, and further than this, across firms and companies in developed countries and developing countries (Foster, et al., 2008; Hsieh & Klenow, 2009). Bloom, et al. (2012) attribute this variation in productivity, performance and profitability to the variation in their management practices.

When Bloom and Van Reenen's (2007) worked on measuring management practices among manufacturing firms, they presented evidence that is considered eye opening and path breaking, where their evidence states that better-managed firms end up performing better with respect to business and in the market. However, their focus was limited to formal managerial practices and large manufacturing companies, supporting their claim that the management practices they are measuring are better suitable for large companies (Bloom, et al., 2012). This is typical when it comes to developed countries, but in the aspect of lower income economies, measuring the same management practices would not be as contributory as evidenced in the case of developed economies.

Hence, a need is raised with respect to investigating management practices and its relevance to developing and lower income/underdeveloped economies. This chapter is related to investigating management practices in two parts; in the first part, management practices are investigated/discussed in their relevance to the extent of developing and underdeveloped countries in order to be in a position to distinguish the difference in management practices and their adoption in a lower

income country; while in the second part, management practices are investigated in their relevance to the available research work in order to identify the contributions already made by previous research works and the research gap to be covered by the current study.

Part A: Management Practices and its relevance to developing and underdeveloped countries

Strategic management field has substantially advanced and progressed significantly in the last four decades, from being a business school capstone course to being an applied area to provide executives and practitioners with insights and assessments of key strategic choices (Bowman, et al., 2002).

The ability to understand modern management practices and techniques and applying them effectively is one of the keys to successful management, and knowledge about past and present models and theories is crucial for managers (Pindur, et al., 1995). Management has always been linked to business, even though it did not mean business management in its old history (Le Texier, 2013).

Management is “A process of accomplishing organizational goals through planning, organizing, leading, and controlling people and other resources of an organization” (Nickels, et al., 2016). It can be stated that management is applicable to every organization, as it helps the organization get products and services ready in a continuous process through a set of commonly followed processes such as planning, budgeting, structuring jobs, staffing, measuring performance and decision

making, for the purpose of driving the organization towards its intended goals (Kotter, 2013).

Management is about effectiveness and efficiency, as it is characterized by continuous activities and processes, reaching organizational goals, and working with or through people. Therefore, effectiveness is achieved through carrying out the right and appropriate tasks and responsibilities, while efficiency is attained through carrying these tasks and responsibilities in the most efficient time and cost (Shinde, 2018; Sharma, 2014). It is also “a social process of identifying and accomplishing group objectives (Adizes, 1971).

Management has evolved due to the industrial revolution, technological development, expansion of human activities and the spread of their existence, and increased focus on specialization and diversity in the modern society. Therefore, the advancement we see in the world is considered an outcome of the development and enhancement of managerial practices in organizations. This leads to the need to study and develop management in firms and organizations since the industrial revolution until today. The development in economic processes was more than the development in the managerial processes during the industrial revolution, this made Marx and Engels state the concern of the revolution by the workers, due to the lack of initiatives for development of employees in such organizations (Heller, 2011).

Taking into consideration the need of the world for new management theories to achieve development, professor Sumantra Ghoshal, (2005) stated that business schools should not create new courses or make much efforts to prevent future collapses such as Enron; instead, they are in need to refrain from doing things they are currently doing. Moreover, he states that it has been done so much to strengthen management to the extent of being condemned. He attributed the recent “bad”

management practices to the ideas emerging from business schools/academics providing example of teaching students in strategic management courses that the competition of firms is not only with competitors, instead, it is also with customers, employers and suppliers as well, which has been taught to thousands of executives who attended business schools so much so that the ones who did not attend business schools are also influenced by that too.

Attention was paid towards how managerial practices are influenced by management research in the literature (Donaldson, 2002; Pfeffer & Fong, 2002; Mintzberg & Gosling, 2002; Hambrick, 1994; Leavitt, 1989; Porter & McKibbin, 1988), the indication has geared towards the lack of impact on management practices by management research and education. However, some scholars such as Sumantra Ghoshal (2005), criticized the impact of management research and education for having a significant negative impact on the management principles practiced, and blamed business schools for freeing their students from the sense of moral responsibility.

Pfeffer, (2005) agreed with the claims raised by Sumantra Ghoshal (2005) and further questioned what has caused the ascendancy of such harmful ideas to maintain, and his work conducted that business education is institutionalized heavily. Therefore, institutions need to respond to such changes by adopting changes and incorporating courses and materials.

Paying attention to developing the managerial practices was the reason that revved up Fuji Photo Film Company, as it was defined as a chronic underperformer in film manufacturing during the 1930s, but then improved its reputation by developing the quality standards and managerial practices to emerge as a significant global firm in film processing.

To remain on top in an increasingly heated global competition, requires building up well-recognized brands, managing sufficiently, and developing quality products (McGrath, 2013). The disaster of Enron corporation is a classical example of neglecting such attention towards management practices, where the directors could have prevented the downfall of the company, had they would have taken the time to request and evaluate the rationale behind the off-balance partnership proposal of the CEO, this implies that improved decision making can be protective and can be generative as well (Useem, 2006). This also underscores the importance of ethical business behaviour and the need for regulations enforcement, moreover, it focuses the attention on the distance to be maintained between business and government (Sridharan, et al., 2002).

Davies (2005) stated five significant trends that shape organizations in the twenty first century which are diversity, flexible working conditions, flattened hierarchies, market-based career planning, and the decision to end an individual's career. Such trends, when coupled with intangible assets of organizations – such as customer relationships, brands, research and organizational flexibility would act as a key source of competitive advantage. Providing effective management for such assets or trends have an effect on the performance of organizations, similarly, failing to manage them effectively leads to an increasingly catastrophic influence of their performance (Armstrong, 2005). This highlights the need for monitoring the managerial practices adopted to manage the functions and performance of organizations to assure effective performance and better outcome.

Meeting the challenge of managing the performance effectively through people and their contribution to shaping and delivering strategy better than the ones that are

good enough today, and their existence as an asset to the business and their diversity in knowledge, skills and talents (Armstrong, 2005).

In the twenty first century, organizations are pressured to focus on one particular source which is human capital because there is no single route to assured success. Attracting skilled and creative people and enhancing those special qualities is a key factor towards ensuring better performance and productivity (Hamish, 2005).

Business starts and ends with customers, but exceeding the expectations of customers and attaining customer satisfaction is dependent on building strategies based on continuous changes and improvement, that are increasing due to increased expectations of customers, changing view of business organizations, technology, globalization, and the concept of the corporate citizen (Gooding, 2005).

Therefore, the role of management changes in order to respond accordingly to such trends and changes in the business environment, which simultaneously means that not responding to such continuous changes requires a managerial change which in-turn results in management developing for better productivity and performance.

1.1 Developing management practices for better performance

Before evolving into the consequences of developing managerial practices, it is worth mentioning that management practices differ from company to company, country to country, culture to culture etc., as for the causes of the variation in management practices, Bloom & Reenen, (2010) investigated the productivity variations across firms and companies in different countries and associated the variation of productivity to the variation of managerial practices followed and adopted among firms and companies summarizing that management practices vary among firms across sectors and countries, firms with better management practices

have better performance, through, being larger, faster, more productive and having higher survival rates. Better management practices can be scored on aspect but may not be scored in others. For instance, firms may score better in incentives but may not score better in monitoring etc. and that could be caused by the effect of product market competition in some aspects on firms and companies.

Interactions with overseas and adopting intensive human capitals have a positive effect on management practice, for example, firms and companies that indulge in exporting rather than producing, tend to have better management practices, although such practices are not as better as the one observed among multinational companies. Firms of government and those who appoint family members as executives are badly managed on average.

Moreover, another obvious that needs to be addressed is as to why management practices differ across firms and companies, there is due attention that has been paid towards the variation of management practice in firms and companies. Bloom & Reenen, (2007) attribute such difference to the low level of production or product market competition which allows the poor managerial practices to exist and persist, and passing the managerial control in family companies through using primogeniture.¹

Cost is a deterrent factor for many firms and companies for their ability to adopt better management practices, regardless of its importance, and the key role such management practices play in enhancing productivity and profitability of firms and companies; further, it is also considered as a costly investment that its costs are considered to outweigh the assumed benefits. Moreover, it is seen that even though

¹ The system by which a company, authority or property that is owned by a man goes to his oldest son after his death

developing management improves the productivity, the profitability will not rise significantly due to the increased costs. Another reason is that managers do not resist adopting poor managerial practices so as to avoid the great effort required for transforming themselves to adopt better managerial practices. The heterogeneity and optimal level of practices influence adopting better management practices, as investment made to develop management practices becomes less effective especially when it is associated with a high level of heterogeneity (Bloom & Van Reenen, 2007).

Attention in the literature has been geared towards; the role played by effective management practice adopted on the productivity, efficiency, and profitability of any organizations (Bloom & Van Reenen, 2007; 2010; Bloom, et al., 2012; Bloom, et al., 2013; Brito & Sauan, 2016), and presents a significant evidence that following sound and effective management practices leads to better productivity, efficiency, and profitability (Bloom, et al., 2013). In an experimental study of the textile industries in India, managerial consultation was provided to a set of multi-plants companies, in comparison with a control group set for the study, and it was observed significantly and positively in favour of improving the productivity and profitability as adopting better management practices contributed in the first year to raising productivity by 17% by enhancing the quality and efficiency thereby reducing inventory which also led to opening more production plants within a span of three years.

This implies the reiteration that management practices have a direct impact on the human resource outcome as well as their individual performance. Moreover, it provides a 'Yes' answer to the question, does using updated management practices enhance the firm's performance (Bloom, et al., 2012), as the relationship between

the management level and the three dimensions of performance of firms and companies – which are productivity, growth and profitability has been proven to be significant in the literature (Brito & Sauan, 2016), Adopting high levels of managerial practices can be affected negatively by managerial hubris, being an influential component expected to impact their performance, business units should evaluate how higher levels in the managerial ladder needs to be developed (Brito & Sauan, 2016; Ou, et al., 2018; Picone, et al., 2014).

1.2 Towards developing management practice

The application of Fayol's management principles and their connection with Porter's competitive strategies determines firms future. Such principles are not inclusive and not applicable in all circumstances as well. Age-old ideas can be adopted and applied to the present, it is recognized that not all 14 principles apply in all circumstances, also some modern principles are needed to rev up the idea of strategy like Micheal Porter's which is cost leadership and differentiation, as applying cost leadership strategy gets along with the principles of unity of direction, unity of command, authority and responsibility, division of work and scalar chain. But the principles of esprit de corps, initiative and stability of tenure of personnel apply better to implementing differentiation strategy. The other six principle apply to implementing both strategies (Wook Yoo, et al., 2006). Moreover, due to the recognition of managers need to simultaneously practice sound and effective management whilst delivering and realizing the desired goals and keeping up their progression, attention is paid towards developing management practices in firms and companies in order to improvise frameworks that suit the goals realization and

improving productivity, performance and profitability (Bryson & Forth, 2018; BEIS, 2019; Brito & Sauan, 2016).

The development management and leadership can and does contribute towards enhancing performance for social and economic benefits, although it does not contribute to its full potential, because further benefits as well as gains could be obtained and utilized by the company through continuous improvement of the managerial practices and processes adopted by them (Burgoyne, et al., 2004).

Management practices are developed and upgraded in firms and companies through various approaches and strategies. The process of developing management practices involves assessment of the current managerial practices in firms and companies. Assessing the performance, productivity, skills as well as expectations by conducting tests, is very common among organizations to adopt the precise sound and effective management and leadership practices for realizing their intended goals and objectives (Chamorro-Premuzic, 2015).

Survey of Management practices is considered an essential tool for assessing management practices and its efficiency among organizations; such assessment becomes crucial to evaluate the performance management, relating to overall organizational productivity. Moreover, managers can be effective with respect to performance management functions but they may not be similarly effective at ensuring consistent work opportunities; this creates the need for in-house and university (formal) management training for the inclusion of practices and behaviour management (Abernathy, 2011). The importance of improving the precision while investing in management development is more than the importance of just increasing such investments to develop the management and leadership. Because, the contribution of management towards performance differs, based on the

context and situation implying that management contributes towards performance and productivity in multiple rather than a single way. Therefore, the key is to create harmonization between the right approach to management with the context of management (Burgoyne, et al., 2004).

Lack of assessment, evaluation and development of managerial practices in firms and companies contributes to creation of a gap between the productivity of such firms and companies. Bloom, et. al., (2014) found in a study that a quarter to third of the total factor productivity gaps in firms and companies are related to management practices, as they are crucial both quantitatively and qualitatively in determining the performance of a company. Around 30% of the differences in the firms' productivity is accounted to the differences in management practices (Bloom, et al., 2016).

The inconsistency in performance management practices results in ineffective performance of firms and companies, triggering the need to adopt managerial practices such as, performance appraisal, measurement and evaluation, motivation, goal setting, training and leadership (Davis, 2015).

Adopting and following sound and effective management practices is supposed to integrate with the performance management systems, in order to obtain consistent results. The importance of employees' performance as well as the greater advantage that may be achieved by implementing more effective performance management practices (Davis, 2015). Management practices are persistent over time, and their importance grows when the firm faces an increased competition in the product market or when the firm upgrades its skills, and also with new managers on site, which indicates that managerial turnover can be a source for better management practices (Bloom, et al., 2011).

Management practices affect the application of information and communication technology in firms and companies, especially human resource management and operational management (Obonyo, et al., 2018).

The individual performance as well as the corporate reputation is influenced directly as well as indirectly by, the management style of the CEOs; which implies that the management style is an antecedent for strategic orientation, which influences their reputation (Dutot, 2017). CEO humility can positively influence the performance as well as the outcome of a firm, which means that, when a firm is led by a more humble CEO it becomes more likely that the top management team make decisions together collaboratively and have a shared vision as well, and adopt an ambidextrous strategic orientation (Ou, et al., 2018). The characteristics of managers like age, position, experience and education level, all obviously affect the types of tools and techniques they use in the managerial process (Tereso, et al., 2019).

Introducing new management practices in a firm relates to improving the firm's future performance and productivity, innovative management practices are developed by interacting with the internal and external sources of knowledge, and company would introduce new management practices when offered by internal and professionals and not merely by the market participants. Industries can have similar management innovation levels but the new adopted management practices varies from one industry to another, which stresses the association of management innovation with the firm's performance in future (Mol & Birkinshaw, 2009).

The adopted management style can be mixed from local and international dimensions resulting from an integration of internal factors such as social, economic, religious, and cultural factors, and external factors caused by

globalization, need for advanced technology and growth etc. (Alyousif, et al., 2010). Normally, the set of business practices adopted by firms and companies including the small businesses units has an effect on their outcomes, which is economically meaningful and statistically significant, so the better the set of practices, more the sales, productivity and thereby increased profit (McKenzie & Woodruff, 2015).

Management practices vary among firms and companies, some variation lies across plants in the same company, moreover, the variation in management practices accounts for 20% of productivity spread. Two crucial drivers affecting management practices in firms and companies, which, are business environment regulation and Learning spillovers; as they increase the management score among firms and organizations (Bloom, et al., 2019).

Some practices are positively associated with the firm's innovativeness, such as, strategic planning and implementation, also updating relative activities to redress the gap between knowledge and assess the needed knowledge as well as other practices such as communicating the goals, and identifying the gaps in the strategic knowledge. This implies that companies are better to adopt the incentive systems based on knowledge activities so employees engage more to enhance the overall performance of the company (Inkinen, et al., 2015). Management practices such as project management practices differ according to the sector while some practices exist in all sectors such as baseline plan and activity list. There are practices that are most used in organizations which cover all life cycles of the projects especially the planning cycle identifies the five most used tools and techniques such as: baseline plan, activity list, progress meetings, kick-off meeting and the Gantt chart (Tereso, et al., 2019).

The success or failure of managerial practices is mainly dependent on the firm's conditions, including the nature of relationship the firm shares with its employees in the long term, in addition to other management practices and the environment in which the firm operates. When adopting new practices, firms and companies should make sure that such practices have worked in similar firms with similar relationships with their employees, which can point out the importance of measuring management practices, and how employees perceive their relationships with their employers (Blader, et al., 2016).

The ability of employees, especially managers can be the reason why there is a considerable importance to the managerial practices among companies, as it is evident in the literature that the abilities of employees is positively associated with management practices among firms and companies, implying that companies with high managerial human capital have higher productivity, which also implies that managerial human capital is crucial to maintain better management practices (Bender, et al., 2018).

The continuous enhancement and evaluation to gain an insight into how management is applied in firms and companies, as an influence of the outcome of adopted management practices in turn may lead to better management quality as well as better productivity. Mahesh, (2015) identified two clusters of companies with respect to following and adopting sound and effective management practices; the first cluster consisting of small, medium and large global multinationals, while the other cluster containing the local small, medium and large companies, have different managerial practices from those adopted in MNCs. Concluding that the managerial practices in the IT sector are moving towards universal management practices, highlighting the need of organizations to have a realistic understanding of

their management practices so as to improve shortfalls and succeed in the competitive world.

This raises a question about the possibility of applying management theories and styles from countries to others. Shafter & Abdelmotleb (2017) stated that it is problematic to apply western management theories in developing countries, due to the complex national environment which makes the clinical type of approach better and more suitable in being effective to generate and develop managerial theories. Moreover, identifying, discussing and managing the areas of competencies becomes essential for the organizations to address the global influence on managing, which can be a part of global management mindset, which is essential in the developing world (Shafter & Abdelmotleb, 2017).

When it comes to comparing managerial practices among managers in public and private sectors, managers in the private sectors prefer to rely on the outcomes of analytics rather than experience and bargaining, in order to support budgeting decisions, while public sector managers tend to rely more on bargaining and experience to support their budget decisions, so as to avoid relying on the outcome of analytics, backed by networking (Nutt, 2005).

This makes the need for sound and effective managerial practices very obvious, to revive the performance of businesses in the Arab region with respect to providing a conducive environment for businesses to grow and expand. Also the need for paying due attention to the factors that impact the supply of workforce and talents such as training, education, and other factors would develop the access to talents and skilled workforce.

1.3 Decision making practices

Decision making is the most crucial part of any job in an organization, it is considered to be the riskiest and toughest part of the job, as good decisions lead to better business performance and bad decisions lead to worsened and damaged business performance (Hammond, et al., 1998).

Making traditional decisions or old-fashioned decision does not fit well in a world that is competitive, especially in two critical areas which are, having too much information and too little time. However, having information collected is not as same as obtaining knowledge, hence processing information from raw facts to rich meaningful information to make better decisions becomes critical as well (Etzioni, 2001).

Drucker, opined that, the decision making is one of the task of executive, it is supposed to take small part of their time, however, important decisions take more time of the executives as they are making decisions in a systematic process that is identified with specific elements and steps that are distinctly sequenced. Therefore, it is expected that executives make decisions that have impact on the performance, development and growth of businesses or organizations (Drucker, 1967).

The practice of decision making is challenging and complex. What makes it more complex is obtaining the relevant information amongst uncertainty and entropy. The importance of the information increases when it is about the future, where forecasting models based on statistical methods are used to predict the development, and determine which better and effective decision can be made to develop the business process among firms and companies (Marček, et al., 2011).

This raises a question, “what causes bad decisions in an organization”, Hammond, et al., (1998) explains that bad managerial decision result from the incomplete adherence to the decision making practices. For instance, when managers do not fully identify the alternatives of the decision, it could lead to a decision that is poorly made. When the right information is not collected, there is a chance for making poor decisions. However, sometimes these steps are easily adopted, but the decision maker fails to fully utilize any possibilities and potential to make a successful decision in the organization. In this context, Drucker further explains that without following the sequential steps, decision maker still can make the decisions but calling the decisions effective will become questionable (Drucker, 1967).

While considering the decision making practices observed in the Arab world, research is very scant to present evidences with respect to the extent of adopting of decision making practices among businesses, this is one of the major reasons the objectives of this study are directed towards investigating the decision making practices and how they contribute to the betterment of the business performance.

1.4 The Arab context of management and decision making

Management in the Arab world has been affected by the attribution of literature of economics, anthropology and sociology which led to developing a theoretical framework with which the western thoughts often conflict (Welsh & Raven, 2006). It is evident in the literature that the theories of contemporary management are new to the Arab management, which makes it difficult to adopt such theories by the Arab organizations as they are designed to fit with the western management styles (Ali, 1995).

Centralization is considered as one of the main characteristics of management in the Arab region, which has also been referred in Hofstede's power distance dimension, leading to the lack of delegation as another obstacle making it a big disadvantage in the Arab management system (Obeidat, et al., 2012). The poor coordination and connection between task and responsibilities in organizations intensifies the imbalance in the performance of the organization (Al-Rasheed, 2001), and forms the organizational problems due to economic, political and organizational factors (Attiyah, 1993).

Personalizing the superior/subordinate relationships is another disadvantage of the Arab management system, which has created a large power distance in the Arab culture and has led to increased employees' loyalty among individuals instead of the organization itself (Al-Rasheed, 2001).

Private and family businesses are less bureaucratic, authoritarian, and impersonal in the Arab region (De Vries, 1993), as the consultative methods of decision making as well as management are more common and preferred among Islamic sects as it does not contradict with traditional beliefs of tribes (Ali, 1989). The focus on the private and family run business is quite common in the Arab World, as the tribal societies pay more attention to the family and its growth and interests, and families predominate in society and politics. So, the difference in private and family businesses in the middle east and the western world is majorly based on their culture (Welsh & Raven, 2006).

Even though, there is scant research into actual management practices in the Arab context, business societies in the Arab Region are in transition from working in a traditional way towards a mix of Arab and Western business practices. Introducing western and eastern management practices successfully is possible due to the

transition situation, with the organization tailoring to reflect the unique nature of business context in the Arab Region (De Waal & Frijns, 2016).

There is a high perception of Arab management pillars such as counselling concept, justice concept and service concept, also a statistical impact of Arab management on employees' performance, which suggests that the application of Arab management theory for enhancing its role in employees' performance can be achieved by attracting leaders who believe in Arab culture and Islamic values (Al-Kasasbeh, 2016).

1.5 Managerial practices in enterprises in Yemen

Due to the availability of scant literature relevant to the managerial perspective of SMEs in Yemen, it necessitates research in this domain. In order to pick the appropriate and precise research gap and scope, a review was required to view the possibilities that could lead us to choosing the scope that could be contributive to solving managerial issues as well as leading to future research and studies.

The review of the available literature led to finding out attention that has been geared towards the management and development of human resources in Yemen (Rashid, 2000), HRM and its practices in private sector (Muharram, 2007; Al-Jaadabi, 2012), the benefits of investing in human capital (Qarshi, 2013), and the role played by universities in preparing human resources (Kolaib, 2002). Moreover, governance and administrative reform in Yemen (Hassan, 1970; Shamsan, 2004), , labour market and job market (Toki & Qadhi, 2015) and evaluating performance management in large industrial companies (Ahmed, 2005) have gained some attention in the literature in addition to the obstacles faced by the manufacturing sector in Yemen (Aamer, 2015), and the role of management in success of

organization which was dedicated towards Islamic banks in the country (Aiedh, 2010).

The status of function of small and medium enterprises in Yemen was reviewed (Al-Maqaleh, 2012), which did not give due attention to the managerial perspective of SMEs in Yemen and how to improve it. Along with the enterprises survey of the World bank that was conducted in 2012 (World Bank Group, 2013), the role of small enterprises in the economic development in Yemen was reviewed as well (Al-Iryani, 2015) which also indicated that SMEs in Yemen do not have official structures, and the businesses generally lack clarity on decision making and do not have a management cycle.

Strategic planning (Nusair & Osman, 2016), and innovation (AlQershi, et al., 2018) and their association and influence on the performance of SMEs, and the determinants impacting SMEs performance (Alhammadi, et al., 2013), which did not investigate the managerial practices adopted by enterprises and the measures essential to develop them in order to improve their performance and increase their productivity and profitability.

As long as developing management and adopting sound management practices have been proven to impact the performance, productivity and profitability of SMEs in developed and developing countries (Bloom & Van Reenen, 2007; 2010; Bloom, et al., 2012; Bloom, et al., 2013; Brito & Sauan, 2016). This triggers the need to investigate the possibility and benefits of adopting sound and effective managerial practices among SMEs in Yemen and how this would contribute to providing resurgence to the manufacturing sector and thereby the economic growth and prosperity.

Therefore, the focus of this study is geared towards the decision making practices (DMPs) among manufacturing SMEs is due to two major reasons, the first reason is that SMEs constitute the majority of the Yemeni manufacturing sector, and the second reason being the decision making practices and its contribute towards better performance especially during the current times – where instability is witnessed in the country in light of the prevailing political and economic unrest.

It is expected that this study contributes towards drawing the attention towards the status of decision making practices among managers/owners of SMEs and further how such decision making plays a significant role in shaping the performance of such manufacturing SMEs. Hence, the study aims to apply survey based research methods to quantify the extent of decision making practice as well as the performance of manufacturing SMEs in Yemen.

Part B: Research and its contribution to Management Practices in Developing/Underdeveloped Countries

This section presents the intensive investigation of the available literature and the related previous studies in order to gain an insight into the managerial practices and their importance for enterprises in the general context, the decision making practices and their role in the performance of enterprises in specific. The purpose of such investigation of the literature is to identify trends and achievement realized in the research domain through which a new research objective can be set to further resolve the issues that have not yet been investigated by the previous research works.

1.6 Importance of Management for an Organization

Management is related to all human activities like security, agriculture, trade, education, organization, and achieving the goals of societies. Therefore, the importance of management has continuously increased due to its importance in realizing common goals, improving workers and processes efficiency, contributing towards developing a better society, bringing harmony and uniformity among employees and their activities (Ali, 2006; Maghribi, 2016).

Managerial practices benefit teams and individuals in organizations to deal with obstacles and challenges which make them crucial/important to organizations due to:

- a) Functioning under an environment of economic and technological changes along with uncertainty, complexity and chaos.
- b) As management is linked to organizations, it is linked to their activities as well, by coordinating various activities within an organization.
- c) Management enhances the relationships between management and employees as an incentive for better productivity, otherwise, management becomes an obstacle by itself.
- d) Due to the leading role in the developing economies, management fulfils the goals and plans, and acts as a key measure for successfully running an organization (Shebli, 2018).

Management has become challenging as a practice because of concepts and theories that keep evolving continuously facilitating the solution of problems and issues in leadership, ethics and values, society and culture, to name a few, these issues affect the growth and sustainability of enterprises and organizations, and due to the difference among cultures and countries, the management practices become different accordingly.

Gary Hamel (Hamel, 2008) as well as Rakesh Khurana (Khurana, 2010) argued that the efforts have failed to create a science of management, and that the modern study of management is out dated. However, on the other hand, there are other authors who studied management practices and how developing managerial practices in an organization leads to better productivity, quality, value added, and profitability.

Bloom and Van Reenen (2007) compared the managerial practices and the performance of more than 700 manufacturing firm in four developed countries; namely, Germany, Great Britain, the United States and France, with respect to their

operations management, talent management and performance management, and explored that management practice can be well established in firms and companies, sticking to such management practices and principles leads to better results and better outcome, the firms' leadership decide whether or not to adopt effective managerial practices. Large firms adopt management practices better than small and medium sized firms, moreover, multinational are the top organizations to adopt sound and effective managerial practices (Bloom & Van Reenen, 2007).

Analysing data of more than 10,000 manufacturing companies across 20 developed and developing countries, it is measured that the managerial practices of manufacturing firms are the best in Japan, the US, and Germany (Bloom, et al., 2012) implying that managerial practices are better in developed countries than in developing economies like Brazil, India and China. However, not all managerial practices in developed countries are effective, further, this study also concludes that hospitals and the retail industry in America are better managed, the American school systems are poorly managed when compared to other developed countries and other American industries. Yet this does not imply that they are worse managed when compared to developing countries. The study shed light to a huge variation in management practices among organizations across sectors and countries, and the nature of ownership being the key driver of such variation. As ownership plays a critical role in identifying the way, methods and strategies of running such firms and organizations. The study further concludes that, where on one hand, poorly managed firms were found to be owned by government, family or their own founders, on the other hand, well managed firms were found to be multinational or private-equity owned firms and companies (Bloom, et al., 2012; Bloom & Van Reenen, 2010).

Hogan & Kaiser, (2005) believed that bad management can cause serious moral implication, due to lack of sound and effective managerial practices adopted, (which is conceptualized in the literature as “managerial incompetence”) which implies the lack of essential characteristics for realizing success. However, failure is more related to possessing undesirable qualities than lacking the desirable characteristics (Hogan & Kaiser, 2005). The possibility is high that management can hamper the productivity of human capitals when such practices are inconsistent with their values. Problematic employees have an impact on employees’ actions, because learning bad behaviours among co-workers is easier than learning the good behaviours and practices. This puts pressure on management to ensure such behaviour or practices do not exist in the organization, as well as preventing the likelihood of it happening in the future (Dimmock & Gerken, 2018). Being a manager during a downturn of a firm or an organization is challenging, especially in today’s competitive world, due to the need to rethink and focus on well justified concerns, predictability, understanding, compassion and control for the purpose of thriving when condition improves (Sutton, 2009).

Changes in the business environment cause major challenges for companies, as it requires them to adapt and respond effectively. While adapting or responding to such changes, there is a possibility of recovering after painful rounds of restructuring, reforming, downsizing etc. and such changes may paralyse the firms and organizations, further, this can be avoided only when managers spot the change early enough to respond to it effectively (Tomé, 2003).

The differences in resources and capabilities as well as business environments among other factors, lead to the variation of management and managerial practices

across firms, organizations, sectors and countries, as the management practices cannot be universally identified for all firms, sectors and countries.

Bloom, et. al., (2012) provided an analysis of manufacturing companies across 20 developed and developing countries and came out with a conclusion that affirms the difference of management practices among firms and countries, by investigating three operations-focused dimensions to be in a position to distinguish the differences existing in the managerial practices observed among firms and organizations, sectors, and countries. These dimensions are; monitoring the firm's performance (Production management), setting target (planning and organizing), and incentives (people management or human capital management). Their research led to exploring the differences of adopting and following management practices among firms and organizations in developed and developing countries; as organizations in developed countries, were found better managed than organizations in developing countries. As manufacturing firms and companies in the United States scored the highest among other countries in the study, while firms in other countries such as Sweden, Japan, Germany, and Canada were well managed as well.

On one hand, it is not surprising to observe that manufacturing firms in developed countries score high in adopting better management practices, due to, the availability of resources, human capital, technology, regulations, conducive business environment and many other factors that facilitate doing business and functioning by adopting sound and effective managerial practices for obtaining better outcome. On the other hand, it is typical that firms and organizations in developing countries like China, Brazil and India were less with respect to being well managed organizations than the organization in developed countries, Bloom, et. al., (2012) in their study, interestingly reflect the difference in the status among

developed and developing countries with respect to obtaining the resources, technology, conducive environment, and human capitals.

This leads us to the question “are the management practices similar among firms and companies in each developing country”, the same study of Bloom, et. al., (2012) provided evidence that managerial practices differ among firms, companies, and sectors in the same country. Regardless of the similarity of conditions such as the business environment, regulations, society and culture, management practices still vary among such firms as an influence of other factors that contribute to such variation, which includes ownership, as the study shows that founder-owned firms and the government owned firms are poorly managed in developing countries, in aspects such as lacking incentives as well as lacking performance-based promotions. This implies that the ownership of the firm plays a factor in adopting sound and effective management practices. Other factors as well play a role in differentiating managerial practices among firms and organizations in developed and developing countries.

More variation observations are observed with respect to managerial practices, have been investigated in the management literature. Nicholas Bloom and John Van Reenen (2010) have given attention to such variation in management practices among firms and companies and drew observations such as; a). Better management practices are accompanied with better performance, more productivity, faster growth and high survival rates. b). Managerial practices vary among firms and companies in each country, meaning that there are poorly managed, better managed and well managed firms in each country. c). The style of management differs among firms and companies, therefore better managed firm in one aspect can also be poorly managed firms in other aspects. d). factors such as competition affect managerial

practices adopted among firms and companies. e). Multinational firms are better managed in all countries, moreover, they transplant their managerial practices into the environment in which they function, yet they differ from each other. f). Firms that indulge in international trade activities such as exporting overseas are better managed than non-exporting firms and companies. g). Firms managed by family members of the owners/founders are very badly managed especially when primo geniture is considered. h). Government-owned firms are worse than family firms in adopting sound and effective managerial practices. i) Firms that use human capital in an intensive manner tend to have better managerial practices.

Agarwal, et al., (2014) investigated management practices in manufacturing firms in developed countries to find out the reason why some firms adopt management practices that are considered effective and innovative more than. The internal characteristics of firms influence the process of adopting innovative management practices implying a link between adopting sound and effective management practices, innovation and the productivity as multinational companies are better in adopting sound and effective management practices than other firms, similarly, the companies that adopt cluster of management practices are found to be likely better in productivity and confirming innovation.

Bloom, et al., (2013) explained that one of the major factors preventing firms and companies from adopting better and effective management practices are found to have informational barriers, as some firms were not familiar with modern management practices such as inventory norms, operating procedures, and other firms did not appreciate their role in improving their productivity. Such barriers were tackled by consultations given to the study sampled companies, moreover,

competition was also not a contributing factor to force bad managerial practices to exit.

Donald N. Sull, (1999) believed that when it comes to adopting managerial practices, the problem is not with the inability to take decisions but the inability to take the appropriate action, which can be caused in many ways that could be ranged from managerial stubbornness to sheer incompetence which the author describes as “active inertia” which is associated with inaction, or particularly is the tendency of an organization to adopt or follow an established pattern of behaviour or practices to response to environmental shifts which cannot be helpful in critical conditions that require appropriate actions.

This inertia creates the need for internal development in organizations, such internal development is supposed to lead a managerial change to adopt better and effective managerial practices which are helpful for the growth of the organizations. Because internal development is not a new term, it was the norm back in the 1950s, therefore every management development practice seeming novel today was commonplace during the decade of the 1950s including job rotation, executive coaching and high-potential programs (Cappelli, 2008).

Internal development with respect to managerial change can be carried out through inside leaders or outsiders, however, the literature suggests that companies perform on average when CEOs are brought from outside the organizations or they are promoted through ranks from inside the organization (Chung, et al., 1987; Karaevli & Zajac, 2012). Donald N. Sull, (1999) suggests choosing insider-outsiders who are the leaders within the company but from outside the core business can be brought from a smaller division or different departments within the company.

The failure of management to contribute towards the continuous growth and accelerating the development range in the industry change results in undesired upheavals in the company. If the management is occupied by the future conditions, then their efforts are concerned about shoring up today's business, which means paying attention to develop today's process instead of building and developing the industries for tomorrow that take part in the development process. Companies turn to reengineering because it offers hope of getting better and leaner as well better than restructuring to correct the past mistakes. Therefore, managers have to obtain answers to the questions pertaining to the future of the company, otherwise they cannot be leaders of market because leadership is not to sustain rather to regenerate again and again (Hamel & Prahalad, 1994). Senge also attributes the systematic inability to cope with complexity to the adherence to traditional scientific management approaches (Senge, 1994).

Peter Senge (1994) in his book "The Fifth discipline" argued that few large corporations live even half as long as a human being. Even in companies that are not able to achieve any success, evidence unveiling its inability of survival exists but it remains unheeded. However, it could be known to individual manager but not the company or organization as a whole. When people are surveyed about what they do for living, they describe their tasks but not the purpose of the enterprise, organization or company they are affiliated to. Because they put in their time to "do their job" and cope with obstacles beyond their control.

Senge identified the seven learning disabilities that can hinder the performance of organization as much as learning disabilities affect children. These disabilities include:

- a). focusing on positions instead of the purpose of organizations,

- b). ignoring how the actions go beyond the boundary of positions which is resulted from focusing on the position,
- c). the illusion of taking charge to solve problems before they grow into crises,
- d). fixating on short term events and ignoring the patterns of change beyond such events and their causes as well,
- e). the parable of the boiled frog and inability to spot gradual forces shaping the fate of the organization,
- f). The delusion of learning from experience when the consequence of the action is beyond the learning horizon, and last,
- g). the myth of the management team when managers make efforts not to be blamed or look bad which makes it difficult for organizations to learn (Sence, 1994).

Robert H. Schaffer (2017) argued that the management of change and not that change management is a sub-specialty of management, whether it involves increasing sales, implementing mergers, carrying out a new personnel policy, developing new products or improving productivity.

The growth of firms and companies maximizes the burdens and complexity in functions, and management is usually burdened with various functions, which they are not well equipped for (Thatcher, 1996). Research indicated that only 13% of enterprises expect to function after four years from establishment (Harvard Business Review, 2015). Dynamic environments force organization to adopt changes and development procedures (Jones & Rothwell, 2017).

Gordon Lippitt, (1982) argued that recognizing the need to focus on the management and organization development is critical for planning for a continuous renewal of organizations suggesting that the plan should be based on realities of future change and well-defined objectives as well as an articulated value system

relating to the organization purposes. In addition, it should also consider the essential needs of organizational development, and above all be well supported by the leadership practices.

Robert Nisbet (1969) presented few attributes to understand management development such as being intrinsic to the entity, being cumulative, irreversible and linked with self-development, having stages, directionality, purpose and it can't be done to individuals.

Pat Terry (1979) argued that management development will not contribute towards better performance without overcoming the problems by which it has been plagued for long enough to compromise performance and outcomes.

Management development should be considered as a duty of managers, and their groups are expected to develop skills, and the development programs should be restricted to transferring specific skills or practices among such groups (Hunt, 1982).

A question could be raised, "Can management development efforts fail", Margerison, (1982) pointed that management development would fail without clear policies, top management support, relevance to business plans, and finally lacking regular follow-ups (Margerison, 1982). Simultaneously, as management development would fail due to such factors, also management development would not succeed even due to one of such factors, therefore, a number of interrelated activities together would contribute towards the success of management development, and so identified factors impacting the success of management development such as selecting highly productive/achieving managers, involving teams in diagnosing the management development needs, enthusiastic managerial support, designing work related activities, emphasizing for outcomes, providing

early leadership experience, HR self-appraisal, being accountable to management development and following up with workshops and sessions (Margerison, 1982).

1.7 Developing management practices

Lees (1992) presented the faces of management development, which are considered the reasons why organizations adopt management development or invest resources in management development and contribute significantly, highlighting the aspects of raising questions regarding the meaning of management development.

The advancement in technology and the development in the business world has not made management less relevant. Business environment had been affected during the last decades of the 20th century, due to forces such as, the increasing effect of information technology. global competition, less consideration of job as a fixed collection of tasks, shifting from making products to providing services, business environment reengineering (Burke & Cooper, 2003), industry convergence, connectivity and digitalization, customization and customerization, and disintermediation and reintermediation (KoTLer, 2003).

Big data explosion reinforced the idea that management is a science that involves a tremendous amount of study and research for development, further, business decision must be data driven decisions, which means that the decisions are supposed to be dependent on the analysis of data. Even though Martin and Golsby-smith (2017) believed that regardless of the advancement of data analytics, it should not drive every business decision, such advancements, forces caused the shaping and reshaping processes of management practices. Research suggests that only 13% of enterprises expect to function after four years from the establishments (Harvard

Business Review, 2015), which leads to questioning the role of management in preventing any worsening conditions to the functions of enterprises.

Innovation and development in management processes and principles contribute to the creation of long-lasting advantage as well as produce dramatic shifts in competitive position (Hamel, 2006), which emphasizes the need for developing management and management innovation. This raise the question of what management innovation really is, Hamel (2006) defined it as a remarkable departure from customary organizational forms or traditional management practices, process and principles, which changes the way the managers function and do what they do, which may include; setting goals, motivating, accumulating and allocating resources, coordinating activities, developing talent, acquiring and applying knowledge.

1.8 Towards Management Practices in Small Enterprises

The nature of functioning of SMEs somehow differ from large firms and companies. SMEs often practice some of management practices such as, HRM, Marketing and Financial management practices with or without management knowledge, such as book keeping system, outsourcing accounting for financial statements, localizing their products, and using 4Ps (product, price, place and promotion) system as their marketing strategies (Mangaleswaran, 2015). Even though they follow and adopt some management practices, they do not utilize full range of some practices such as human resource practices, indicating that they are far from applying these practices while some apply it partially and sporadically.

Ates, et al., (2013) opined that SMEs are focused more on short term planning rather than long term planning, and experience gaps in the practices and the

performance, due to less balanced use of strategic as well as operational practices, necessitating them to improve the managerial aspects like the vision set for the firms' future, mission set for defining the activities of the firm, communication, change management and value development as well as effective performance management, which is impacted by their characteristics, by improving planning as a crucial step towards more effective performance management.

According to Forth & Bryson, (2019), SMEs are less likely to adopt formal managerial practices, however, adopting managerial practices brings remarkable benefits to SMEs due to a significant and positive relationship between management practices and company's survival, also between firm's growth and productivity. Even though the management literature indicates that firm's engaging in more practices focused on performance, goal setting, data analysis are to be better than firms engaging in less formal practices which could be inapplicable in small enterprises creates the need to investigate the return to formal management practices among SMEs.

Mehr & Omran, (2014), pointed that the managerial competence as well as the experience act as factors determining the success of enterprises. Successful enterprises are those having capable personnel who have sufficient experience to run and handle the projects effectively, also better budgeting, scheduling and technical design in order to promote their success and avoid future failure issues (Mehr & Omran, 2014). Hence, Mutemi, et al., (2014) opined that investing in personnel, customer loyalty, product differentiation and competitive advantages leads to a positive and significant effect on SMEs performance. Their performance can be influenced through some strategies such as: managing customer loyalty, investing in skills and personnel and product differentiation, including many other

strategies such as, delegation of duties and Communication. The performance can be compromised by new market entrants, the level of efficiency, innovative products and services (Mutemi, et al., 2014).

Management Practices Score (MPS) is positively related to many factors of productivity performance, such as firm's sales and profit per employee. Level of education and firm size positively affect management practices in enterprises (Agarwal, et al., 2013). significant association of managers and their workforces education levels and skills have with developing and deploying better management practices (Agarwal & Green, 2011). Research indicates that, market competition significantly influences management enterprises among enterprises (Bloom, et al., 2015; Bloom, et al., 2019; Bloom & Reenen, 2007). However, according to Agarwal, et. al. (2013), there is no significant effect of competition on management practicing, which is why the management practices are not universally and widely adopted and followed among manufacturing firm (Agarwal, et al., 2013).

Hussain, et al., (2010) opined that the factors that cause the failure of small and medium enterprises can be summarized as, the economic downturns, lack of management skills and education, excessive taxation, government's regulations and lack of necessary infrastructure (Hussain, et al., 2010). This implies the need for support for education and training to have better access to improved managerial and leadership skills and skilled labour force, updated with international practices, reducing the taxation level, adopting a proper policy to build an industrial base, and bringing reforms to the financial sector and easing the access to finance process for enterprises (Hussain, et al., 2010).

SME possess the basic elements of quality management practices with limited knowledge and exposure to proactive quality management concepts, also less

quality auditing procedures, with lack of required levels of governance over the sector. Therefore, the critical performance assessment is crucial to the success of quality management in SMEs in developing countries, further, poor quality performance is driven by corruption, fraud and poor workmanship. An effective quality performance assessment system is crucial for achieving objectives with continuous quality improvements, also training about advanced quality management to top management who can train their employees and teams (O'Maker, 2014).

Manufacturing enterprises are known to pay attention to adopt green supply chain management practices and following the regulatory awareness. Leading manufacturers in developing countries have a high level of awareness of environmental regulations and implementing management practices, while traditional manufacturers have limited awareness of environmental regulations leading to implementing green practices related to supply chain management (Zhu, et al., 2017). Enterprises consider the Green Supply Chain Management (GSCM) practices as a priority, and are willing to keep investing in environment protection, while some others report a very low return on investment. This triggers the need for SMEs needs to pay attention to economic performance, by reducing the cost of environmentally friendly materials, overhead and manufacturing expenses, and the governments' initiatives towards industries to enhance and improve the adoption of GSCM practices (Gandhi & Vasudevan, 2019).

1.9 The decision making practices

Many models and processes of decision making are proposed by scholars such as four models proposed by Pfeffer (2005a) which are the rational, organized,

bureaucratic and political models; five models proposed by Hart (1992) which are the rational, transactive, symbolic, command and the generative models – being relevant to the role played by top level management and the participation level of the members of the decision making group within an organization. Models such as these ones are mainly based on the behavioural decision making theories and the bounded rationality (Simon, 1982; March & Simon, 1958; Jocumsen, 2004).

Jocumsen, (2004) questioned the methods followed by managers and owners of small and medium enterprises with respect to strategic decision making, proposing a model for following, employing and executing strategic decision making among SMEs, where the decision making process involves initiating ideas, searching for information, analysing such information and then making the final decisions. Further, the author opined that networks and competencies are considered key methods in making such decisions, where they can be segregated as learned and inherent competencies, and internal and external networks.

Mintzberg, et al., (1976) in his publication “The structure of unstructured decision processes”, the author identified phases as well as the steps in the decision making process where he divided the phases into; identification, development and selection; while the steps have been divided into, decision recognition, decision diagnosis, searching routes, designing routes, screening, evaluating choices and authorization.

Huang, (2009) investigated the processes and practices of decision making among Chinese SMEs, and concluded that the process of strategic decision making is less complex than the theoretical models; personal networking is a major factor for identifying opportunities or searching/obtaining information among managers and owners of Chinese SMEs; the slack legal enforcement makes the

implementation of the strategic decision simple and quick, and the ownership acts as a major factor impacting how political activities of decision making are participated. This implies that the intuitive decision making is very common among SME managers/owners in China. Further, Gopaul & Rampersad, (2020) assessed the strategic decision making practices followed and adopted by SMEs in South Africa, and pointed that there are patterns of intuitive orientation in the process of making strategic and contributory decisions among SMEs which implies its dependence on the intuitive decision making style.

Carrera, (2019) explored the decision making practices among small and medium-sized petroleum companies in Africa. Through qualitative research method, the study identified three different themes of decision making. These themes established criteria to select an area of exploration as a vital part of decision making process. Setting and appointing specific schedules of time is said to act as a crucial criteria for the success of the decision making process; and the relationships and networking that the company has with other companies as a vital criteria for better decision making. The study concluded that the effective and successful decision making practices can be explored by looking into the continuous existence and capabilities of the company to pursue their corporate strategy.

Gibcus, et al., (2004) investigated the process of decision making followed/adopted among SMEs and reported that, decision makers are divided into five different categories, dare devils, lone rangers, busy bees, informers' friends and doubtful minds.

Gopaul, (2019) opined that when conducting strategic decision making as an intuitive approach among SMEs, the steps involved can be overlapped and iterative, but when the decision making mode becomes sequential in character, formulating

the decisions does not involve iterative or overlapped steps. This implies that a sequential process of evaluating and taking the required decisions becomes vital for SMEs seeking successful and contributory decisions.

Klingebiel & De Meyer, (2013) opined that the nature and type of the decision making process adopted is observed to be attached to the nature of emerging awareness with respect to the future events among managers. As managers tend to follow selectiveness, deliberateness and diligence, when they become aware of a new uncertainty, while they adopt problem solving adhocism as well as messiness when they are observed to be aware of a new certainty. The study concludes that during implementation, the differences and variations in the decision making processes are explained by the differences and variations in the awareness levels among managers.

Roberto, (2004) explored how managers take strategic decisions in their ventures and concluded that two critical processes can be adopted and followed while strategic decisions are made by the company, i.e. the cognitive/substantive process being the first process – where complex problems are gradually structured by managers by considering a series of immediate choices in regard to practical elements of the decisions. The second process being the political/symbolic process – where specific steps are taken to preserve the legitimacy of the decision making process.

Aldhaen, (2017) confirmed the impact on decision effectiveness; however, decision decentralization was not found to be a significant mediator, while rationality and intuition were found significantly mediating such impact. Further, the results showed that environmental factors are impacting the relationship of the effectiveness of the decisions with the rationality in decision making, and conclude

that, when it comes to higher education institutions, decision making practices significantly rely on rationality and intuition.

Long, et al., (2021) analyzed the impact of two types of decision making logics which are effectuation and causation. The study concluded that promoting new venture sustainability is negatively impacted by goal orientation and positively by avoiding contingencies. Further, new venture sustainability is positively influenced by partnership and negatively impacted by means orientation and leveraging contingencies.

Elbanna & Child, (2007) developed an integrative model identifying the influences on the rationality of strategic decision making. The authors opined that there are factors impacting the rationality of strategic decision making, and such factors are the decisions characteristics, the environment in which the company functions, and firms in general.

Shirindza, (2015) identified the the influence on the effectiveness of the strategic decision making, and identified factors such as, getting support from superiors, being in a competent team taking decisions, involving stakeholders, involving external business environment, regularly reviewing the process of decision making and ensuring the good quality of the data involved, as influential factors contributing to the effectiveness of the decision making process.

Elbanna & Child, (2007a) developed a model that measures the influences on the strategic decision effectiveness. The authors opined that rational and political decision making process influence the strategic decisions effectiveness more than what intuition does. Further, the effectiveness of strategic decisions can be considered context-specific as well as process-specific.

Papamichail & Rajaram, (2007) reviewed the available literature relevant to decision making for the purpose of assessing the decision making practices. The study identified a conceptual framework to investigate decision making practices which contains eight critical factors, and these factors are; process, context, efficiency, information, management structures, technology, people and skills, and overall performance of decisions.

Al Jassim, (2014) designed a model to understand strategic decision making among SMEs. The authors opined that when environment is dynamic, the decisions magnitude directly impacts the decision effectiveness and rationality in decision making, while it indirectly impacts the quality of the output of the commitment as well as the process of decision making in a firm, but it does not impact intuition. Further, the decisions effectiveness is significantly impacted by firm performance and the dynamism in the industry.

Sonet, (2010) opined that while making strategic decision, there are regional influences on managers. As managers from South and North China employ a different rank-order of influencing factors with respect to strategic decision making different from their counterparts in other Chinese areas.

Nutt, (2006) compared the decision making practices in the public and private sectors, and opined that public sector managers are more likely to support the decisions that are derived from bargaining, and are less likely to support budget decisions that are backed by analysis; on the contrary, managers in the private sectors opt to budget decisions that are backed by analysis; while they are less likely to opt to them when bargaining is concerned.

Zulfqar, et al., (2016) opined that the decision making practices followed and adopted by universities in the public and private sector are considered participative and transformational.

Aikins & Addy, (2021) investigated decision making practices in construction firms in Ghana and opined that there is a significant influence on decision making process among construction firms caused by internal as well as external factors and identified the most significant influential factors to be the plans implementation of the decisions, cognitive biases and the past decisions made by the firm.

Hamidi, (2021) investigated the decision making practices adopted by managers of Malaysian SMEs with respect to participating in government-sponsored training programs. The authors opined that there are two categories of decision making practices followed by managers of Malaysian SMEs, the first category being the procedural strategies which consisted of two sub-categories; collecting information and processing the collected information; while the second category involves protecting the family business and using gut feeling.

AlMazrouei, et al., (2016) investigated how expatriate managers in the UAE make decisions considering their contextual environment for the purpose of investigating decision making in different business environments. The study concluded that expatriate managers adopt a consultative management style of management in which it consists of hybrid approach of the strongest local as well as expatriates decision making style.

Xu, (2010) investigated the influence of pride and guilt as two different emotion experienced by managers, on the managers' strategic decision making, confirming that with higher levels of guilt among managers, more comprehensiveness, resource commitment along with decision making speed are detected along with low level of

risks. In addition to this, higher levels of decision making speed and risk along with low levels of resource commitment are observed when there are higher levels of pride among managers.

Sewandono, (2021) reported that effective strategic decision making has a significant mediating role in relationship between information systems capability, intellectual capital and the financial performance of firms and companies.

Kirkley, (2016) investigated entrepreneurial decision making and its cognitive antecedents along with the factors that may influence entrepreneurs to create their ventures. The study concluded that the decision making process with respect to venture creation among entrepreneurs is influenced by factors such as competition, market opportunity, technological development, market demands and the prevailing conditions of the market.

Geessinck, (2014) studied the association of imagination with the decision making process among entrepreneurs, the study measured the imagination with three dimensions; which are, prospective thinking, perspective thinking and the counterfactual thinking. The study opined that these three dimensions are used by entrepreneurs while making decision, yet there are other dimensions used by entrepreneurs as reported by the study; which are, communication, knowledge, experience and analytical tools. The study further opined that long term goals are used for evaluating possible alternative scenarios in the decision making process by the entrepreneurs.

Guo, (2018) studied the influence of effectuation and causation, which are approaches of making decisions and performing actions in the entrepreneurial process, to exploit the opportunity available to the entrepreneurs in high tech ventures. Further, the study explored how the effect of effectuation and causation in

the process of exploiting opportunities is intervened by entrepreneurial capability, as a mediating variable; and concluded that opportunity exploitation is significantly and positively influenced by effectuation and causation. Further, it is also observed that entrepreneurial capability among firms plays a full mediating role between effectuation and causation with opportunity exploitation.

Cho, (2015) proposed a model for technology development as well as strategic service planning, which is concerned with considering modern technologies with respect to enhancing service and product development. It is dedicated to policy makers and decision maker seeking better decisions on technology development. The model is supposed to fill a challenging gap which is the failure of companies to link the activity of developing products and services with the view of emerging technology. The main contribution of the model is centred on identifying relative importance of priorities regarding technologies, capturing areas of research focus, and identifying the direction of customers' needs and areas of commercialization endeavours.

1.10 The role of decision making in the business performance

Turyahebwa, et al., (2013) opined that more than 30% of the SMEs business performance variance is due to financial management practices, and working capital management is considered as a major effect of such variance. Adopting positive attitude towards financial management practices by the enterprises' owners and the managers is a must in order to realize the desired business performance in their enterprises, presenting a model for efficient financial management practices to provide a trajectory for better performance in SMEs.

Goll & Rasheed, (1997) investigated the association of rational decision making with firms performance and how this association is moderated by environmental munificence and dynamism. The key findings of the study confirmed presence of a strong association between the performance of firms and the rationality of decision making. Further, the study reported that environmental munificence and dynamism have a significantly moderating effect over the relationship of relational decision making in company with its performance.

Forbes, (2007) explored the role played by comprehensive decision in influencing firms' performance. The author reported an important impact of decision comprehensiveness on the performance of firms and enterprises. Further, the study reported that variables such as the decision quality and costs of the decision process is reflected on depleting the time and resources of the company successfully mediating the relationship between comprehensiveness and firms' performance.

Campos, et al., (2014) explored the impact of strategic decision making in different stages of the companies' life, in other words, during the growth stages of the company. The study concluded that strategic decision making is significantly impacting entrepreneurial orientation among young firms, and further, the entrepreneurial orientation is significantly correlated with firms' performance.

Robert Baum & Wally, (2003) investigated the decision making speed and how it is relevant to the performance of firms and enterprises. The authors opined that the subsequent growth as well as profit of a firm can be predicted by quicker strategic decision making process. Further, they also opined that the relationship of a firm's performance with centralization, formalization, dynamism, and munificence is mediated by fast strategic decision making.

In a similar pattern, Campos, et al., (2015) investigated how strategic decision making affects new technology based firms performance, and the mediating role of strategic decision making in relation to uncertainty, hostility, CEO model, and dynamism; with the performance of such firms. They confirmed their hypothesized statement which implies that strategic decision making influences the performance of new technology based firms, and it mediates the relationship of these variables with the firms' performance.

Oyewobi, et al., (2016) explored the organizational performance, that is caused by decision making styles and strategies among large organizations in South Africa. The results showed that all decision making styles are adopted among large organizations, however, the most significant adopted ones are, the directive and the analytical methods. Further, the results confirmed the impact of decision making style on organizational performance through competitive strategies.

Rehman, et al., (2012) explored the role of emotional intelligence in moderating the relationship of the decision making styles among employees with the organizational performance among firms and companies. Their results exhibited how decision making styles of employees significantly impact organizational performance, the high impact is observed with the rational and dependent styles while the avoidant style significantly and negatively influences firms performance. Further, it is also evidenced how the style of decision making influences the firms' performance which is also moderated by emotional intelligence.

Ferreira, (n.d.) conducted a review study to investigate how emotional intelligence is associated with the styles of leadership as well as decision making and organizational performance, concluding that the literature provides evidence that the effect of the leadership style and decision making style among firms and

companies on the performance of firms and companies is moderated by emotional intelligence. Further, the evidence also confirmed the impact of decision making style on organizational performance.

Abubakar, et al., (2019), in their review study, proposed a conceptual framework to measure the influence that knowledge creation has on the organizational performance. Where the knowledge creation is shaped through skills, IT-support and collaboration of organizational members impact organizational performance. Further, this relationship is moderated by the intuitive as well as rational decision making styles.

Deligianni, et al., (2016) investigated how the association between entrepreneurial orientation and international performance is moderated by decision making rationality. It is evidenced that entrepreneurial orientation among firms and companies has a significant influence on their international performance which is also significant, in addition, the effect is found to be moderated by the decision making process supported by bounded rationality. This reveals that managers and decision makers can apply the rational and analytical coupled with entrepreneurial orientation in the decision making process to improve their international performance.

Amason & Schweiger, (1994) reported the impact of cognitive and affective conflicts regarding the strategic decision making dimensions which also lead to influencing the firms performance. Such dimensions that could be influenced by conflict include decision quality, understanding of the decisions, commitment towards the decisions made, and affective acceptance of the team. The authors opined that the performance of firms and companies are positively influenced by

cognitive conflict and is negatively influenced by affective conflict on the practices and dimensions of strategic decision making among firms and companies.

1.11 The context of Yemen

Unifying Yemen happened by integrating the administrative systems of North and South Yemen, with their human resources without a proper study and analysis of the outcome of such integration. This led to inundating the newly-integrated administrative system with employees, which created extra administrative units just to absorb the workforce, rather than precise aims. The result of this was a dysfunctional administrative system with duplication and replication of tasks and responsibilities as well as overstaffing in some administrative departments, and such imbalances along with extra issues between North and South Parts of Yemen have stemmed from the political disagreements between the belligerents during the nineties. The Government adopted an economic, social and administrative reform program in 1994 (Alqatabri, 2011; Abutaleb, 1994; Shamsan, 2004; Arab Administrative Development Organization, 2002).

The recognition of human resource and their practices being more important in developing countries (including Yemen), is still in need for awareness and education to gain insight on the strategic role of employees in the success or failure of the business strategy. This is indicative that, the private sector in Yemen needs to put HR development and planning, management education (ME), employees' motivation, HR research and organizational development in its agenda (Muharram 2007).

The United Nations described Yemen as a young rising generation, as a generation without the cognitive skills that is essential for undertaking

entrepreneurial activities (UNDP, 2011). Lack of such skills is considered a common challenge among enterprises along with the high rate of turnover (Al-Maqaleh, 2012). Moreover, Yemen has been in the tail among other countries worldwide with respect to human development, as the rank of Yemen in the human development index (HDI) stood at 160th during 2013 (UNDP, 2013) and declined to become the 178th during 2018 (UNDP, 2018). This categorizes Yemen as a country with “Low human development” especially due to the political instability that is witnessed in the country (UNDP, 2013), which has also escalated the decline in the growth of human development process.

Real factors in Yemen such as, the cultural, social, and economic environments, lack of financial and economic resources, and the political conditions all have a strong influence on human resources management and development (Rashid, 2000). The educational level of employees in the departments of human resources management is very low in terms of, qualification, specialization, which is considered better in the private sector (Al-Jaadabi, 2012). In the general context, the workforce in Yemen (one-third of the labour force) have secondary or tertiary educational attainment. The mismatch relating to qualification among employees has an effect on the majority of them (83%) with respect to their main jobs. About half of all employed individuals in the country are employees or work for others, and around 42.4 percent are having either their own-account or contributing family workers (ILO, 2015).

One of the important results of technology revolution in developing countries like Yemen was that the tendency of modern management started focusing on developing the human capital. The decision to invest in human capital is a vital decision made by financial management teams. As in the economy of knowledge

and technology, it is necessary to increase any care for the human capital as an investment having its own revenue in the long run, with some cost to be handled by the organization for the sake of realizing such revenue (Qarshi, 2013).

The educational outcomes in Yemen are not well prepared for the job market which creates a gap between the education system and the needs of employers, despite the fact that higher education kept growing in Yemen during the last decade but not in a way to serve the job market (Toki & Qadhi, 2015). University graduates have weakness points with respect to having scientific majors, English language and computer which could force employers to retrain them or put them in mismatching roles, plus they may invite foreign employees (Kolaib, 2002).

Enterprises in developing countries have "Inadequately educated workforce" which is one of the issues faced by enterprises in Yemen which report that workforce lack the required skills which also necessitates more training on the job (World Bank, 2015).

The society of Yemen is young, and the population growth has led to more newcomers to the labour market which increases unemployment as most of the newcomers are not able to engage in employment because they are not all graduates. Moreover, only 20% of graduates possess the required skills for the job market which means that education and vocational training - regardless of what attention is already paid - is still weak and not able to go along providing the required workforce for the job market (Toki & Qadhi, 2015). Universities in Yemen do not play a good role in developing human resources of the private sector and their own human resource due to performing the traditional job which is educational teaching without paying attention to research and development (Kolaib, 2002).

The review of the available literature led to finding out attention that has been geared towards management and development of human resources in Yemen (Rashid, 2000), HRM and its practices in private sector (Muharram, 2007; Al-Jaadabi, 2012), the benefits of investing in human capital (Qarshi, 2013), and the role played by universities in preparing human resources (Kolaib, 2002). Moreover, governance and administrative reform in Yemen (Hassan, 1970; Shamsan, 2004), labour market and job market (Toki & Qadhi, 2015) and evaluating performance management in large industrial companies (Ahmed, 2005) have gained some attention in the literature in addition to the obstacles faced by the manufacturing sector in Yemen (Aamer, 2015), and the role of management in success of organization which was dedicated towards Islamic banks in the Country (Aiedh, 2010).

The status of function of Yemeni SMEs was reviewed (Al-Maqaleh, 2012), which did not give due attention to the managerial perspective of SMEs in Yemen and how to improve it. Along with the enterprises survey of the World bank that was conducted in 2012 (World Bank Group, 2013), the role of small enterprises in the economic development in Yemen was reviewed as well (Al-Iryani, 2015) which also indicated that SMEs in Yemen do not have official structures; as the businesses generally lack clarity on decision making and do not have a management cycle.

When concerning managerial difficulties among enterprises and industries in Yemen, there are no modern management methods followed, along with the lack of skilled workforce, directing the business in a traditional basic methods and no managerial order in organizing work in departments and managements of the organization (National Information Center, 2009). This maximizes the cost of functioning in such business environment, as the challenges and obstacles become

more than the opportunities for SMEs to rise and realize their goals by participating in the economic development and welfare of the society.

Moreover, there is a lack of effectiveness of legislations and laws which govern human resource management activities in Yemen, unavailability of effective national strategy to reduce unemployment. Further, no sufficient cooperation between public and private sector is detected with respect to exchanging the experiences between both sectors (Al-Jaadabi, 2012).

Normally, small and medium sized firms have low level of management practices which means that, they carry the challenge of competing with multinational and imported products and services in the market. Further, not all practices adopted in a company are in the same level, as a high level of practices with respect to one practice exhibited in the company may be matched with a low level of practice with respect to another practice, due to high association with the managerial practices adopted, and the performance dimensions; which are, profitability, growth and productivity (Brito & Sauan, 2016). In terms of organization and management, most of the enterprises in Yemen do not have official structures. The businesses generally lack clarity on decision making and do not have a management cycle (Al-Iryani, 2015).

The "Powers" of work practices in HRM departments in public and private sectors in Yemen are very limited, however the practices in private sector firms were slightly better than the public sector, such as, job description system, organization goals, better relations between managers and employees, evaluation of staff performance (Al-Jaadabi, 2012). When it comes to large companies, the performance management evaluation is developed in Yemeni industrial units with a very low development, as there are no specific posts for performance management

in companies so performance managers can evaluate the performance during the year (Ahmed, 2005).

The performance growth in the service and manufacturing sectors in Yemen is influenced by management capabilities determinants, business environment determinants as well as firms' resources. This creates the need for SMEs to be financed, using proper accounting methods and building up the managerial capability such as investing in training and changing the management style and the work environment (Alhammadi, et al., 2013). The manufacturing sector in Yemen faces a lot of challenges which hampers its performance and outcome as well as growth, Aamer (2015) summarized the top challenges that are slowing down the development of the manufacturing sector in Yemen; as lower level of quality control as well as low improvement practices, challenges related to human resources such as less training and low skills, enabling environment such as infrastructure, industrial zones and regulations. More challenges pertaining to supply chain management, such as, depending on imported production raw materials which leads to higher production cost, and WTO accession as another emerging challenge like trade liberalization, post Yemen joining WTO during 2014. Federalism that was proposed as a political solution to the political unrest in Yemen which would bring more challenges and opportunities too.

This creates the need for the manufacturing sector for implementation of effective strategy, supporting centers, rehabilitation of economic zones, supporting the coordination between the public and private sectors, as key factors with respect to developing and promoting the performance in the Yemeni manufacturing sector (Aamer, 2015).

However, Nusair & Osman (2016) stated that the performance of Yemeni manufacturing firms is not significantly influenced by strategic planning due to the challenge of developing strategies in a dynamic environment, also less formal planning and strategy development as a result of the prevailing unrest in Yemen.

Manufacturing SMEs performance in Yemen is reported to be influenced by strategic innovation, as the Global Innovation Index ranks Yemen in tail of the countries with respect to innovation. Providing training to SMEs is a key as innovation takes place when enterprises have highly and adequately trained workforce. Moreover, marketing innovation and product innovation are crucial for consideration in a developing economy such as the Yemeni economy then financial innovation (AlQershi, et al., 2018).

Aiedh (2010) studied the role of management in the success of Islamic banks in Yemen, and concluded that the most commonly used management practice in Islamic banks in Yemen is planning function, while the less used is motivation. As a significant relationship was found between the management practices in Islamic banks in Yemen and the efficiency and effectiveness of their performance, the most impacting function on the efficiency being leadership while the least impacting function being their decision making process.

As long as developing management and adopting sound management practices have been proven to impact the performance, productivity and the profitability of SMEs in developed and developing countries (Bloom, et al., 2012; 2013; Bloom & Van Reenen, 2007; 2010; Brito & Sauan, 2016). This triggers the need to investigate the possibility and benefits of developing the managerial practices among manufacturing SMEs in Yemen and how adopting sound and effective

management practices would contribute to the resurgence of the manufacturing sector and thereby contributing to the economic growth and prosperity.

Chapter Two: Research Design

2.1 Research Gap

The research area has been identified after studying the literature relating to management practices and principles. The existing literature explores the need for enhanced management practices and this research addresses the role of management processes and practices in improving business outcomes/performance.

With focus on investigating the literature in relation to decision making practices (being one of the key focus of the study) so as to identify the previous contributions with respect to the role and the impact of decision making practices observed among manufacturing enterprises with an objective of developing and enhancing their performance and thereby prevailing for resurgence and growth opportunities.

The decision making practice is not only important for better outcome, but also crucial while functioning in instable business environment. The outcome of assessing decision making practices and identifying their role in improving the business performance can be attributed to the way/means in which owners and managers of manufacturing SMEs run their day to day activities which in turn ensures the desired goals are realized and help in achieving resurgence in the operations of manufacturing sector.

The relevant body of research reveals the importance of adhering to management principles and practices to enhancing the performance of firms/companies. This research work has made an attempt to examine the literature highlighting such

impact and importance. However, the need for adopting better management and decision making practices among manufacturing enterprises in underdeveloped economies has not been clearly identified and empirically analyzed; true in case of Yemen.

The nature of decision making practices among the industrial enterprises in Yemen has not been precisely evaluated, further, the role of adopting such practices has also not been identified (taking into account the different economic and cultural environment) as compared to the other countries in which such studies are conducted. Further, research is essential to quantify the need for improved decision making practices and exploring the role of such practices in enhancing the performance of manufacturing enterprises in underdeveloped economies specifically within the economic and cultural context of Yemen.

Therefore, the gap for this research is identified to measure the decision making practices among manufacturing enterprises in underdeveloped economies and how they impact their performance. Further, it extends to include investigating the mediating role that some variables can play in relation to the decision making practices and the performance of manufacturing SMEs. These variables include; adopting information technology, organizational learning, and the traditional method adopted in decision making. Furthermore, the moderating role of variables such as entrepreneurial competencies of managers and owners, and their willingness for further education in the entrepreneurship skills is considered a part of the gap identified in this research.

2.2 Statement of the research problem

The economic development of Yemen is stunted² by weak governance and inefficient management systems, which are acting as obstacles amidst growing economic imbalance since the 1990s, viz. effects of unification, the Gulf War (which resulted in one million Yemeni workers being expelled from Saudi Arabia), political tensions (stemming from unification), and a costly civil war between north and south parts of Yemen. The government has been trying to carry out reform programs supported by the World Bank and IMF; yet, the economy has not witnessed any remarkable development during the last two decades.

Some economic setbacks yet remain that are hindering the development in Yemen, such as, the lack of realizing the importance of contribution of the industrial sector [particularly small] industries in the economy, balance of payment deficit, high investment cost (large industries) and the scarcity of resources. The current political unrest and violent conflict in Yemen during the last few years has worsened the condition of the private sector increasing the difficulties and obstacles to growth and function possibilities. Therefore, developing the administrative system and governance practices with focus on the quality of management in the industrial sector is deemed as a crucial contributor to the economic development (especially for underdeveloped economies).

This research hence focuses on investigating effective practices to run and manage enterprises, by evaluating the current management status, in particular, the managerial practices that strengthen the ability of small scale industries to survive

² prevented from growing or developing properly.

and resist such economic deterioration. This brings the focus of this research towards decision making practices due to their role in reducing the effect of uncertain business environments and increasing the chances of surviving in such environments which leads to the growth, and sustainability of small scale industries.

The research problem stated for this research is; the intense need for sound management practices with respect to making critical decisions in crucial times and still succeed in obtaining a satisfying outcome of such decisions providing opportunities for development and resurgence to industries/enterprises so as to ensure the growth and sustainability in the economy. Hence, the study **“Management Practices for Providing Resurgence to Manufacturing sector: A case study of Yemen”** has been initiated.

2.3 Significance of the Research

The reform programs performed by the government after the unification of Yemen included privatization, which resulted in, the withdrawal from the manufacturing sector by the government. Moreover, the absence of industrial policy till 2009 had led to the diversion in the attention paid towards the industrial sector, specifically the small industries which were deprived of all benefits since its independence era.

The association between the performance and growth of enterprises and effective management practices, plus the absence of major development in the economy during the last two decades, had triggered the need for the development of sound practices of effective management in the industrial sector, which are directed towards enhancing the performance and facilitating the realization of significant positive outcomes throughout the economy.

Presenting a framework that recommends better strategy to develop and adopt sound and effective managerial decision making practices would benefit the managers and entrepreneurs in the long run, and adopting modern managerial practices with respect to decision making in their enterprises for better realization of goals.

The need for the study arises because of being the first of its kind to be dedicated to reviewing and evaluating the decision making practices among manufacturing enterprises in Yemen. Its outcomes will contribute to establishing:

a) a new scope for researchers to continue further research studies with respect to the other managerial perspectives.

b) to develop the managerial context in the industrial sector by deeply evaluating contemporary issues in SMEs sector in Yemen.

Further, the importance of the study is evident due to the nature of the business environment in which manufacturing enterprises function. Due to the recent deterioration in the economic and business sector and policy, managers in manufacturing SMEs are in need to adopt the most appropriate decision making practices that can contribute towards reducing the impact of the economic deterioration as well as increasing the chances of survival in the business sector and hence increasing the ability to realize their business goals.

In addition to investigating decision making practices and their role in providing resurgence for manufacturing enterprises, it is worth mentioning that the study also aims at investigating the mediating role of other variables such as; the traditional decision making style, application of information technology in decision making and entrepreneurial competencies of the managers. The results are expected to

unveil how such variables interfere in the relationship of decision making practicing with the performance of manufacturing enterprises.

Finally, the study is anticipated to be a beneficial source of information for policy makers, educational institutions, and industrial experts in setting a conducive environment that facilitates appropriate decision making among manufacturing enterprise through the cooperation that would lead to achieving inclusive development by ensuring effective management practices are adopted and applied by the organization.

2.4 Research Objectives

The major objective of conducting this study is to evaluate the decision-making practices among managers in small and medium enterprises in Yemen and the role of such practices in improving; the performance, effectiveness and providing resurgence to the manufacturing SMEs in the Yemeni business sector.

To fulfil this objective, and for the purpose of designing the research process, the objective is classified into the following specific and directed objectives:

1. To explore the extent of adopting decision making practices among small and medium manufacturing enterprises in Yemen.
2. To explore the differences in adopting applying decision making practices among manufacturing SMEs when evaluated according to their demographic characteristics.
3. To identify the impact of the decision-making practices on the performance of manufacturing SMEs.
4. To identify the mediating role of traditional decision-making practices, organizational learning and information technology use in Decision Making in

the relationship between decision making practices and the performance of manufacturing SMEs.

5. To explore the moderating role of entrepreneurial competencies and managers' perception towards further education in the relationship between decision making practices and the performance of Manufacturing SMEs.

2.5 Research questions

The objectives set above are adopted to solve the main query raised for this research, which is relevant to the role and impact of decision making practices among manufacturing SMEs that lead to achieving resurgence and inclusive development in the business environment.

Therefore, the following research questions are outlined and such questions are answered with empirical evidences, based on the research tool adopted to collect the required data, describing and measuring the different variables and their relationships within the research model; the focus of research is to investigate:

1. The nature of decision making practices existing among managers of manufacturing SMEs in Yemen.
2. The role of decision making practices in the reported performance of manufacturing SMEs in Yemen.
3. The traditional decision-making practices, organizational learning and technology adoption in Decision Making ; how these aspects mediate with the performance of Manufacturing SMEs.
4. Exploring how the entrepreneurial competencies and perception towards further education among managers, moderate the impact of decision making practices on the performance of manufacturing SMEs.

2.6 Research Hypothesis

With objective of solving the raised queries, primary statements are hypothesized to predict the output of analysing the relationships across variables; the following hypotheses are set:

2.6.1 DMPs adoption

H1₁. Decision making practices are moderately adopted among managers and owners of manufacturing SMEs in Yemen.

2.6.2 Differences in adopting DMPs

H2₀. There are no significant differences in adopting decision making practices and performance among managers of Yemeni manufacturing SMEs, when they are evaluated with the demographics of managers and SMEs.

H2₁. There are significant differences in adopting decision making practices and performance among managers of Yemeni manufacturing SMEs, when they are evaluated with the demographics of managers and SMEs.

2.6.3 Impact on SMEs performance

H3₀. There is no significant positive impact of the decision making process steps on the performance of manufacturing SMEs.

H3₁. There is a significant positive impact of the decision making process steps on the performance of manufacturing SMEs.

H4₀. There is no significant positive impact of the strategic practices of decision making on the performance of manufacturing SMEs.

H4₁. There is a significant positive impact of the strategic practices of decision making on the performance of manufacturing SMEs.

H5₀. There is no significant positive impact of decision making practices on the performance of manufacturing SMEs.

H5₁. There is a significant positive impact of decision making practices on the performance of manufacturing SMEs.

H6₀: There is no significant positive impact of Organizational learning on the performance of manufacturing SMEs

H6₁: There is a significant positive impact of Organizational learning on the performance of manufacturing SMEs.

H7₀: There is no significant negative impact of traditional decision making practices on the performance of manufacturing SMEs.

H7₁: There is a significant negative impact of traditional decision making practices on the performance of manufacturing SMEs.

H8₀: There is no significant positive impact of using IT in decision making on the performance of manufacturing SMEs.

H8₁: There is a significant positive impact of using IT in decision making on the performance of manufacturing SMEs.

H9₀: There is no significant positive impact of entrepreneurial competencies of managers/owners on the performance of manufacturing SMEs.

H9₁: There is a significant positive impact of entrepreneurial competencies of managers/owners on the performance of manufacturing SMEs.

H10₀: There is no significant positive impact of willingness of managers towards further education/training in management on the performance of manufacturing SMEs.

H10₁: There is a significant positive impact of willingness of managers towards further education/training in management on the performance of manufacturing SMEs.

H11₀. There is no significant mediating role of traditional decision-making practices, organizational learning and technology use in Decision Making in the relationship between decision making practices and the performance of manufacturing SMEs.

H11₁. There is a significant mediating role of traditional decision-making practices, organizational learning and technology use in Decision Making in the relationship between decision making practices and the performance of manufacturing SMEs.

H12₀. There is no significant moderating role of entrepreneurial competencies and perception towards further education among managers over the relationship between decision making practices and the performance of manufacturing SMEs.

H12₁. There is a significant moderating role of entrepreneurial competencies and perception towards further education among managers over the relationship between decision making practices and the performance of manufacturing SMEs.

2.7 Research Scope

The research aims to investigate management practices observed among the manufacturing companies/organizations in Yemen. The Yemeni economy is described as the poorest economy in the MENA region; which is also reflected in the status of the growth in the business sector.

This implies that every research aspect or area can be considered as a priority to investigate how management practices are adopted and how it contributes to

enhancing the status of the manufacturing sector, and facilitate the process of achieving inclusive development and economic welfare in an underdeveloped economy such as Yemen. Hence, discussing management practices in general for the purpose of research and contribution could be whether too much to investigate at once or less contributory due to lacking the specific focus of research. This creates a need for defining a scope for the research so it can provide better focus and then better contributory outcomes. Hence the research scope is segregated in terms of the research context and research area.

2.7.1 Conceptual scope

The scope of the study is initiated to the decision making practices. Decision making practices have been chosen for conducting this research due to many reasons; **first**, less research works available discussing the role and relationship of decision making practice and the performance of the manufacturing sector; **second**, the importance and role of decision making practices are more required when the business environment is uncertain and unpredictable, Yemen has been witnessing an economic and political instability during the last decade (Saleh & Manjunath, 2020), this creates an earnest need to investigate the decisiveness among SME managers and owners for the purpose of surviving such environments; and, **third**, SMEs are considered the main drivers of the Yemeni economy as more than 95% of the business sector falls into this category of SMEs (World Bank, 2013), this makes the investigation of decision making among SMEs' managers and owners contributive and essential.

2.7.2 Geographical scope

Yemen has been chosen as the geographic scope of this study. Sustainable development is set to be the aim of every single economy worldwide, yet some economies are lagging behind with respect to achieving the same, due to lacking the required resources and capabilities such as human capital, technology, and infrastructure. This may lead to questioning the role of management in enhancing the performance, and hence the capabilities of the business sector in Yemen has been investigated/explored.

The study targets to investigate the decision making practices and their role in providing resurgence to the manufacturing sector. However, since Yemen is not a manufacturing economy, the focus is geared towards the production sector or processing sector. This is the case in underdeveloped economies where manufacturing is mainly cantered around the process of converting resources into finished goods and commodities.

Further, since the study investigates the decision making practices in the manufacturing sector from the Yemeni perspective, resources reveal that more than 95% of manufacturing units are in the category of MSMEs (Alqadasi, 2008; World Bank, 2013). This triggers the focus of the study towards investigating the aspect of manufacturing SMEs in Yemen. Out of the manufacturing SMEs in the population for the study, the majority are found to be working in the food processing sectors, the other sector after it are the home appliances sector. Therefore, these two sectors are chosen to be the narrowed area of the research for this study, being the two major sectors in terms of size and functions.

Hence, the scope of the current study is limited to investigating the decision making practices and their relevance to the performance of manufacturing MSMEs who are into the business of food processing and home appliances in Yemen.

2.8 Methodology

Choosing the appropriate methodology for research depends on the nature of the objectives, questions and research hypotheses (Patton 2002; Strauss and Corbin, 1998). The methodology adopted for this study involves exploratory research design with both quantitative and qualitative techniques; in the quantitative techniques, primary data is collected from owners and managers in manufacturing enterprises in order to explore their opinion regarding adoption and application of decision making practices in their daily business activities, and be in a position to explore the role of such practices in impacting SMEs performance. Another aspect is the psychometric evaluation of the measurements coupled with the statistical data analysis to achieve the study goals. In the qualitative techniques, reviews are conducted with help of the available literature so as to identify the extent of coverage observed in the area of decision making practices among small and medium manufacturing enterprises in underdeveloped economies.

The study design reveals the procedures followed by the researcher to investigate the objectives to answer the questions set for research. It further reveals to the reader how the appropriate methodology has been chosen by the researcher to conduct the investigation and the empirical resources to fulfil the research objectives (Meyrick, 2006; Creswell, J. W., & Creswell, J. D. 2003). This implies presenting consistent approach regarding the description, evidence gathering, data collection, statistical analysis, interpretation and presenting the results (Saunders, et al., 2009).

The descriptive methodology adopted serves the need for gathering relevant evidences with respect to the research topic, research area, objectives and questions. Presenting evidence also involves the relevant work that has been presented in the literature, and the relevant informative reports in the Yemeni context.

The analytical methodology involves collecting the required primary data from respondents, data cleaning and preparation, descriptive statistics to present and visualize the collected data, inferential interpretation of data which involves the use of structural equation modelling techniques to convey the relevant results extracted through analysis of the collected data.

2.9 Theoretical framework of the research model

The study relies on the behavioural decision theory which can be traced back to Ward Edwards (1927–2005). Scholars and authors consider Ward Edwards as the father of behaviour decision, as he established the field of behavioural decision making in his publication titled “Behavioural Decision theory” where he discusses how decisions are made and improved by the people.

It can also be traced to Herbert A. Simon (1916–2001) who is considered another giant in decision making, as he stated that decision making does not obey the postulates of rational men, Simon also stated that humans are utility satisfiers but not maximizers, as they tend to be happy if they are able to meet the aspiration level they set for themselves. Such aspirations are very related to the techniques of multi criteria decision making (Köksalan, et al., 2011).

This study attempts to investigate the decision making practices in Yemen viz. **the process-oriented decision making approach**. Decision making gurus such as Fredrikson (1984; 1986), Schrenk (1969), Janis (1968), Simon (1977) and Witte et

al. (1972) have described the functions of decision making as the components of the decision making process. The usage of this approach is increasing as it investigates every step of the decision making process which include defining the problem, developing possible alternatives, evaluating and comparing alternatives, choosing the most suitable alternative, implementing the decision, following up and control of the decision.

Browne, (1993) and Harrison, (1993) divided the decision making models into four main types, these models are a) **the rationality models** which are classical models aiming for maximized outcomes; b) **bounded rationality models** which are neoclassical models aiming for a satisfying outcome; c) **the political models** which are adaptive models aiming for acceptable outcomes; and d) **the process models** which are managerial models aiming for objectives oriented outcome.

This study primarily focuses on the process model, since its focus is mainly managerial unlike other models having their focus as classical or adaptive. The process model relies mainly on, decision makers' judgment, without considering the exclusion of compromise, so as to fit specific situation relevant to decision making. The process model is distinguished from other models by possessing strong managerial emphasis and outcome-oriented objectives.

Harrison, (1993) indicates that the process model is more appropriate when the environment and climate of decision making in an organization is uncertain. This implies that the top and middle level management decisions are, the decisions applicable through adopting the process model due to the significance that these decisions would have on the organization.

Further, it is considered to be an ideal model for decision making, as it has a planning emphasis which makes it a future-oriented model (Elbing, 1978), and is

oriented towards organizational change and innovation so as to achieve long-term results. It has been evidenced in research that the process model contributes towards the success of the decision making process across various organizations (Harrison, 1993).

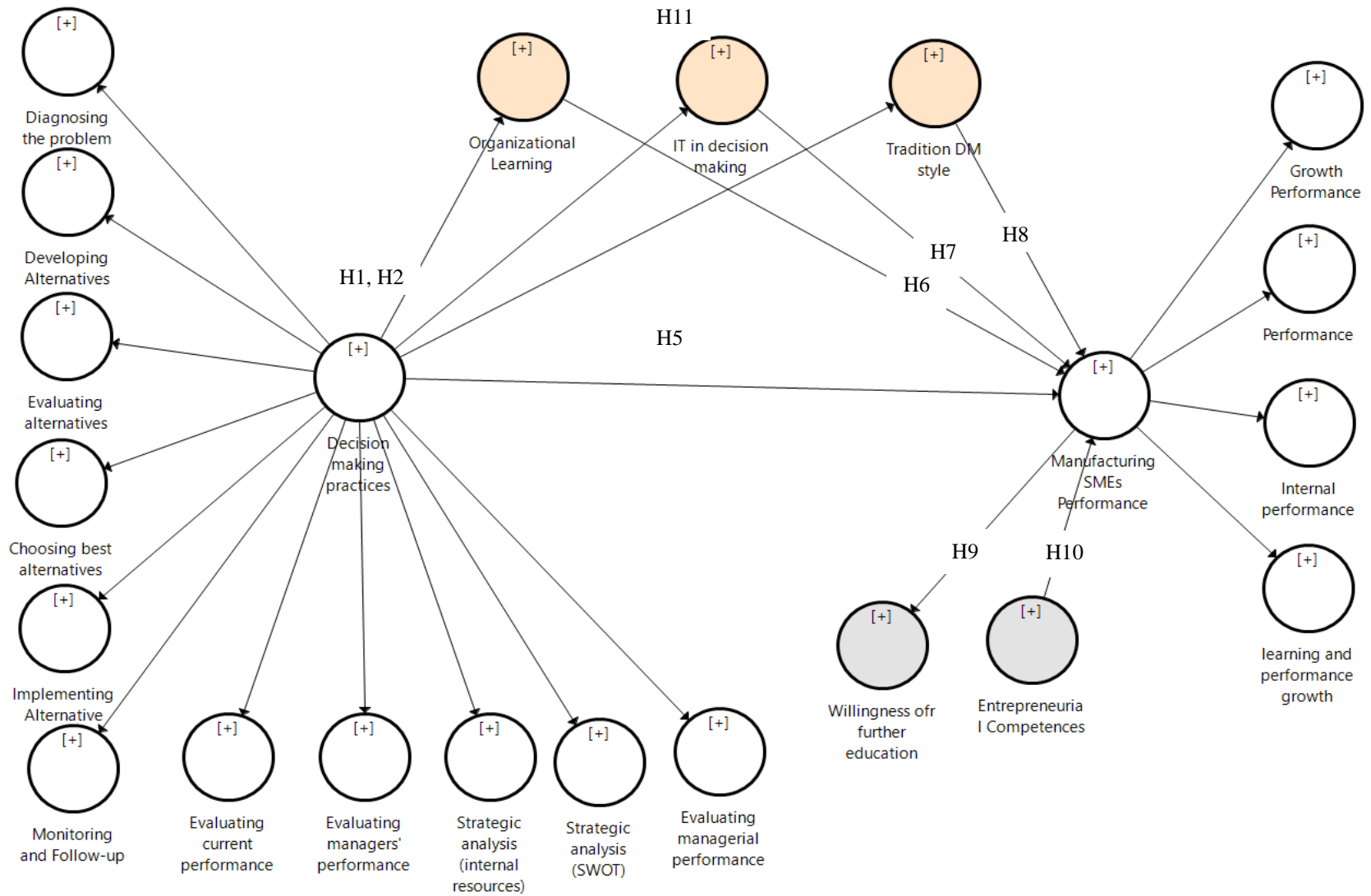
This study adopted the practices relevant to decision making, and whether these practices are adopted for normal or strategic decision making, after a thorough review of the available relevant literature and the methodologies applied with respect to decision making practices among SMEs, the following model is set to be the research model of the study. It is also worth mentioning that the research model in its form below has not yet been investigated in any of previous studies.

The research model consists of two sets of independent variables, the first set includes the normal practices of decision making and the other set includes the strategic practices of decision making; the dependent variable is manufacturing SMEs performance; mediating variables which are investigated to identify how they mediate the effect of decision making practices on manufacturing SMEs, these variable are using information technology in the decision making process; moderating variables that are assessed to identify how they affect the relationship of decision making practices with manufacturing SMEs performance – these variables are the entrepreneurial competencies of managers and the willingness of managers for further management education.

The following figures (Figures 2-1, 2-2, and 2-3) present the theoretical model of the research; in the first figure (Figure 2-1), decision making practices are presented which include the normal decision making practices in addition to the strategic practices relevant to decision making, while in the second figure (Figure 2-2), the decision making practices presented are the decision making process steps which

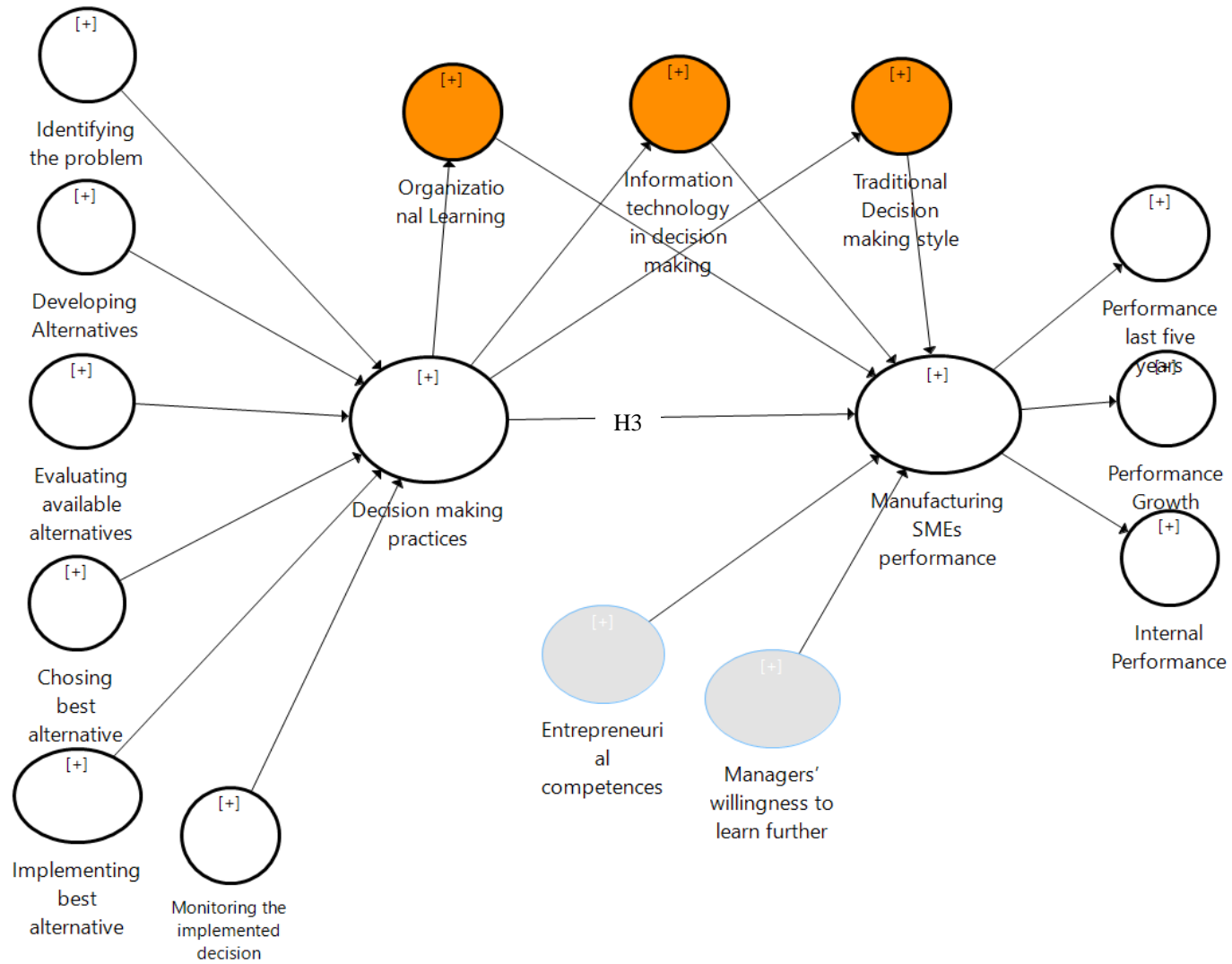
starts with diagnosing the problem and ends with monitoring the effectiveness of the decision. Finally, in the third figure (Figure 2-3), the strategic decision making practices are presented which begins with evaluating the current performance and ends with strategic analysis of strength, weakness opportunities and threats (SASWOT).

Figure 2-1: Research model (1): The main research model containing all the practices in the study.



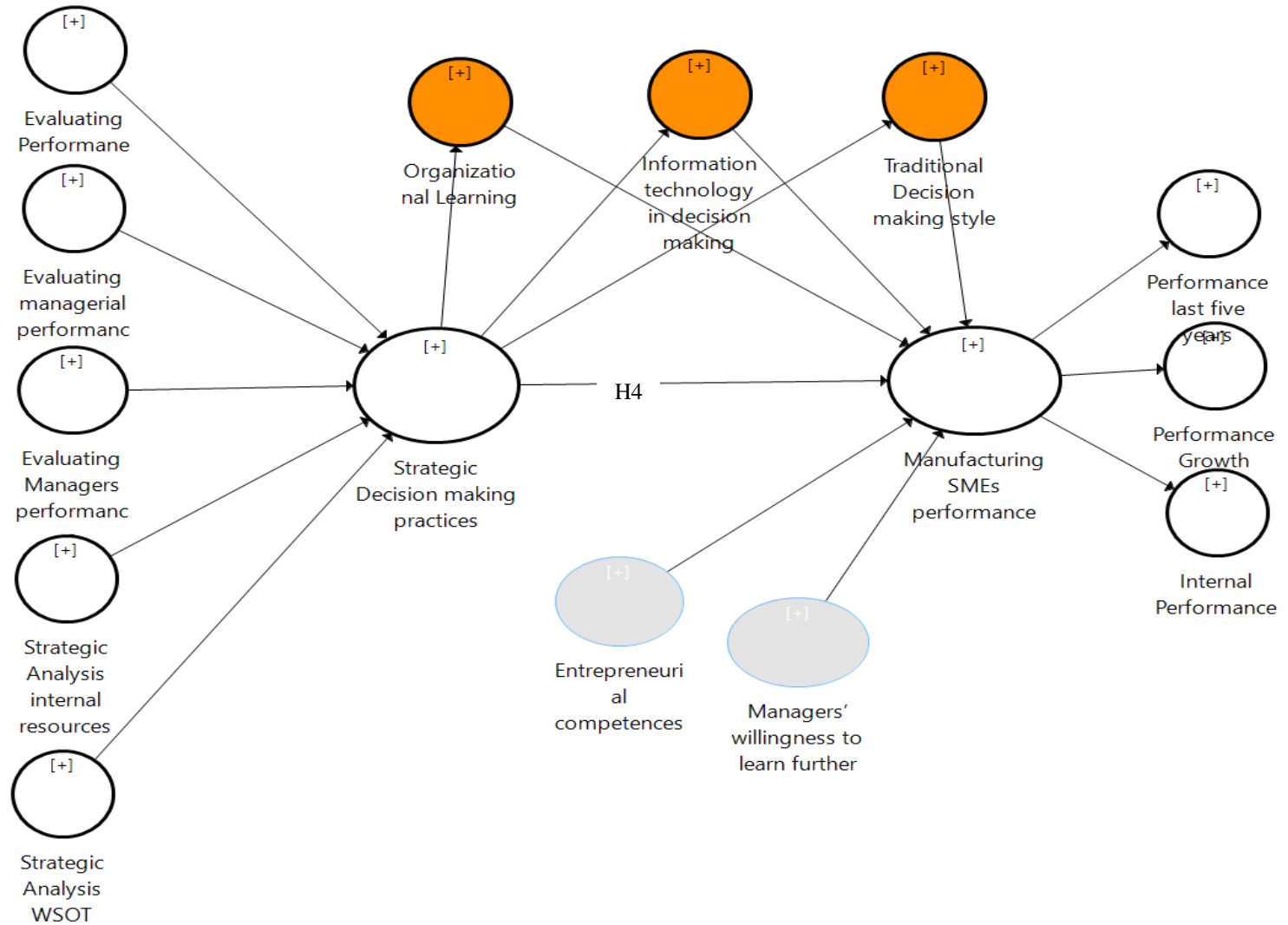
Source: Review of literature.

Figure 2-2: Research model (2): The decision making process steps model.



Source: Review of literature

Figure 2-3: Research model (3): Strategic practices related to decision making Model.



Source: Review of literature

2.10 Operational definitions

2.10.1 The dependent variables

2.10.1.1 Performance of enterprises (SMEsP)

Research indicates that the perceived performance of enterprises should be used to measure the overall functional performance and not only the financial performance (Gomezelj & Kušce, 2013). Therefore, the perceived performance differs from one business environment to another, which implies that perceiving impressive performance in underdeveloped economies (especially the ones witnessing political and economic instability) would be compromised as, the number of challenges increases during such periods. Considerable research has been dedicated to evaluating the performance of firms and enterprises and such factorial relevance to the success and goal achievement by firms and enterprises (Neely, et al., 1995; 2000; Taticchi, et al., 2010; Nudurupati, et al., 2011). Prior to 1980s, measuring the performance of firms and companies was mainly based on financial data, offlate, it is observed by researchers that the information related to comprehensive performance cannot be captured by financial data alone (Wu, 2009).

According to Lebas & Euske (2002), performance is a set of financial and nonfinancial indicators that reflect information about the goal accomplishment in a firm, or it can be a set of metrics that facilitate the understanding of the extent of efficiency as well as effectiveness of activities in an organization (Neely, et al., 2000). Anggadwita & Mustafid (2014) describe the performance as a measure of success of a company. Rosli & Sidek (2013) indicate performance as a mirror to an enterprise accomplishment being a center point for evaluation.

2.10.1.2 The role of decision making in driving the performance of enterprises:

Understanding if the decision making has any role in organizational performance, the literature presents evidence that, decision making has a positive association with the organizations performance. Investigating decision making in organizations and the importance of taking such decisions on the growth and development of organizational growth and performance; Cannella and Monroe, (1997) point out that divergent theories in the literature differ in treating managers, where, agency theory views managers as agents of stakeholders, strategic leadership theory opines that organizations are considered a reflection of the top managers as, their knowledge and experience are also reflected on their ability to assess the decision situations more than the decision to be made.

Further, managerial incompetence is found associated with the inability to make good business decisions which in the end affects the performance of organizations. Further, characteristics associated with managerial incompetence include over control, micromanaging, over controlling, untrustworthiness and unwillingness to use discipline (Hogan, Curphy and Hogan, 1994). Simons, (2005) states that managers are supposed to design their organizations or enterprises like any other design activity being a very critical exercise. Decisions with respect to such design have profound and long-lasting effects, as it is emphasized that participative leadership style is a factor positively influencing organizational performance as well as satisfaction; however, this effect is small when compared to other factors that influence their performance (Wagner, 1994).

In order to realize the research objectives with regards to, measuring decision making practices, the following section discusses the variables that have been chosen to be mediating variables in this study in order to investigate their mediating role in affecting the SMEs performance.

Since the study intends to measure the impact of decision making practices – which are an integral part of the managerial practices to be adopted by firms and companies and how they influence the performance of manufacturing SMEs. This is with an objective of evaluating the role of adhering to sound managerial practices and decision making practices in particular in improving the chances of achieving resurgence among small and medium enterprises in an underdeveloped economy such as Yemen. The managerial performance and performance growth are considered as the dependent variable in the study model.

After reviewing the relevant literatures with respect to measuring the performance of SMEs, the study adopted four sub-variables to be the components for measuring the performance among SMEs (SMEsP), these variables are a) the growth performance of enterprises (GP), b) the performance improvement during the last five years (PI), c) internal performance during the last five years (IP) and finally d) the learning growth in enterprises (LGP).

2.10.2 The independent variables for the study - the attributes of decision making practices

When decisions are programmed, it takes time, there are models proposed that involve specific steps to be followed when a decision are to be take. These steps are the practices followed by the managers and organization for a better and more effective decisions.

According to Brim, (1962), the decision making process involves the following six steps;

a) identifying the problem; b) collecting the relevant information; c) generating possible alternatives; d) critically evaluating the possible alternatives; e) selecting an alternative; and f) implementing the chosen alternative.

However, Schoenfeld, (2010) did not include the second step, which is, collecting relevant information, rather added an extra step after implementing the chosen alternative, which is, evaluating decision effectiveness. Keast & Towler, (2009) states that rational decisions are the ones that are taken under certainty, as managers know the alternative, the outcome, criteria and have the ability to choose the appropriate alternative and then implement the same.

Benowitz, (2001) divides the decision making process into seven steps, a) defining the problems, b) identifying limiting factors, c) generating possible alternatives, d) analysing alternatives, e) selecting the most appropriate alternatives, f) decision implementation, and g) establishing an evaluation system.

Ivancevich, et al., (2014, p. 405) put the step of identifying the goals and measuring the results as a primary step before identifying the problem unlike other authors who began by identifying the problem.

Robbins & Coulter, (2018) identified eight steps for decision making process, which are, a) identifying the problem, b) identifying the criteria for the decisions, c) allocating weights to such criteria, d) generating alternatives of solutions, e) analysing alternatives, f) choosing the best fit alternative, g) implementing the chosen alternative and finally h) evaluating the effectiveness of the implemented alternative.

Schermerhorn, (2013, p. 175) define the decision making process in five steps, a) defining and identifying the problem, b) generating and evaluating the proposed alternatives, c) choosing the most appropriate one among them, d) implementing the decision, and e) results evaluation.

For the purpose of the study, the variables are divided into two groups a) the decision making practices [the decision making process steps, and the strategic practices related to decision making, and the performance of manufacturing SMEs], and b) other variables [the traditional decision making style, organizational learning and adopting information technology in decision making] treated as mediating variables, and, [entrepreneurial competencies of managers and their willingness for further education] treated as moderating variables in the research model. The following is outline about the decision making practices which are divided into two groups the first group includes the six decision making process steps, and the second group includes the strategic practices relevant to decision making. The other variables are presented which are the mediating variables and the moderating variables.

2.10.2.1 Diagnosing the problem (DP)

Defining the goal is based on defining and identifying the problem; therefore, when the goals are more specific, it becomes easier to evaluate and judge the result of the decision (Schermerhorn, 2013, p. 175).

Defining that a decision is essential to be made is the beginning of process of decision making (Griffin, 2016, p. 105; Benowitz, 2001), as Ivancevich, et al., (2014, p. 405) considers the existence of the problem necessary, as it creates the need for a decision to be made; the problem is summarized by the gap existing

between two conditions, the current condition and the desired condition in an organization. Therefore, being attentive to the surrounding environments, the ability to think critically and innovatively and defining the true nature of the problems helps managers put up the basic stage in the decision making process (DuBrin, 2012, p. 156).

For identifying the problem, Robbins & Coulter (2018) state that managers are required to pay more heed towards the issues that create problems in the organization by differentiating between the problems and the symptoms of the problems in the real world; as, a problem seen by one manager can be seen only as a symptom of a problem by another manager and vice-versa.

To facilitate the decision making process, Griffin, (2016, p. 105) states that the managers should identify the problems, and their causes and any other factors relevant to the problem. Problem identification is subjective, important and challenging. Therefore, for managers to be able to identify problems, they are required to make a comparison between the desired situation and the current situation (Robbins, et al., 2017; Ivancevich, et al., 2014, p. 405-6).

It is worth mentioning that managers are expected to decide which problems demand immediate intervention or solution and which problems can go through the formal decision making process considering factors such as impact, urgency and growth tendency (Ivancevich, et al., 20014, p. 406).

There are three common mistakes that may occur as reported by Schermerhorn, (2013, p. 175) while defining the problem, defining the problem in a too narrowed or too broad way, as managers are supposed to define the problem in a manner that leads them to the best range of options for problem solving; focusing on the

symptoms and leaving the main causes of the problem, and, dealing with the wrong problem at a certain point of time (Schermerhorn, 2013, p. 175).

2.10.2.2 Developing Alternatives (DA)

This step involves assembling the facts and information that contribute to solving the problem (Schermerhorn, 2013, p. 177). Based on identified criteria for solving the problem, any viable option that could play a part in solving such problem may be considered as an alternative.

In this step, internal and external environments in the organization are investigated to identify any information related to the problem identified within the constraints of time and cost (Ivancevich, 2014, p. 406-7). Any type of possibility in this regard is supposed to be explored by decision makers even though it somehow seems to be unrealistic (DuBrin, 2012, p. 156). It is always advised that the managers should develop standard innovative and creative possible alternatives while approaching to solve the problem (Griffin, 2016, p. 105). In this regard, they are required to list the viable options or alternatives that could contribute towards solving the problem (Robbins & Coulter, 2018). Further, they are required to thoroughly think and investigate all possible options or alternatives that could solve the problem (Benowitz, 2001), taking into consideration factors the act as constraints in taking appropriate action decisions/outcome (Griffin, 2016, p. 106).

Developing alternatives (DA) is best possible through brainstorming, where in a team can discuss ideas which would ideally leads to generating more and more ideas among the team members. Besides brainstorming being considered as an effective tool for generating ideas, other tools are also adopted such as; adopting a nominal group – (which involves structured meeting used to discuss and generate ideas,

where each participant has equal opportunity in proposing their inputs); the Delphi technique – where no such structured meetings is used, instead the leader gathers ideas from involved participants through a questionnaire tool for the purpose of generating any possible options to solve the problem (Benowitz, 2001).

Applying such techniques helps in bringing broader ideas on the table; promotes more participation by the members, and facilitates the clarification of uncertainties. However, some disadvantages may also be encountered such as, consuming extra time, a possibility of difficulty in performing tasks, and the final decisions arrived maybe after many compromises to uphold the interest of many stakeholders (Benowitz, 2001).

2.10.2.3 Evaluating Alternatives (EA)

This step targets to list the merits of each alternative so as to help produce the most desired and the least undesired outcomes (Benowitz, 2001; Ivancevich, et al., 2014, p. 407), which can be done by assigning weights to each criterion or alternative (Robbins & Coulter, 2018), determining the pros and cons separately for each alternative, running cost-benefit analysis for each alternative, weighing and ranking the importance and plausible outcome of each alternative decision (Benowitz, 2001). This step can be skipped sometimes when one alternative scores the highest which makes the weightage process of other alternatives uncalled for (Robbins & Coulter, 2018).

For an alternative to pass the analysis process, it must meet the criteria of effectiveness, feasibility, satisfaction and affordability/consequences (Griffin, 2016, p. 107; Benowitz, 2001). Cost-benefit analysis should be adopted by managers while evaluating the alternatives (EA) (Schermerhorn, 2013, p. 177). Any

alternative that costs more than benefits/rewards should be eliminated, or if the unsatisfactory output is certain, it should not be taken for further considerations (DuBrin, 2012, p. 157).

Two factors should be taken into consideration while evaluating alternatives (EA), a) the evaluation process should be completely independent from generating alternatives, so that the number of alternatives generated is not affected by the evaluation criteria, as, whenever the first positive solution is generated, this may lead to ending the process of developing other possible alternatives which has potential to offer better rewards. b) when the alternative analysed seems to have no shortcomings, a critic or a devil advocate can be assigned to criticize the proposed alternative which may lead to reassessment of assumption as well as information of the alternative by the decision makers (Ivancevich, et al., 2014, p. 407-8).

2.10.2.4 Choosing the best Alternative (CA)

An actual decision should be made in this step to pick the most preferred alternative (Schermerhorn, 2013, p. 177). Regardless of the fact that many alternatives may have succeeded in the evaluation steps in terms of their feasibility, satisfactoriness and affordable consequences, managers would be required to pick the best alternative among the profiled alternatives and this is a challenging task for decision makers where they find themselves required to adopt a specific method that could facilitate them in picking the alternative that contributes to solving the problem and achieving their pre-determined objectives (Griffin, 2016, p. 108).

Choosing the best alternative (CA) acts as a crucial important step in the decision making process because decisions would not be and end by themselves, instead, it is considered a means towards the end. Therefore, there should not be any

independence between this step and the previous steps. Further, optimum solutions almost do not exist, as there will always be a punch of alternatives close to each other in their optimism, which puts pressure on decision makers to choose and adopt the most appropriate alternative taking into consideration all other conditions as well (Ivancevich, et al., 2014, p. 408).

The goal of the decision making majorly impacts the process of choosing the best alternative. Further, ambiguity is still a significant factor impacting alternative selection; even if quantitative resources support such alternative, decision makers still may not be fully certain about each potential outcome adopting such alternatives (DuBrin, 2012, p. 157).

The best alternative among all alternatives is the one, which produces the least disadvantages and the most advantages and acts as effective solution to the problem. In such a case, sometimes the best alternative is easy and straightforward as the one having the highest scores among others, but contrarily, the best alternative could be a combination of a few alternatives where the manager must decide which alternative fits the best based on its feasibility, effectiveness and plausible consequences. Further, a manager picks the alternative that has the highest probability of success and costs the organization the least (Benowitz, 2001).

2.10.2.5 Implementing the alternative (IA)

No change or improvement can take place without implementing the decision (Schermerhorn, 2013, p. 178), if the decision is not implemented, it is considered nothing but an abstraction as implementing the alternative (IA) can lead to achieving the pre-determined goals, and solve the identified problem. Therefore, this step is related to putting the chosen alternative into practice or action and obtaining the

commitment of the employees or subordinates affected by such decision (Robbins & Coulter, 2018).

Not only that the managers are hired to make effective decisions, they are also hired to get the maximum output and results out of these decisions (Benowitz, 2001). Sometimes this step fails due to the lack of participation error, which is the failure of managers to involve the people/resources that could support the decision in the process of implementing the same (Schermerhorn, 2013, p. 179). Further, poor implementation of the decision is also an impacting factor when it comes to the effectiveness of the decision. This makes the implementation more important than selecting the best-fit alternative (Ivancevich, et al., 2014, p. 408-9).

The duty of managers is summarized by reassessing the environment of such decisions to monitor any changes, particularly with respect to the long-term decisions. Doing this helps managers ensure that the criteria and alternatives have not yet changed by the environment which requires the process of re-evaluation (Robbins & Coulter, 2018).

To ensure the understanding of employees in the organization with respect to the decision, managers have to thoughtfully prepare and establish procedures, programs and guidelines or policies to support the problem-solving process (Benowitz, 2001). Measuring the reaction of subordinates towards the decision is one of the measures towards ensuring a fruitful implemented decision (Ivancevich, et al., 2014, p. 408-9).

A decision is said to be good when its implementation is neither resisted by employees nor is cumbersome (DuBrin, 2012, p. 157). Resistance of people to change while implementing the decision should be taken into consideration by

decision makers; as it may be a result of inconvenience, insecurity and the fear of being unknown/unfamiliar (Griffin, 2016, p. 108).

2.10.2.6 Monitoring effectiveness of the alternative (MEA)

Monitoring the effectiveness of the alternative (MEA) is always recommended, which also leads to generating feedback with respect to the implementation process, so it becomes possible to adopt the required adjustments in order to obtain the intended result of the decisions implemented (Benowitz, 2001).

After putting the decision into action, and ensuring the commitment of individuals in the organization, the result or outcome of the decision needs to be evaluated to ensure that the problem is resolved (Robbins & Coulter, 2018). This step is a form of managerial control in the decision making practice, if undesired effects take place during the implementation, changes and correction should be initiated in order to increase the chances of achieving the desired goals and objectives. This also makes the problem solving process an ongoing and dynamic activity (Schermerhorn, 2013, p. 179).

If the decision implemented does not seem to be going well, managers have many options to respond, in such a case, based on the situation, they may choose another original alternative for implementation, deciding to start the process again so as to recognize that the process conducted effectively, or more time can be allotted if decision makers realize that the alternative has been effectively chosen and implemented but the time span has not been sufficiently identified (Griffin, 2016, p. 109).

The next step of the manager can be based on the result of this step; if the problem still exists, then managers need to identify what went wrong in the process of

decision making, if the alternative selected was the best choice, or if the implementation step was poor and not as expected. The result of this re-evaluation would lead to redoing the previous step or the whole process of making the decision (Robbins & Coulter, 2018).

For this step to be effective, there must be a measurable objective based on which a comparison can take place between the objective which is the planned results with the actual output, and based on this, if any deviations are found, further changes may be deemed essential for adoption. Further, if this objective is vague or is not available, then the possibility to judge the output of the decision is unlikely to happen (Ivancevich, et al., 2014, p. 409).

The benefit of this step is reflected on the development of the decision making skills and process, as further information can be obtained by comparing the desired objectives and the accomplishment made by implementing the decision (DuBrin, 2012, p. 158).

2.10.3 Strategic practices relevant to decision making

The decisions taken should be in light of the strategic intent of the decision maker/organization. An insight into the following becomes essential. Hence, this section presents the overview of the strategic practices relevant to the decision making practices.

2.10.3.1 Evaluating current performance (ECP)

Performance evaluation acts as a managerial tool that helps to show the quality of individual performance in an organization (Grote, 2002). Further, it is a tool for connecting an abstract concept with the empirical indicators (Niculescu, 2005, p.

246). This involves a formal review into the performance during a specific period, which becomes the basis for the upcoming plans and performance. Further, it also leads to performance rating which is a critical point of evaluating employees and workers in an organization based on their work (Armstrong & Baron, 2006, p. 19).

Armstrong & Baron, (2006, p. 19) indicate that regardless of the fact that evaluating the current performance (ECP) is a continuous process (throughout the years), it is still recommended to conduct evaluation of the performance periodically (once or twice per year) so as to ensure the desired development is achieved in the organization, as a focal point to boost the performance and direct efforts towards goal fulfilment.

For an organization to be efficient, it has to improve, and such improvement requires management, management requires control, and this control requires measurement (Albu, N., & Albu, C. (2003, p. 41). This implies the importance of continuous evaluation of the performance of an organization. Performance evaluation in reality is supposed to be rooted in the reported performance of the individuals in an organization, for the purpose of ensuring the five elements of performance are put into good action, which are, agreement, measurement, feedback, positive reinforcement and dialogue (Armstrong & Baron, 2006, p. 75).

There are many resources for information with respect to evaluating performance; such as, subordinates, peers and direct supervisors. In performance evaluation, managers and employees are responsible for assessing the gap between the desired behaviour exhibited in the workplace and the desired output achieved (Aguinis, 2014).

2.10.3.2 Evaluating Managerial performance (EMP)

Performance is defined as the result that stems from the quantity as well as the quality of the work discharged by individuals in an organization (Ruky, 2002). It is also defined as, the achievements that result from comparing the actual performance with the pre-determined performance criteria (Suprihanto, 2000). Managerial performance is the totality of any measurable accomplishment in a certain domain (Yucesoy & Barabási, 2016). Therefore, performance conveys the efforts of the individuals towards realizing a conclusion with respect to the achievement of their goals.

Levinson, (1984) argues that evaluating managerial performance (EMP) results in three benefits, which provide appropriate feedback to the individuals based on their performance; determine the need for change or modification of the behaviour among individuals or establishing new habits at the workplace, act as a good source for managers to establish plans for future assessment or compensation for individuals. It is further argued that for effective management, evaluating the performance becomes a central point, as it focuses not only on the behaviour of individuals, rather, it focuses on the outcome of such behaviour.

No matter how systems or technology is used to evaluate the performance, it is still a stressful and uncomfortable task (Grote & Grote, 2011). Levinson, (1984) has proposed a few steps for easing the performance evaluation in an organization; these steps are a) setting expectations early, so individuals are aware of how the evaluation would be conducted; b) laying the groundwork to refresh the memory among individuals and preparing for the evaluation process; c) setting a tone with respect to the focus in the evaluation process; and d) coaching individuals

constructively, holding specific grounds to maintain the evaluation exclusive for the performance review process and avoiding ranking or promotions in the same sessions.

Evaluating managerial performance (EMP) is relevant to all organizations, as this way of working, keeps them updating and changing; with all the changes that take place in the work environment, they still give autonomy and accountability with respect to their results. Therefore, even though the traditional ways are less adopted now, evaluating managerial performance (EMP) is still a focal point for the organization to step forward (Di Fiore & Souza, 2021).

Even though some companies get rid of the performance evaluation, that does not necessarily mean that the performance is not any more evaluated, as evaluation and rating can be done subjectively behind the scenes, without the involvement of individuals or a specific system. Because the values of an employee or a subordinate is summarized by their contribution to the organization/reported performance (Goler, et al., 2016).

2.10.3.3 Evaluating managers' performance (EMSP)

Drucker, (1954) stated in his book "The practice of management" that performance measurement is one of the crucial tools for the performance of an organization. Further, research indicates that performance appraisal systems control the behaviour of managers, whether it is of national or international levels (Janssens, 1994). Evaluating the managers performance (EMSP) in an organization can be based on evaluating their personal qualities energy and enthusiasm. This facilitates the understanding of the status of the current work as well as the possibility to progress in future (Ramosaj, 2005, p.176).

There are a few approaches suitable for evaluating and evaluating managers performance (EMSP); these approaches are the judgmental, the absolute standard, and the result-oriented approaches (Ramosaj, 2016).

2.10.3.4 Strategic analysis of internal resources (SAIR)

Resources and capabilities of an organization act as vital tools in the hands of the organization as the decisions or choices made by administrators require resources and capabilities. Therefore, measuring and maintaining these resources becomes a source of power for a firm/organization. The resources are, any form of inputs in the hands of the organization to produce products and services, whereas the capabilities are the skills owned by the organization to utilize such resources in most efficient manner to achieve their goals as well as a competitive advantage (Carpenter & Sanders, 2014, p. 118-119).

While the resources refer to whatever the organizations possess, such as, capital equipment, employee skills, brands, patents etc. their competencies are the tools used by organizations to utilize the resources in a sufficient way to fulfil their pre-determined goals (Sadler, 2003, p.166).

Strategic analysis of internal resources (SAIR) is traditionally important to any organization, as they act as an important source for realizing competitive advantage. However, with the advancements in the global economy, these resources are usually dominated by competitors. This creates a need for the organization to analyse these resources, identify the capabilities so as to achieve a competitive advantage (Hitt, et al., 2007, p.75).

One of the tools for strategic planning is internal analysis. The internal analysis is centred around identifying and reviewing the internal capabilities and resources

of an organization for identifying their strength and weakness, and being in a position to plan their future (Hill, et al., 2020, p.18). Core competencies can be an important driver for competitive advantage for any organization as they are considered unique strengths and lead to identifying and differentiating the product and services, and create high values at lower prices compared to their competitors (Rothaermel, 2015, p. 100).

For an organization, opportunities would be more possible opportunities without the utilization of the possessed resources. Evaluating the resources and capabilities of the organization becomes mandatory, so as it facilitates the strategic leader to decide on what specific opportunities are to be pursued (Thompson & Martin, 2005, p. 194).

2.10.3.5 Strategic analysis (SWOT) (SASWOT)

The emphasis of this analysis is to compare strengths, weaknesses, opportunities and the threat of an organization. Its main goal is to identify specific strategies to utilize the possible opportunities, face the possible threats and ride out the factors causing weakness in the organization. Further, it also aims to align the business model of an organization, to match their resources with the demands in their market, comparing the possible strategies and choosing the one which would contribute towards sustaining the competitive advantage in the market place (Hill, et al., 2020 p.20).

The strategies adopted by an organization to maintain their competitive advantage could be categorized into four types; function level strategies, business-level strategies, corporate level strategies and global strategies (Hill, et al., 2020, p.20).

Having knowledge and insight into the current strategy is mandatory to run this analysis. Primarily, opportunities and threats are listed and analysed, on the other hand, the organizational capabilities reveal the strength and weakness of an organization. Opportunities and threats differ based on the field of function and the area of their operations. Opportunities explored through SWOT analysis may include technology leadership, financial strength, relative market share, skilled personnel, distribution system/networks, favourable public image etc. while threats that need to be overcome and reviewed include competitors approach, economic and political uncertainty, regulations and its plausible impact, shortage in skills and supplies, and changes in customers taste/preference (Dobson, et al., 2004, p. 46-47).

SWOT analysis is considered as one of the strategic planning tools that are widely and commonly used by the managerial aspect to identify the external issues as well as the internal strengths and weaknesses within the organization. However, it does not provide certain description of the strategic decision that may stem from the analysis of weaknesses and strengths of an organization. Therefore, when the future is uncertain in some cases, SWOT analysis becomes less applicable (Ginter, et al., 2018, p. 377).

SWOT analysis help managers in the process of evaluating the current performance of an organization as well as its prospective future performance; which is conducted through scanning internal and external environment, this leads to identifying any such influential factor that may probably impact the current or the prospective performance of an organization in the future (Rothaermel, 2015, p. 118).

The result of applying SWOT is not only relevant for identifying weaknesses and strengths of an organization, but also relevant for identifying of further opportunities

that were not taken advantage or utilized by the organization, either due to shortage of appropriate resources or any such other factors (Wheelen, et al., 2015 p. 198).

2.10.4 The mediating and moderating variables

This section presents an insight into the five variables included in the research model. These variables are Entrepreneurial competencies and the willingness of managers for further education or training in management and entrepreneurship as moderating variables; and organizational learning, adopting IT systems in decision making and the tradition decision making practices as mediating variables.

2.10.4.1 Willingness for further training and education (WFFTE)

Cruz, et al., (2009) state that individuals who have a tendency for further management education are observed to be more innovative. Better business results can be obtained by obtaining specific entrepreneurship education. The role of formal training towards SMEs performance is more contributory than the role of informal training towards the performance of manufacturing SMEs (Jayawarna, et al., 2007).

Karadag, (2017) reported that the performance of financial management practices is found to have a positive relationship with the education level of entrepreneurs/SME managers and owners. Participating in entrepreneurship education is found significantly influencing and exerting entrepreneurial intention (Küttim, 2014). Similarly, entrepreneurship orientation is found to influence SMEs performance (Alvarez-Torres, et al., 2019). Therefore, entrepreneurship orientation among the entrepreneurs is a necessity for SMEs performance to grow and develop (Herlinawati, et al., 2019).

Management training is reported to have a positive association with the performance and development of small and medium enterprises (Wong, et al., 1997). Pansiri and Temtime, (2008) identified four perceived critical managerial skills that influence on the performance of SMEs, they are managerial background, organizational development, human resources development, and managerial competency. Lacking any of these managerial skills would certainly influence the performance of small and medium enterprises (Pansiri & Temtime, 2008).

Njoroge and Gathungu, (2013) in their research explored how lacking training in strategic and financial management hinders the ability of SMEs to grow beyond the first stage of development. Westhead & Storey, (1996) pointed out that some of the management training have an impact on SMEs performance, while other may not have the similar level of impact. The reason could be reflected on the type of training, the provider of such training, and the duration of training as well.

Hence, in this background, this research aims to measure the impact of the tendency/willingness of managers/owners to pursue management and entrepreneurship education (WFFTE) as a mediating variable on the performance of SMEs, in addition to investigating the effectiveness of decision making practices on the SMEs' performance.

2.10.4.2 Entrepreneurial competencies (ECs)

Entrepreneurs operating SMEs engage in complex tasks and responsibilities which requires them to be equipped with all the entrepreneurial skills and competencies (Ahmad, et al., 2010). Entrepreneurial competencies (ECs) and their role in improving the performance of small business is worth investigating to

observe how it facilitates them in achieving competitive advantage (Mitchelmore & Rowley, 2010).

Entrepreneurial competencies (ECs) significantly and positively impact SMEs performance (Aliyu, 2017; Abaho, et al., 2016). Further, entrepreneurial competencies have strong bearing on the profitability, sales growth and organizational effectiveness of SMEs (Stephen, et al., 2017). They also impact the innovativeness which positively influences SMEs performance (Ng, et al., 2018).

Comprehensive entrepreneurship-training programs become crucial for the success as well as continuous development of small businesses and their performance (Ladzani & Van Vuuren, 2002). Individuals entrepreneurial orientation also impacts SMEs performance through a partial mediation of entrepreneurs' networking (Fatima & Bilal, 2019), as it is evident in the literature that entrepreneurial knowledge and competencies directly affects SMEs performance (Ibidunni, et al., 2018; Omerzel & Antončič, 2008). Financial literacy as a life skill of entrepreneurs, impacts the performance of SMEs (Eniola & Entebang, 2016). Further, skills like computer literacy, communication and creativity have also been identified as very important skills for any entrepreneurs running SMEs (Nehete, et al, 2011). This research aims to measure the impact of entrepreneurial competencies (ECs) are assessed [as a moderating variable] on the performance of SMEs.

2.10.4.3 Traditional decision making practices (TDMPs)

When investigating the management and decision making from an Arabian perspective, traditional Arab society is famous for applying consultative decision

making which is a normal practice to consult the members of community or kinship network or the tribal structure (Ali, 1993).

Manufacturing enterprises are found to pay attention to regulatory awareness and green supply chain management practices. Leading manufacturers in developing countries have a high level of awareness about the environmental regulations and management practices implemented, while traditional manufacturers are found to possess limited awareness of environmental regulations yet are implementing green supply chain management practices (Zhu, et al., 2017).

Business owners in the Arab Region do not utilize a full range of human resource practices, which indicates that they are far from applying these practices while some enterprises apply it partially and sporadically, many firms rely on traditional patriarchal authoritarianism³ and are reluctant to provide basic practices and benefits for workers; like, health care. performance appraisal training and development (Al-Jabari & Mohammad, 2011).

Even though there is scant research into actual management practices observed among Arab nations, business societies in the Arab Region are found to be in transition from working wrong traditional decision making practices (TDMPs) adopting a mix of Arab and Western business practices. Introducing western and eastern management practices³ successfully has been possible due to the transition in process where the organizations are tailoring to reflect the unique nature of the business practices in the Arab Region (De Waal & Frijns, 2016).

³ a system of society where the men are the head-of-the-household, carry the most power and where the family lineage passes on through men.

The society of Yemen being young, and with the growth in population, it has led to more newcomers to the labour market, which has further increased the rate of unemployment, as most of the newcomers are not able to engage in employment, because they are not graduates. It is also true that only 20% of graduates possess the required skills as per the job market, which means that education and vocational training (regardless of what attention is already paid) is still weak and hence not able to go along providing the required workforce for the job market (Toki & Qadhi, 2015). Universities in Yemen do not play a key role in developing human resources for the private sector and their own human resources, with focus on performing the traditional job which is education/teaching driven without paying any attention to research and development (Kolaib, 2002).

When concerning managerial difficulties among enterprises and industries in Yemen, there are no modern management methods followed along with the lack of skilled workforce, directing the business using traditional/basic method and no managerial order in organizing work in departments and management of the organization (National Information Center, 2009). This maximizes the cost of functioning in such business environment, as the challenges and obstacles become more than the opportunities, for SMEs to raise and realize growth and development. This led to considering the traditional management practices (TDMPs), along with being an independent variable, as a mediating variables in the relationship between decision making practices and SMEs performance.

2.10.4.4 Organizational Learning (OL)

Organizational learning (OL) has been described as a diverse field that involves many other fields such as business management, sociology, psychology etc. Hence,

it is described as “a process of developing, retaining and transforming knowledge in an organization” (Chuah & Law, 2020). Organizational learning is always associated with organizational performance (Idowu, 2013), as it acts as an influential factor when associated with sales and employment growth (Michna, 2009). It further mediates the relationship between organizational performance and other variables such as personal mystery (Garcia-Morales, et al., 2007), leadership style (Rehman, et al., 2019) and human resource management practices (Hooi & Ngui, 2014). It also mediates the relationship between firms’ innovation and entrepreneurial innovativeness, proactiveness and risk-taking (Wang, et al., 2015).

When SMEs intend to pursue innovation to enhance and develop their performance driven by innovation, organizational learning plays an important role in such development (Tian, et al., 2020; Gomes & Wojahn, 2017), as providing knowledge acquisition, interpretation, and storage is considered as an essential step to employ organizational learning, in the process of innovation, such as in the case of adopting e-business (Cegarra-Navarro, et al., 2007).

In some contexts, organizational learning plays a significant role in contributing towards developing innovation capability among SMEs (Salim & Sulaiman, 2011), shaping organizational performance, and enhancing the status of entrepreneurial orientation (Altinay, et al., 2016). However, in other contexts, it has been reported to have insignificant impact on organizational performance of SMEs (Gomes & Wojahn, 2017).

Further, the leadership style is reported to have an influential role on the level of organizational learning among SMEs (Rehman, et al., 2019) and entrepreneurial orientation (Dada & Fogg, 2016). For this research, organizational learning (OL) is

assessed as a mediating variable in the relationship between decision making practices and SMEs performance in the research model.

2.10.4.5 Information Technology use in decision making (ITinDM)

Investing in information technology by firms and companies can bring both tangible and intangible benefits to their performance. Further, the relationship between information technology and the performance of firms and companies is moderated by decentralized decision making (Mohamad, et al., 2017).

There are many benefits that can be realized by adopting information and communication technology in the process of decision making among firms and companies. Such key benefits include, reducing the cost of internal coordination and facilitating the decision to be on a higher range of hierarchical levels. However, the level of knowledge among employees, especially in the field of data science still plays a key role in the quality and effectiveness of the decisions of the organization (Lukić, 2014).

Research indicates that the level of information technology adopted (from the point of view of administrative staff) is highly correlated with the participation in the process of decision making. This describes that the role that information technology can play in improving the decision making process and the probable outcome among firms and companies is essential (Zaqout, et al., 2018).

Schneider & Leyer, (2019) investigating the role of adopting artificial intelligence in the delegation process of decision making, concluded that the complexity does not impact the delegation of decisions rather delegating a decision is significantly influenced by the situation, and the awareness, which is one of the major phases of strategic use and planning of information system organization. For

this research, the role of adopting information technology in decision making (ITinDM) is assessed as a mediating variable in the research model.

2.11 Research Sample

For the purpose of identifying the sample and its size for the study, light would be shed on nature of the population of the study. The population of the study being the manufacturing SMEs in Yemen who are into food processing and home appliances.

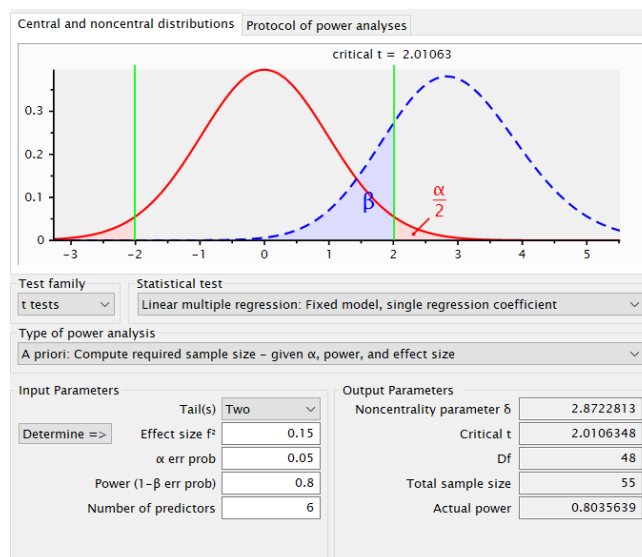
It is worth mentioning here that there is no legitimate database revealing the demographic characteristics of the population; this makes it challenging to adopt the random sampling technique; this also indicates that opting for probability sampling is sort of challenging since an opportunity cannot be equally given to each enterprise. Hence, non-probability sampling technique has been adopted, and therefore, convenience sampling is considered, as it well suits the condition of manufacturing SMEs in Yemen.

Since the study targets the decision making practices among manufacturing SMEs in Yemen, the sample represents the managers from such SMEs, where high level administration staff are targeted such as the general managers and departmental heads in manufacturing SMEs. One manager is chosen from each SMEs; however, in a few cases, maximum of three managers are chosen from one SMEs. As for the size of the sample, the rule of thumb states that, when applying the nonprobability sampling, higher sample size is recommended. Hair, et al. (2019) indicate that for multiple regression, a minimum sample of 50 observations is required, and 100 observations is preferred. Further, they stated that a sample of 30 observation could be equivalent for running simple regression; however, a sample

of 1000 or more observations lead to overly sensitive significance. Another rule applied to identify the sample size while using PLS-SEM is the “10 times rule” suggested by Hair et al. (2011) where, the minimum sample size required should be ten times greater than the maximum number of indicators for any latent variable in the mode which in the case of this study becomes six statements into ten, leading to a number of 60 observation as the minimum number of the sample required for the study.

Further, G-Power software for power analysis is used for the purpose of determining the minimum sample size required for analysing the impact of predictors (Faul, et al., 2007; Faul, et al., 2009). When considering the same for the study, the minimum sample size was found to be 55 at the effect size of 0.15 and 101 at the effect size of 0.08. The responses collected (which are 400), satisfy the minimum sample size requirement according to the criteria discussed above (Figure 2-4).

Figure 2-4: Determining the minimum sample size through G-Power



Source: G-Power of power analysis.

2.12 Data source

The study relies on primary data regarding the opinion compiled from the point view of managers and owners of manufacturing SMEs. The data is compiled using a survey questionnaire that was developed for the purpose of the study. The data is organized, analysed and presented for the purpose of exploring the output of the proposed research model.

For secondary data, the study relied on the data relating to performance, growth and contribution of manufacturing SMEs in Yemen. The annual reports of Central Statistical Organization (CSO) – the authority of preparing reports with respect to the economy of Yemen has been adopted for the study.

2.13 Research instrument and measurement

For the purpose of measuring variables in the research model in a unidimensional way (which is a primary condition) the Likert scale are used for data collection, multiple resources in the literature are investigated to adapt the suitable scale that can better measure the decision making practices observed in underdeveloped economies.

Efforts are made to adopt a standardized scale to measure such practices. However, since no previous studies have investigated the variables in the research model as it is, multiple resources have been used to identify the relevant statements that can be used to measure the concerned variable (decision making practices, SMEs performance, factors relevant to the development of conducive business environments etc).

As far as uni-dimensionality is concerned, the minimum number of statements measuring each variable is four statements while the maximum is six statements. After the pilot study analysis, experts were consulted for the purpose of reviewing the ability of the research tool to measure the decision making practices among manufacturing SMEs in Yemen. The experts who were consulted with respect to the research tool are from academia as well as industry (Appendix 04) presents the list of the experts who were consulted for the purpose of evaluating the research instrument before and after the pilot study. The following table (Table 2-1) illustrates the resources that are investigated for the purpose of developing the research questionnaire. Further, it presents the number of variables as well as statements finalized for the final data collection process. The detailed form of the questionnaire can be found in the appendices (Appendix03).

Table 2-1 Variables adopted for the research model with resources.

<i>Variables</i>	<i>No. of items</i>	<i>Consulted authors</i>
Performance of Manufacturing SMEs (Dependent variable)		
1. Enterprises growth performance.	4	(Makanyeza and Dzvuke, 2015;
2. Customer Performance during last five years.	3	Mabenge, Ngorora-Madzimure and Makanyeza, 2020; Karabulut, 2015; Al-
3. Internal Business Processes Performance.	4	Matari, Al-Swidi and Fadzil, 2014:
4. Learning and Growth Performance.	3	Santos and Brito, 2012)
Decision making process (Independent variable)		
5. Identifying a problem.	4	(Exploratory study; Putti, Koontz and
6. Developing alternatives.	4	Weihrich, 1998; Harris, 1998;
7. Evaluating available alternatives.	4	Aljawhary, 1982; Mack, Crawford and
8. Selecting the best alternative.	4	Reed, 2004; Lunenburg, 2010; Harrison,
9. Implementing the best alternative.	4	1996; Dean Jr and Sharfman, 1996;
10. Monitoring and following up the decision post implementation.	4	Kirkwood, 1997; Jarrar and Abu Bahaa, 2014)
11. Evaluating current performance.	4	(Exploratory study; Putti, Koontz and Weihrich, 1998; Harris, 1998; Aljawhary, 1982; Mack, Crawford and Reed, 2004; Lunenburg, 2010; Harrison, 1996; Dean Jr and Sharfman, 1996; Kirkwood, 1997; Jarrar and Abu Bahaa, 2014)
12. Evaluating Managerial performance.	4	(Exploratory study; Lawler III and Porter, 1967; Yanli, Yingjun and Chenguann,

<i>Variables</i>	<i>No. of items</i>	<i>Consulted authors</i>
		2009; Abraham, Karns, Shaw and Mena, 2001)
13. Evaluating managers' performance.	4	(Exploratory study; Putti, Koontz and Wehrich, 1998; Harris, 1998;
14. Strategic analysis of internal resources and capabilities.	3	Aljawhary, 1982; Mack, Crawford and Reed, 2004; Lunenburg, 2010; Harrison, 1996; Dean Jr and Sharfman, 1996;
15. Strategic analysis (SWOT).	5	Kirkwood, 1997; Jarrar and Abu Bahaa, 2014)
Mediating and moderating variables		
16. Traditional Decision making style.	4	(Exploratory study, Mann, 1982; Scott and Bruce, 1995; Mann, Burnett, Radford and Ford, 1997; Alacreu-Crespo, et al., 2019; Spicer and Sadler- Smith, 2005)
17. Organizational Learning.	5	(Gomes and Wojahn, 2017; Rehman, Bhatti and Chaudhry, 2019)
18. Entrepreneurial competencies.	5	(Kyndt and Baert, 2015; Tijn, 2019)
19. Tendency for further management and entrepreneurship education.	4	Exploratory study
20. Information technology in decision making.	5	(Molloy & Schwenk, 1995)
21. Common Method Bias.	3	(Miller & Simmering, 2020).

Here, the respondents are asked to rate their opinion on a seven-point scales where the first point indicates their strong disagreement to the statement, and the seventh point indicates their strong agreement to the same.

2.14 Data collection

The data was collected in two stages; the first stage involved distributing questionnaires for collecting data from 50 manufacturing SME managers. The purpose is to ensure that the survey tool is well understood by the respondents so as to make necessary changes wherever essential and ease the process of collecting the appropriate data. The second stage involved the final data collected after making necessary modifications to the research tool to ensure the most appropriate and relevant data for the research study is guaranteed.

The process of data collection continued for five and half months, from June 15th, 2021, to December 7th, 2021. During the process are assured that the purpose of data

collection is conducting scientific research and their responses remain confidential. The research questionnaire with its content is explained to respondents after obtaining their consent to fill out the questionnaire. Their doubts with respect to statements in the questionnaire are cleared as well.

A total of 472 questionnaires were distributed to the targeted respondents. However, the questionnaires were returned back from a handful number of respondents where the final number of returned questionnaires was 416 forms. After the review of the already filled out forms, a total of 397 forms are found eligible for data analysis, where the rest were found incomplete or filled only in part – demographic information. However, three more respondents were sought in order to have a total sample of 400 respondents. It is worth mentioning here that the form of data collection was similar to the interview method where the team member asked the question verbally and marked the answer received from the respondents on the form; this was with an intent to reduce the tendency of bias in responding to the questionnaire statements. However, this method was used in the majority of the cases but not with all of respondents.

2.15 Data analysis

The analysis of the collected data is conducted in few stages; every stage differs from its previous steps depending on the objective of the steps. The process started with data screening, where forms that were incomplete had to be excluded, and getting the data coded and prepared for the data analysis.

2.15.1 Descriptive statistics

The second stage involved performing the descriptive analysis of the data. This step involved tabulating and presenting the data to provide insight into the nature of the responses. Along with the statistics relevant to the demographic variables of respondents, the frequencies of responses, the percentages, the mean, standard deviation, skewness and kurtosis are presented.

2.15.2 Reliability and validity

After presenting the data with respect to all the involved variables. Measures of reliability and validity are inspected to ensure that the research tool is reliable and valid. Internal consistency of variables is assessed using Cronbach's Alpha, McDonald Omega and further measures of reliability involved confirmatory factor analysis (CFA).

2.15.3 Inferential statistics

The section of inferential statistics unveils the evaluation of the relationships set for the research model to test the research hypotheses set. This involves running the required statistical tests in order to investigate the relevant variables; for which the following tests were:

2.15.3.1 Analysis of variance

In this section the responses with respect to decision making practices and SMEs performance are assessed to identify the significant differences according to the differences existing in the demographic characteristics of respondents. The

statistical tests used for the analysis of variance are Independent Sample t-test and One Way ANOVA.

2.15.3.2 Structural equation modelling:

For the purpose of testing the casual and predictive relationships set for the study, the study adopts Partial Least Square Structural Equation Modelling (PLS-SEM) as it enables the assessment of such relationships (Chin, et al., 2020). It is also appropriate as it maximizes the variance explained by the independent variables in the dependent to optimize the prediction of the casual relationships in the model (Carrión, et al., 2017; Cepeda-Carrion, et al., 2019; Rigdon, et al., 2017). Further, PLS-SEM uses a series of ordinary least square regressions to analyse and calculate the composite scores of the predicting variables (Hair, et al., 2019). Furthermore, PLS-SEM enables researchers to identify the predictive power of the research model, which is different from other techniques applied in structural equation modelling such as Covariance Based Structural Equation Modelling (CB-SEM) (Hair, et al., 2020a; Chin, et al., 2020; Manley, et al., 2020).

2.15.3.2.1 The Measurement Model:

PLS-SEM consists of two major steps, in the first step, it assesses the measurement model which is known as Confirmatory Factor Analysis (CFA), and in the second stem, it assesses the structure model. Confirmatory factor analysis (CFA) is applied for investigating the relationship across variables, be it the relationship of the independent variables with each other or with the dependent, mediating and moderating variables. Since constructs have already been identified, there is no need to run an exploratory factor analysis (EFA), as EFA is used when

the researcher knows very little about the factors of the research (Green, et al., 2016). Further, EFA is used for generating theory, while CFA is employed to test and investigate such theories (Henson & Roberts, 2006). Through CFA, construct reliability and validity is assessed to ensure that the research model measures what it was intended to measure, and whether the research model fits the data in the context of the study.

PLS-SEM is an ideal technique to test the reliability and validity of the research model as it does not make it essential for the data to be normally distributed (Hair, et al., 2019). Since the research model consists of reflective constructs, testing the reliability of each construct depends on calculating the values of factor loading to ensure that every variable is contributing towards its concerned factor where the optimum factor loadings values should not be lower than 0.708 (Hair, et al., 2016); Cronbach's Alpha where the expected value should be equal or greater than 0.8 (Cortina, 1993), while a value of 0.7 is considered acceptable (Nunnally, 1978; Hair, et al., 2006). Further, the Dijkstra and Henseler's rho is used (Dijkstra & Henseler, 2015), and the composite reliability (CR) of the constructs where the acceptable value should not be less than 0.7 to ensure that the constructs are reliable (Hair, et al., 2019; Hair, et al., 2020). Furthermore, Average Variance Explained (AVE) for each construct is investigated to ensure that their extracted variance is equal or greater than 0.5 (Hair, et al., 2020). These measures present the convergent reliability of each construct which also ensures that respondents have well understood the relevance of each statement/concerned variable or the contribution of statements to their relevant factors. Beyond that, discriminant validity, which is the process of ensuring that each latent factor is independent from other latent factors, is assessed by applying the Fornell & Larcker's criteria (Fornell & Larcker,

1981) which states that the square root of the values of the Average Variance Extracted (AVE) should be greater than the inter-item correlations, and another criteria which is Heterotrait Monotrait criteria where its acceptable values are expected to be greater than 0.85 (Hair, et al., 2017; Henseler, et al., 2015). The measures of discriminant validity ensure that respondents are able to distinguish the differences among statements in two different constructs which leads to ensuring that there are no cross-loadings of a statement on two or more factors equally.

2.15.3.2.2 The structure Model:

For assessing the structure model which contains hypotheses testing, the paths are assessed to measure how decision making practices as an independent variables, along with the other independent variables, are impacting SMEs performance as the dependent variable. The significance of such impacts are assessed by applying the bootstrapping technique, where the sample is divided into 10,000 samples in order to test the study hypotheses (Hair, et al., 2017; 2020). Further, the level of tolerating multicollinearity across constructs in the research model is evaluated and assessed by evaluating Variance Inflation Factor (VIF) to ensure that the values of VIF are not exceeding 3.33 (Hair, et al., 2020). R square is assessed, in this study, to identify how much variance in SMEs performance is explained by decision making practices and other independent variables, this unveils the explanatory power of the research model (Shmueli & Koppius, 2011). Further, the technique of blindfolding is used with a default omission distance of 7 and maximum iterations of 300, which is a technique that re-uses the sample to calculate the value of Stone-Geisser's Q^2 (Stone, 1974; Geisser, 1974) this is conducted with objective of identifying the accuracy of the model's prediction (Rigdon, 2014).

2.15.3.3 Mediation analysis:

Hair, et al., (2017) described the optimum criteria for mediation analysis, which consists of three main steps followed by researchers, the direct effects of the independent variables on the dependent variables are assessed in the first step, if found significant, researchers can proceed towards the second step in the mediation analysis while if they are not found significant, then no chance of running mediation analysis in such cases. In the second step, the indirect effect – which is the effect of the decision making practices which is the independent variable on the three mediating variables as the first part of the indirect effect, and the second part involves the effect of the three mediating variables on the SMEs performance as the dependent variable are studied, similarly, if such relationship is found statistically significant, researchers can proceed to the third step of the mediation analysis, and if found insignificant, the result is that there is no mediation. In the third and last step, the total effects are assessed – the direct effect with the presence of the mediating variables, if they are found significant, it implies that partial mediation exists, but if they are found insignificant, it implies that there is an existence of a full mediation.

Further, the study follows the procedure described by VanderWeele & Vansteelandt, (2014), which proposes that the mediation analysis should not be conducted separately for each mediator, rather, it can be conducted for all the mediating variables at once.

2.15.3.4 Moderation analysis:

Moderation analysis is applied to identify how the effect of decision making practices on SMEs performance is impacted by a third variable. The procedure followed to conduct moderation analysis is the two-stage approach (Chin, et al., 2003). This procedure has its roots in exploiting the variable scores in PLS-SEM, where its first stage is concerned with obtaining the main effects to extract the variables score without considering the interacting effect, and the second stage involves the variable score with the moderator to create the interaction effect term, and based on the outcome of the influence of the interaction effect on SMEs performance, a variable is said to be or not to be moderating the relationship between the independent and dependent variables (Henseler & Chin, 2010; Becker, et al., 2018). The variables considered for moderation analysis include entrepreneurial competencies of managers and owners as well as their willingness for further education.

2.15.4 The predictive power of the model

For the purpose of assessing the predictive power of the model, a technique named “PLS Predict” has been applied with ten folds and 10 repetitions which generates prediction in a case wise method (Shmueli, et al., 2016). Conducting this assessment is relevant to the symmetric distribution of the prediction errors, when the distribution of the prediction errors seems to be symmetric, the Root Mean Squared Error (RMSE) is chosen for the purpose of comparing PLS model with the LV model, but when the prediction errors are not symmetrically distributed, then the Mean Absolute Error (MAE) is used to compare both models (Shmueli, et al.,

2019). Where if the PLS-SEM model is greater than LV model for all the indicators, the model is said to have high predicting power; if it is greater than LV model in case of majority of the indicators, the model is said to have medium predictive power, and if it is greater than LV model in minority of the indicators, the model is said to have low predicting power, but when the PLS-SEM model is not found greater than LV model for any of the indicators, then the predictive relevance of the model is not established.

2.16 Chapters scheme

The research work consists of five chapters, where in the first chapter is a general introduction, and the last chapter is the findings, suggestions and conclusion. The following table exhibits the scheme of the chapter included in the study.

Table 2-2:Chapters scheme.

No.	Title	Brief description
1	Introduction	<p>This chapter is divided into two parts, part A and Part B.</p> <p>Part A presents the study and its themes to the reader where a general overview is provided regarding management and management practices and their relevance to underdeveloped economies. It also gives an overview of the Yemeni context in relevance to the adoption and adherence to management practice that aim to improve the business performance.</p> <p>Part B, present the contributions of previous research work with respect to management practices. It focuses on specific points while reviewing the previous studies, this includes:</p> <ul style="list-style-type: none"> - Management Practices and their importance, - Decision Making Practices (General Context and Yemeni Context), - SMEs Context, and - Adopting sound decision making practices among manufacturing SMEs.

No.	Title	Brief description
2	Research Design	This chapter provides the research methodology, design and approaches adopted for carrying out this study. It also provide a discussion of the theoretical framework of the research model and the details of the variables and their measurement, the sample and data collection, the analysis methods and statistical tools used for the analysis of the data, and the chapters scheme.
3	Manufacturing SMEs in Yemen: A theoretical background	<p>The fourth chapter is dedicated to the general overview of the manufacturing SME sector in Yemen where its size, type, contribution and the obstacles that are faced by them.</p> <p>The chapter is prepared and written from many relevant resources which may be considered a good source for information about the Yemeni SME sector for researchers to build further research goals and investigation.</p>
4	Contemporary Management Practices and Resurgence of Manufacturing Sector: An analysis	<p>This chapter presents the output of analysing the data collected to test the hypotheses set for the study. It is divided into three major sections, The first section is the preliminary analysis of the data which includes data screening, investigating the normality, linearity in the data and investigation the common bias in the data. the second section is the descriptive analysis of the resources collected from the respondents through frequency, percentages, the mean and standard deviation.</p> <p>The third section involves the inferential analysis that aims to investigate the research hypotheses which also involves the analysis of variance, the structural equation modelling that investigates the research model and conducting mediation and moderation analysis.</p>
5	Findings, Suggestions and conclusion	The last chapter give a through overview of the findings of the research, the suggestions drawn based on the research findings. Then it presents the concluding remark about the whole research work.

Chapter Three: The manufacturing SMEs in Yemen: A theoretical background

3.1 Introduction

Industrialization is said to be the most significant factor contributing to the objective of globally achieving economic development. However, when it comes to the underdeveloped economies, the role of the industrial sector in the economic developed is found to be compromised due to the tremendous number of challenges faced by organizations/enterprises who are into manufacturing sector. Such challenges require extra effort from both Government and Investors to create a conducive business environment that is essential to realize economic development.

Yemen being one of the underdeveloped Countries and the poorest economy in the MENA region, when compared to its neighbouring Countries, the development of the manufacturing sector still lags behind with respect to its growth, development and contribution towards the country's GDP.

The SMEs in low-income countries play a significant role in creating employment and generating income. The manufacturing sector in Yemen has achieved remarkable development during the eighties of the last century due to the oil discovery and its industry. However, due to the recent economic and political instability, a significant deterioration has been observed in the industrial sector where a plethora of challenges are faced by the manufacturing enterprises, which is also hampering their business performance and growth. This chapter presents a

background about the manufacturing sector in Yemen, manufacturing SMEs in Yemen, their contribution and obstacles faced by them.

3.2 Manufacturing sector during the Ottoman empire in Yemen

Some trace of development was observed during the Ottoman empire rule in Yemen; such as manufacturing enterprises that were mainly coal-fired power sourced units in many sectors, for instance, the Islamic factory of iron and steel in Sanaa which was into production of iron and steel, basic vehicles and different transport materials; the Islamic military factory which produced light and basic heavy guns and ammunition with manufacturing capacity of around 7 to 10 thousand shotgun bullets daily; Parts manufacturing factory which produced parts for civil and military vehicles; the electric textile factory which produced Cotton textiles, wool textiles and fancy carpets; the Islamic factory for glass which produced multiple types of plain and coloured glass; Marble factories to produce many types of marbles; Milling grains factories using multiple methods such as windmills crafts – in mountainous or highland areas, watermills that existed near rivers, springs and streams, steam mills which work with the steam generated by the coal-fired power generation, mills run via animals which function by being pulled and rolled throw animal such as camels or donkeys. Carpentry factories which produced doors, windows, chairs and office furniture. Other factories such as leather factories, soap factories, and ice factory.

Unfortunately, all these factories did not continue after the Mutawakkilite Kingdom that ruled Yemen after the Ottoman empire 1918-1962, the materials of such factories that existed were taken to the military museum in the capital Sanaa. (Altheeb, 2009; Alaraby, 2016).

3.3 Manufacturing before the establishment of Yemen as a republic

Lacking the required electricity was the major obstacle for the growth of industry in the North Yemen before the unification of Yemen. During 1979, the first electricity power plant was implemented in Hodaidah city with a capacity of 150 kph, in 1988, their capacity increased to 400 thousand tons kph employing around 4000 workers.

The revolution of September 26th 1962 was the start for easing the establishments and development of industries whether extraction industries or processing industries. As the contribution of the industrial sector towards the country's GDP was extremely low during the sixties of the last century, where the contribution of the extraction industry accounted for 0.9% of the total GDP and around 16.4% of the total industry output. Such improvement took place during the eighties where the contribution of the extraction industries increased to become 9.5% of the country's GDP and 44.1% of the total industry output. The factors behind increase and enhancement in the role of industry in the North of Yemen was due to extraction of oil which accounted for 91% of the total extraction industry output which still implied that the role of industry in the economic growth was very low. As for the processing industries, small and medium enterprises existed where they can not be called as factories due to their small size, however, they grew and played a significant role after the revolution in the North of Yemen. The number of small and medium enterprises increased from 19 enterprises during the sixties to become 66 enterprises during 1975 and 101 enterprises during 1984. The more enhancements was observed among food processing industry and metal industry.

Similarly, in the South of Yemen, industry was basic regardless of the existence of many industrial enterprises. Except oil refining units and power supply plants, industry activities were basic and manual. However, remarkable development was realized by the industry sector in the south of Yemen during the seventies and eighties such as 65% growth in manufacturing, 25% growth in the number of workers in the industry sector, and 199% growth in employee compensations. Industrial establishment were observed in the south of Yemen in all sectors – the public, private and the cooperative sector (Abdulhabeeb, 1985; CSO, 1989; Alawadhi, 2003).

3.4 Defining small and medium enterprises

Defining Small and medium enterprises in Yemen has three perspectives as per Social Fund for Development (SFD), Ministry of Industry and Trade (MIT), and Central Statistical Organization (CSO).

The first perspective as per Social Funds for Development which is one of the organizations dedicated for supporting and empowering SMEs, the same perspective was also adopted in the National Strategy for Micro and Small Enterprises Development. SFD classifies SMEs based on the number of employees, employees range from five to fifty employees among small and medium enterprises, where small enterprises are the enterprises who employ what ranges between five and ten employees/workers, micro enterprises are the one employing what ranges between one and four employees/workers, while medium enterprises are enterprises that their full-time employees/workers are not more than 50 employees/workers (Aliriani, 2013; PSDP, 2011; Alnedhari, 2009).

The second perspective is adopted by the Ministry of Industry and Trade (MIT). It defines micro enterprises as the one who employ four or less employees and with an investment capital that is less than one million Yemeni Rials. It also defines small enterprises as the enterprises that employ up to ten employees/workers and investing an amount that is not more than two million Yemen Rial (YR) which is equal to 5000 USD (MIT, n.d.).

The third perspective is adopted by Central Statistical Organization (CSO), which defines micro enterprises as the enterprises employing one to four employees/workers, small enterprises are the enterprises employing five to nine employees/workers, medium enterprises are the enterprises employing ten to twenty four employees/workers while large enterprises are the enterprises employing twenty five or more employees/workers (Rashid, 2007; CSO, 2005).

It can be concluded from this discussion that until now, an official definition of SMEs that classify them according to the number of employees, investments and sales returns is still absent in Yemen (Alnedhari, 2009).

Such perspectives mentioned above, are used by such organizations for the purpose of preparing their reports and reporting their progress, rather than considering such classification to be the official classification of SMEs in Yemen.

In an empirical study, entrepreneurship and enterprising activities in Yemen were compared with similar underdeveloped economies, like the Afghani, Bangladeshi, Rwandan, and the Sudanese economies. The study output has unveiled that Yemen, when compared with other economies, is the least to adopt entrepreneurial activities, adopt reforms to boost entrepreneurship in the country, and above all, to provide clear and unique classification of SMEs in the Country. The study also revealed that the government of Rwanda and Bangladesh were found to be the best in defining

and classifying SMEs as the enterprises in Rwanda are classified based on the number of employees, annual turnover, and net capital investments, while the same is adopted in Bangladesh – where enterprises are also classified based the sector as well – service and manufacturing (Saleh & Manjunath, 2021).

Taking into consideration the fact that almost all the business sectors in Yemen (95%) fall into the category of SMEs, which implies the need for a detailed and unique classification of SMEs to be adopted in Yemen; instead, as mentioned above, each official organization in Yemen adopts a different classification when reporting activities pertaining to the SMEs sector, let alone the fact that the sector of SMEs in Yemen is not supervised by a unique authority as it is in many other countries such as India – where a specific ministry is dedicated to the SMEs sector (Saleh & Manjunath, 2020a; 2020f).

3.5 Manufacturing enterprises in Yemen

Yemen lacks a proper up to date database that is dedicated for SMEs operating in the country. Therefore, characteristics relating to SMEs are challenging to obtain/describe. The last comprehensive survey conducted regarding manufacturing enterprises was in 2010. Conducting the survey was supported by the United Nations Development Program (UNDP) and GIZ (the German development agency). According to the results drawn from this survey, the number of manufacturing enterprises in 2010 was 27,796 enterprises.

3.5.1 Ownership in the manufacturing sector

Statistics show that majority of the commercial sector in Yemen operate as small and medium enterprises (SMEs) accounting for more than 95% of firms and companies falls into the category of small and medium enterprises in Yemen (World bank, 2013). Further, majority of the commercial activities in the business sector belongs to the private sector (ILO, 2019).

Similarly, when it comes to manufacturing SMEs, the private sector is dominating the ownership in Yemen, as the ownership of majority of enterprises (98.31%) is held by the private sector, and the rest is divided among other types of ownership: 0.77% belongs to the public sector, 0.49% belongs to the cooperative sector, 0.15% belongs to the private foreign sector, 0.13% belongs to joint private sector, 0.08% belong to the Waqf sector – which is concerned with property that is charitable endowment according to the Islamic law, 0.05% belongs to mixed sector, and 0.02% belongs to non-government organization, while at the same time no ownership is held by regional or international organization (CSO, 2013).

When taking the ownership percentage into consideration, the report of the comprehensive survey reveals that the ownership differs between large enterprises and SMEs. Where the majority of large enterprises (53.52%) are owned by the private sector, 30.99% are owned by the public sector, the firms and companies owned by the joint private sector and the mixed sector account for 10.57% and 3.52% respectively, while 1.4% of large manufacturing enterprises are owned by the cooperative sector and the foreign private sector with 0.70% respectively (CSO, 2013).

However, when medium sized manufacturing enterprises are concerned, it is observed that the private sector owns the majority of the medium manufacturing enterprises in Yemen accounting for 82.30%, while 9.79% are owned by the public sector, the joint private sector owns around 3.01%, the cooperative sector and the mixed sector owns around 1.69% and 1.51% respectively; the foreign private sector and the sector of non-government organizations own around 1.32%, and 0.38% of medium-sized manufacturing enterprises respectively (CSO, 2013).

In case of small manufacturing enterprises, majority (97.46%) are owned by the domestic private sector, the public sector owns around 1.39% of the small manufacturing enterprises in Yemen, and the rest which is 1.15% of small manufacturing enterprises are owned by other sectors with different portions for each sector (CSO, 2013).

In case of micro enterprises are concerned, majority of the micro manufacturing enterprises (99.09%) are owned by the private sector, while the cooperative sector owns around 0.40%, and the rest of the micro manufacturing sector (0.41%) is owned by other sectors with a small portion with each sector (CSO, 2013).

It can be observed from the results drawn from the comprehensive survey of manufacturing enterprises that the private sector dominates the ownership of the manufacturing enterprises in Yemen. However, such dominance by the private sector is among micro, small and medium manufacturing enterprises (98.3%), and not among large manufacturing enterprises which are held by the public sector, the foreign private sector and the non-government organizations. The large scale foreign private and non-government participation is found very less in the sector of micro, small and medium enterprises (CSO, 2013).

3.5.2 Spread of manufacturing enterprises in Yemen

The capital city of Sanaa'a consists of the majority of manufacturing enterprises according to the formal statistics furnished by the comprehensive survey conducted in 2010. Around 70.86% of manufacturing firms/enterprises are located in seven cities in Yemen, where Alamanah hosts the highest percentage of manufacturing enterprises (18.06%) as compared to the other cities, the second rank is held by the city of Taiz which hosts around 13.93% of manufacturing enterprises, Ibb city is ranked third in hosting manufacturing enterprises as it hosts around 12.24%. Dhamar city hosts around 8.05% of manufacturing enterprises in Yemen which makes it ranked the fourth city, Hadhramaut city is ranked fifth hosting around 7.49%, the sixth and seventh ranks are held by Hodaidah city and Sanaa city as they host around 6.88% and 4.21% respectively. Beyond the share of manufacturing enterprises host by these seven cities, the rest are distributed among the other cities with percentages less than one of the total manufacturing enterprises (CSO, 2013).

Manufacturing enterprises who are into food processing account for 43.75% of the total manufacturing enterprises, followed by metal accounting for (14.78%), the non-metallic manufacturers accounting for (11.02%), and the textile manufacturers accounting for (10.80%) and the rest of manufacturing enterprises are distributed across the industry with very low percentages (CSO, 2013).

Among large manufacturing enterprises (employing more than 50 employees), Sanaa city hosts the highest number accounting for 21.83%, Taiz city hosts the second highest number with 16.90%, followed by Hadhramaut with 14.08%, Aden is ranked fourth hosting 12.68%, Hodaidah and Ibb hosting 11.27% and 6.34% respectively, and Albaydha hosts 4.93%. It is worth mentioning here that all these

seven cities host 88% of total large manufacturing enterprises in Yemen, while large scale enterprises barely exist in cities like Ma'areb and Mahweet, there is absence of any large scale enterprises in cities like Dhamar, Hajjah, Raimah and Aljawf (CSO, 2013).

In case of medium sized manufacturing enterprises (which employ between 10 to 50 employees), Alamanah hosts the highest portion of them with 28.44% of the total medium sized manufacturing enterprises. The second highest portion is hosted by Taiz city with 15.82%, Hadhramaut with 12.05%, and Hodaidah with 10.55%. These four cities represent 66.85% of medium sized manufacturing enterprises, and the rest, i.e., 33.15%, is divided among the other cities with smaller percentages (CSO, 2013).

In case of small manufacturing enterprises, Alamanah is ranked first hosting 27.25%, followed by Taiz and Hodaidah with 12.57% each, Hadhramaut with 8.46%, and Aden with 6.31%. It is worth mentioning here that these cities host more than 75% of total small manufacturing enterprises in Yemen, while the remaining cities are found to host less than 1% each.

When it comes to hosting micro manufacturing enterprises [21,801 employing up to four employees], Alamanah is found to be the number one host in case of large, medium and small manufacturing enterprises. Alamanah hosts 15.54% of the total micro manufacturing enterprises, followed by Taiz with 14.19%, Ibb with 13.53%, Dhamar with 9.25%, Hadhramout with 7.10%, Hodaidah with 5.37%, and Sanaa with 4.85% of the total micro manufacturing enterprises in Yemen. It is worth noting that around 70% of micro manufacturing enterprises are hosted by these cities while the remaining cities host less than 1% each (CSO, 2013).

It can be observed that hosting higher number of micro, small and medium sized manufacturing enterprises is relevant to the size and population of Yemeni cities, and the opposite is relevant to the cities hosting the least number of manufacturing enterprises.

3.6 The role of small and medium manufacturing enterprises in the Yemeni economy

In this section, the literature is reviewed to present the contribution of the sector of manufacturing small and medium sector towards the economic development through the dimensions of employment, employee compensations, and value added.

3.6.1 Employment

Since the sector of small businesses sector is known for employment creation and income generation, whether it is a developed, developing or a least developed economy. Similarly, the small business sector in Yemen has been a major contributor towards employment, income generation and economic development. The table below (Table 3-1) shows statistics relating to the role that micro, small and medium manufacturing enterprises play in regards to employment.

From the table (Table 3-1), the following becomes very obvious; the increase of employment among micro, small and medium manufacturing enterprises observed between 2003 and 2017 is around 35.7%, where the employment percentage of micro enterprises in 2003 was 48.5% of the total employment of the SME sector and increased to 52.1% in 2006, 52.4% in 2009. The percentage has declined after that to become 50.3% in 2012 and 44.5% in 2015 as well as 2017 (CSO, 2003, 2006, 2009, 2012, 2015, 2017).

when evaluating the contribution of small enterprises, the rate of employment to the total sector employment was 12.7% in 2003 with a very minor increase through the following years to become 17.6% in 2006, 17.9% in 2009, 18.3% in 2012, 19.5% in 2015 and 2017. Medium enterprises are the major contributor to the employment compared with other enterprises, they contribute to the total employment of the SME sector by 38.8% in 2003, however, this employment contribution has declined to become 30.3% in 2006, 29.7% in 2009 and it began increasing again to become 31.4% in 2012, 36% in 2015 and 2017 (CSO, 2003, 2006, 2009, 2012, 2015, 2017).

This indicates a moderate level of growth in the number of employed workforce among micro, small and medium enterprises without taking into consideration the other factors that cause such increase in the size of workforce. The growth in this sector significantly has an impact on the economic development of the country in general which boosts the ability of SMEs to contribute towards the GDP of Yemen. Among micro, small and medium manufacturing enterprises, micro manufacturing enterprises have been on the top employing the highest number of workforces in Yemen, this indicates that micro manufacturing enterprises are the major contributor when it comes to employment (Table 3-1). It is worth mentioning here that when taking the total contribution across the years, micro enterprises appear to be the major contributor with the percentage of 48.8 % of the total employment across all the years compared with small Enterprises (17.8%) and medium enterprises (33.4%) (CSO, 2003, 2006, 2009, 2012, 2015, 2017).

Further, small manufacturing enterprises are found to be the least contributor to employment generation. It is worth mentioning that small manufacturing enterprises are very less in quantity when compared to medium enterprises and micro enterprises in Yemen, this describes the variance in the employment percentage between medium enterprises on one hand and micro and medium enterprises on the other (Table 3-1).

Table 3-1: Employment among SMEs in Yemen 2003 - 2017

years Enterprises	2003		2006		2009		2012		2015		2017		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	(%)
Micro	66,258	48.50% ^a	1,20,233	52.10% ^a	96,644	52.40% ^a	86,589	50.30% ^a	87,935	44.50% ^a	82,659	44.50% ^a	5,40,318	-48.80%
		12.3% ^b		22.3% ^b		17.9% ^b		16.0% ^b		16.3% ^b		15.3% ^b		
Small	17,399	12.70% ^a	40,543	17.60% ^a	32,951	17.90% ^a	31,534	18.30% ^a	38,417	19.50% ^a	36,112	19.50% ^a	1,96,956	-17.80%
		8.8% ^b		20.6% ^b		16.7% ^b		16.0% ^b		19.5% ^b		18.3% ^b		
Medium and large	53,077	38.80% ^a	69,829	30.30% ^a	54,807	29.70% ^a	54,185	31.40% ^a	71,145	36.00% ^a	66,876	36.00% ^a	3,69,919	-33.40%
		14.3% ^b		18.9% ^b		14.8% ^b		14.6% ^b		19.2% ^b		18.1% ^b		
Total	1,36,734	-12.30%	2,30,605	-20.80%	1,84,402	-16.70%	1,72,308	-15.60%	1,97,497	-17.80%	1,85,647	-16.80%	11,07,193	100.00%

Source: (CSO, 2003, 2006, 2009, 2012, 2015, 2017). Note: a) Percentages are calculated based on the total of each year. b) percentages in paratheses are calculated to the total of all category across all years.

Table 3-2: Employment compensation among SMEs in Yemen 2003 – 2017

years Enterprises	2003		2006		2009		2012		2015		2017		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	(%)
Micro	2,744	12.7% ^a	10,689	30.6% ^a	15,420	33.7% ^a	15,680	27.0% ^a	12,540	21.3% ^a	11,787	21.3% ^a	68,860	25.07%
		4.0% ^b		15.5% ^b		22.4% ^b		22.8% ^b		18.2% ^b		17.1% ^b		
Small	1,960	9.0% ^a	4,935	14.1% ^a	7,775	17.0% ^a	8,855	15.3% ^a	8,507	14.4% ^a	7,997	14.4% ^a	40,029	14.57%
		4.9% ^b		12.3% ^b		19.4% ^b		22.1% ^b		21.3% ^b		20.0% ^b		
Medium and large	16,984	78.3% ^a	19,329	55.3% ^a	22,562	49.3% ^a	33,435	57.7% ^a	37,867	64.3% ^a	35,595	64.3% ^a	1,65,772	60.36%
		10.2% ^b		11.7% ^b		13.6% ^b		20.2% ^b		22.8% ^b		21.5% ^b		
Total	21,688	7.90%	34,953	12.73%	45,757	16.66%	57,970	21.11%	58,914	21.45%	55,379	20.16%	2,74,661	100.00%

Source: (CSO, 2003, 2006, 2009, 2012, 2015, 2017) Note: a) Percentages are calculated based on the total of each year. b) percentages in paratheses are calculated to the total of all category across all years.

3.6.2 Employee compensations

Since employment has grown among micro, small and medium manufacturing enterprises, similarly, the employment compensations have also increased during the last two decades with total compensation of employment among manufacturing enterprises during 2003 was 21,688 million Yemeni Rial has seen a major growth and stood at 55,379 million Yemeni Rials during 2017.

Similar to the variance in employment, the compensation of employees has also been observed to be higher among medium manufacturing enterprises, and the least employee compensation is observed among small enterprises (Table 3-2). As observed in the table, employee compensation of micro enterprises was 12.7% to the total employment compensation of the SME sector during 2003 and 4% of the total contribution of micro enterprises across the years. This percentage has increased significantly to become 30.6% of the total sector contribution and 15.5% of the total contribution of the micro enterprises across the years.

small Enterprises are found to be the least contributing when it comes to employee compensation where it was 9% of the total sector contribution and 4.9% of the total contribution of small enterprises across the years. This percentage has witnessed improvement through the years to become 14.4% of the total contribution of the sector and 20% of the total contribution of small enterprises across the years (CSO, 2003, 2006, 2009, 2012, 2015, 2017).

As for medium and large enterprises, their contribution to the employee compensation of the SME sector was 78.3% in 2003 and became 64.3% percent in 2017 while their share of the total contribution of medium enterprises across the years was 10.2% in 2003 and became 21.5% in 2017.

However, Central Statistics Organization in Yemen includes large enterprises with medium enterprises, for the reason that large enterprises are very limited. This is supported by the statement of the World Bank that more than 95% of the business sector in Yemen falls into the category of small and medium enterprises (CSO, 2003, 2006, 2009, 2012, 2015, 2017).

3.6.3 Value added

When considering the value added among micro, small and medium manufacturing enterprises in Yemen, a remarkable growth has been observed since 2003, from mere 130,183 million Yemeni Rials in 2003 to 551,955 million Yemeni Rials by 2017. When evaluating is the rate of the value added by micro enterprises, the table shows that their share of the total sector contribution was 20.5% during 2003 and became 31.5% in 2017. While their percentage of the total contribution of micro enterprises across the years was 3% in 2003 and became 19.5% in 2017 (CSO, 2003, 2006, 2009, 2012, 2015, 2017).

As for small enterprises, their share was 6.6 % of the total contribution of the sector during 2003 and became 7.5% in 2017, while their share of the total contribution of small enterprises across the years was 4.2 % in 2003 and became 20.4% in 2017.

When evaluating the contribution of medium enterprises, the table shows that they contributed to the total value add of the sector by 72.9% in 2003 and changed to 61% in 2017, while their contribution to the total value add of medium enterprises across the years was 6.6% in 2003 and changed to 23.5% in 2017 (CSO, 2003, 2006, 2009, 2012, 2015, 2017).

Similar to employment compensation, medium and large enterprises have achieved the highest value added compared with micro and small manufacturing enterprises (Table 3-3).

Table 3-3: Value added among manufacturing SMEs in Yemen 2003 - 2017

Enterprises/year S	2003		2006		2009		2012		2015		2017		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	(%)
Micro	26,667	20.5% ^a	80,854	32.5% ^a	2,22,349	48.8% ^a	2,12,823	36.6% ^a	1,77,092	31.5% ^a	1,73,831	31.5% ^a	8,93,616	35.33%
		3.0% ^b		9.0% ^b		24.9% ^b		23.8% ^b		19.8% ^b		19.5% ^b		
Small	8,560	6.6% ^a	24,378	9.8% ^a	31,608	6.9% ^a	54,053	9.3% ^a	42,075	7.5% ^a	41,300	7.5% ^a	2,01,974	7.98%
		4.2% ^b		12.1% ^b		15.6% ^b		26.8% ^b		20.8% ^b		20.4% ^b		
Medium and large	94,956	72.9% ^a	1,43,595	57.7% ^a	2,01,374	44.2% ^a	3,14,010	54.1% ^a	3,43,142	61.0% ^a	3,36,824	61.0% ^a	14,33,901	56.69%
		6.6% ^b		10.0% ^b		14.0% ^b		21.9% ^b		23.9% ^b		23.5% ^b		
Total	1,30,183	5.15%	2,48,827	9.84%	4,55,331	18.00%	5,80,886	22.96%	5,62,309	22.23%	5,51,955	21.82%	25,29,491	100.00%

Source: (CSO, 2003, 2006, 2009, 2012, 2015, 2017) Note: a) Percentages are calculated based on the total of each year. b) percentages in paratheses are calculated to the total of all category

across all years

3.7 Challenges and obstacles encountered by the manufacturing sector in Yemen

The challenges faced by firms and companies in manufacturing sector in Yemen can be grouped into two categories, the first category pertaining to the challenges and obstacles that the firms and companies can solve through development and operations, through specific strategies and plans; the second relating to the challenges and obstacles that firms and companies are unable to encounter them by themselves and hence demands the intervention of the government so as to ensure conducive business environment for the SMEs sector to grow, expand and contribute towards inclusive development and economic welfare is extended.

Small and medium enterprises in Yemen function in an instable environment, due to the current political and economic unrest in the country (Saleh and Manjunath, 2020f) and more particularly the impact accompanied the Covid-19 pandemic (Saleh and Manjunath, 2020a), this result in them facing a plethora of challenges which are divided into historical and temporary (Saleh and Manjunath, 2020b). However, being an underdeveloped economy with majority of participants in the business sector being SMEs (World Bank, 2013), in Yemen, play a significant role to creating employment, generating income and GDP improvement; yet, their performance is hindered by many factors such as, finance, marketing, political, legal, and managerial capacity (Saleh, Manjunath and Qaied, 2021). Barriers hold SMEs in Yemen from digitalizing their business process and moving towards digitalization (Saleh and Manjunath, 2020c; 2021c) requires business to overcome such barriers by supplementing such initiative with essential resources and infrastructure.

The following table (Table 3-4) presents the studies that have investigated the manufacturing sector and its challenges:

Table 3-4: Relevant studies that have investigated the challenges of the SME sector

Source	Types of hinderances	Recommendations
YIA, (2000)	<ul style="list-style-type: none"> 1 - Dominance of the small sized manufacturing enterprises in the manufacturing sector. 2 - Weak infrastructure in which the manufacturing enterprises function. 3 - Weak managerial process adopted by manufacturing enterprises. 4 - Structural obstacles between the manufacturing sector and other sectors. 5 - Higher cost of production. 	<ul style="list-style-type: none"> 1 - Establishing an institute for industrial research and development. 2 - Complementarity between the manufacturing sector and other sectors on one hand, and between the government and the private sector on the other hand. 3 - reforms to be adopted by the government with regard to customs, investments, finance and power supply.
Almarhadhy, (2002)	<ul style="list-style-type: none"> 1 - Weak infrastructure. 2 - Weak management. 3 - Higher taxes. 4 - Lacking marketing orientation. 5 - Official and unofficial imports of foreign products. 6 - Failure to acquire/create customer loyalty. 7 - Weak enforcement of the law. 	<ul style="list-style-type: none"> 1 - Complementarity between the private sector and government policies. 2 - Orienting the focus of policies to serve economic development/needs. 3 - Orienting the focus of manufacturing enterprises on the domestic environment first. 4 - The government is required to implement proper development strategies specially for the SMEs.
HSAG, (2002)	<ul style="list-style-type: none"> 1 - High taxes and customs on raw materials imports. 2 - Market legal and illegal dumping with foreign products. 3 - Lacking skilful and qualified workforce. 4 - Slow growth in the economy. 5 - Weak Infrastructure. 6 - Lacking proper strategies for industries operating at national level. 	<ul style="list-style-type: none"> 1 - Serious plans for joining WHO with active involvement of the private sector. 2 - Complementarity between the public and private sectors. 3 - Adopting reforms among industrial organizations.

Source	Types of hinderances	Recommendations
Almarhadhy, (2000)	<ul style="list-style-type: none"> 1 - Lower loyalty of customers to local products. 2 - Low purchasing power. 3 - The absence of the necessary skills needed among man power. 4 - Weak infrastructure. 5 - Intense competition. 6 - Increased idle capacity. 	<ul style="list-style-type: none"> 1 - Applying strategies to lead the cost in industrial organizations. 2 - Employing and devoting efforts to satisfy customers' needs. 3 - Adopting strategic clarity with respect to goals and plans.
Jumaan, (2000)	<ul style="list-style-type: none"> 1 - Rapid transformations towards market mechanisms. 2 - strong competition. 3 - Economic unions' dominance. 4 - Keeping pace with advancements in technology and information systems. 	<ul style="list-style-type: none"> 1 - Excellent leadership behaviour is a requirement. 2 - Adjusting along with the environmental changes. 3 - Developing the methodology for of designing and implementing strategies.
Alshami, (2000)	<ul style="list-style-type: none"> 1 - Lacking the clarity in towards strategic vision. 2 - Mixing ownership with management. 3 - Absence of proper decision making practices. 4 - The increase in taxes, customs and the idle capacity. 4 - Lack of development among human resources. 5 - Scarcity of financial resources. 6 - Less concentration on the quality. 	<ul style="list-style-type: none"> 1 - Upgrading the administrative practices adopted among industrial organizations. 2 - Focusing more on managerially qualified leadership. 3 - Adopting information systems. 4 - Focusing more on the development of human resources in an organization.
Alhawery, (2002)	<ul style="list-style-type: none"> 1 - Weak infrastructure. 2 - Legal and administrative challenges. 3 - Unequal competition between domestic and foreign products. 4 - Lacking proper organizational structure employed in the private sector. 	<ul style="list-style-type: none"> 1 - Allowing the private sector to expand with respect to investments and activities.

Source	Types of hinderances	Recommendations
(Alsanafi, 2000)	1 - Weak infrastructure. 2 - Gaps between agricultural and industrial sectors. 3 - Corruption and administrative dropout. 4 - Higher taxes. 5 - Lacking proper strategic visions. 6 - Unequal competition activities. 7 - The absence of governmental protection motives.	-
Almutawakkel, (2000)	1 - Low government support. 2 - Relying mainly on importing raw materials. 3 - Lacking the effectiveness of achieving goals in the industry sector. 4 - Lack of qualified workforce. 5 - High idle capacity. 6 - Lacking knowledge and experience with respect to running organizations 7 - Higher cost on obtaining financial resources.	-
Othamn, (2000)	1 - Low qualification among human resources. 2 - Low qualification among administrative leaders. 3 - Legal and illegal imports of foreign products. 4 - Higher cost of financing their activities.	-
Comprehensive Industrial Survey, (1996)	1 - Weak infrastructure. 2 - Higher cost on supplies (raw material, energy, transport). 3 - Higher taxes. 4 - Intense competition. 5 - Multiple supervising authorities over industrial organizations.	-

Source	Types of hinderances	Recommendations
Saleh & Manjunath, (2020)	<p>The significant financial challenges impacting the performance of SMEs in Yemen are:</p> <ol style="list-style-type: none"> 1 - Laws and regulations 2 - Collaterals for obtaining loans 3 - Lack of capital. 4 - Sticking to the budget 	<p>Activating and supporting the role of microfinance institutions in supporting the small business sector by facilitating their access to the required funds.</p> <p>Further official support and incentives from the government towards the SMEs sector such as lowering the tax rate and granting opportunities to access funds.</p>
Saleh & (Manjunath, 2020e)	<p>The significant managerial challenges that influence the performance of small and medium enterprises in Yemen are:</p> <ol style="list-style-type: none"> 1 - Lacking skilled workforce 2 - Administrative management/decisions. 3 - Training workers and employees. 4 - Lack of networks. 5 – Enterprise’s records control 	<p>Providing training to owners and managers of SMEs with respect to running day-to-day activities.</p> <p>Further attention to be paid towards the education system and its outputs.</p> <p>Creating strategies that lead to harmonizing the educational institutions outcome with the needs and requirements of the private sector.</p>
Saleh, et al., (2021)	<p>The study investigates many challenges and their impact on the performance of SMEs, the challenges categorized into Financial, infrastructure, legal, temporary, management, and marketing challenges. The study concludes that financial challenges, infrastructure challenges, and marketing challenges are not found significantly influential, while the rest - legal, temporary, and management challenges, are found significantly influential on the performance of SMEs in Yemen.</p>	<p>Spreading awareness about the obstacles hindering the performance of SMEs so owners and managers can take the precautions to reduce their impact.</p> <p>Cooperating with international development partners to facilitate creating a conducive business environment for SMEs to function grow and expand.</p>

Resource: Literature review.

3.7.1 Classifying the challenges faced by SMEs based on their approach to resolve

Eggers & Macmillan, (2013) described Government and their support to solve the problems like “the giving tree” in the children book of Shel Silverstein; as the government is always asked to solve the problems that occur or are faced in the health sector, the transportation sector or any other sector. However, this is very common in developed countries where government cover many aspects of support needed by the public. But when it comes to developing and more in particular, the least developed countries, the public sector is much different compared to developed countries. This implies that underdeveloped economies would need decades of development in their GDP to be in a position to support and provide public services.

Hence, in order to withstand the intense challenges, firms and companies in underdeveloped economies are obliged to initiate necessary efforts to solve/withstand the challenges through appropriate plans and strategies adopted by such firms and companies. This raises questions regarding the nature of challenges that the firms and companies are supposed to solve and which among them are to be considered as a duty of the government.

This section of the chapter elaborates the challenges that can be solved or tackled by the enterprises or the ones which drawn the need for government interventions.

3.7.1.1 Obstacles and challenges that can be solved by firms and companies:

These challenges and obstacles can be conquered by the manufacturing firms/enterprises themselves by applying directed strategies and dedicate required resources for the same.

3.7.1.1.1 The absence of strategic vision:

There is more emphasis on the role of mission and vision of firms/organization in developing and maintaining a sustainable business performance (Duygulu, et al, 2016). The ACCA report (ACCA, 2018) opined that for an organization to be well built, the internal key components have to be taken care of such as vision, strategy and people; and external key components such as – being alert towards the environment and search for cues, maintaining the relationship with stakeholders, and accepting/adapting to the changes promptly. Lacking such key components is considered as a major reason why stellar ideas are found difficult to transform into star companies.

Wang, et al., (2007) stated that many enterprises are not considered “entrepreneurial enterprises”, as their managers/owners are satisfied with where they are and what they have with respect to enterprising and hence they do not aim to grow and hunt growth opportunity, this in turn leads to the strategic planning which has been neglected in their enterprises. However, ownership motivations act as key driver to encourage seeking growth opportunities and hence employ strategic planning.

3.7.1.1.2 The size of the manufacturing enterprises:

The size of enterprises can not be considered as an obstacle to the development of SMEs sector. However, considering the fact that more than 95% of the business sectors fall in SMEs category, and among them, majority of the manufacturing SMEs in Yemen are found to be small manufacturing enterprises (World Bank, 2013). Regardless of the role played by micro and small enterprises in the economy, the expansion of the sector is still limited as the number of large enterprises being relatively – very small. However, when the small size of enterprises dominates the SMEs sector in its count, informal sectoral practices become more common, especially where the micro enterprises are more common than the medium or large enterprises.

One of the solution to such an obstacle that can be considered as appropriate strategic choice where it contributes to the growth of SMEs sector. Merge and acquisition among manufacturing SMEs, especially the ones with potential for growth and expansion. Merging manufacturing entities would transform them into stronger and more capable manufacturing enterprise.

3.7.1.1.3 Strong competition:

Two possible types of competition that manufacturing SMEs in Yemen would encounter

- First is the competition from other manufacturer operating in traditional business environment.
- The other is the competition that the manufacturers themselves are not able to encounter which is market dumping with low priced products.

Imports are a primary source to meet the local markets needs for products and commodities – which is dominated by the private sector (World Bank, 2018). Due to importing, raw materials, products prices are relatively higher when compared to foreign products (Algomhoriah, 2008). This has infused competition from foreign imported products into the local market.

Weak enforcement of standards (Aljazeeraah, 2010), lack of upgradation to the local products, absence of an official policy dedicated towards protecting the manufacturing sector, the weakness of the local products to compete with foreign products, market dumping with less priced imported products, and the limited efforts towards attracting customers (Algomhoriah, 2008) have all contributed to the tendency of customers to prefer the low-priced foreign products. To address these obstacles, strategies need to be planned and designed mainly to boost the output in the environment where business operates. This can be achieved by identifying and analyzing strengths, weaknesses, threats and opportunities.

3.7.1.1.4 Incompetent management:

When considering the management discipline, Yemen as a country has been ruled dividedly by many, such as, the Ottomans, Kingdom of Mutawakkilite, royal families and other dynasties. Two republics were established during the 1960s in North and South Yemen. Uniting these two republics in 1990 involved merging two different administrative systems into one which created administrative gaps and exposed in the new administrative system to many weaknesses. Let alone, the nature of the Yemeni society is tribal and traditional or described as a primitive society (Caton, 2013).

Further, the nature of political and economic instability that Yemen keeps to witness (Aboueldahab, 2019), along with lack of development achieved from social and economic perspectives, managerial aspects has not been up to the mark, considering running business and making remarkable decisions.

Small and medium enterprises are characterized by unstructured managerial cycles, which implies that, the managerial challenges would easily hamper the business performance of these enterprises. Moreover, overcoming managerial issues that undoubtedly affect the performance, requires specific focus more than other factors such as infrastructure factors or lack of access to information system. Overcoming the managerial challenges can help enterprises better cope with other challenges, especially by developing the enterprising skills and entrepreneurial perception among the youth (Saleh and Manjunath, 2020d; 2021a), and establishing supervising authority for SMEs so as to provide them with training, directions, support and consultancy (Saleh and Manjunath, 2021b).

3.7.1.1.5 Total reliance on imports of manufacturing raw materials

Yemen being one of the least developed countries, the manufacturing orientation is lagging behind due to lack of essential resources, necessitating the need to increasing not only the foreign products but also the raw materials used in processing and manufacturing activities.

The total reliance on imported raw materials contributes towards negative balance of trade, as coupled by reduced exports. During the last two decades, exports in Yemen have witnessed a tremendous decline while imports has witnessed the opposite conditions. During 2003, exports were greater than the imports, exports being 31.45% of GDP as against imports of 30.96% of GDP. However, exports

declined during 2010 to 21.48% of GDP as against the imports of 30.87% of GDP. Further, during the current political and economic instability, exports have worsened during 2017, which has been 0.53% of GDP as against imports accounting at 19% of GDP (Table 3-5) (CSO, 2010; 2003; 2017).

Table 3-5: Export and imports 2003 - 2017 (percentage of GDP)

Year	Imports	Exports
2003	30.96	31.45
2010	30.87	21.48
2017	19.00	0.53

Source: CSO, (2010; 2003; 2017)

The reliance on imports by the manufacturing and processing has led to increased production cost affecting the pricing of products which ignites and intensifies the competition between local products against foreign products; contrarily the favourability of customers towards foreign products due to their low and affordable cost/price, has been a phenomena that impacts the manufacturing sector in developing economies; hence demanding extra efforts from the government to protect the local manufacturing sector, so it can grow, expand and contribute towards the economic development in the country.

3.7.1.1.6 Increase in turnover, training and developing cost of staff:

Information/knowledge infrastructure is crucial for upgrading the business process among SMEs (Robertson, 2003). It is very challenging for SMEs to train and develop their human resources; hence, such cost is way lower than the large enterprises (OECD, 2010).

Around 70% of the Yemeni workforce work for unorganized labour markets in informal sector (World Bank. 2010), where service sector are found employing

around 55.6%, while agriculture sector employs around 29.2%, the trade sector and industry employ around 22.7% and 14.5% respectively; and the public administration employ 12.7% of manpower (ILO, 2015).

The inexperience, lack of skills, and training programs impede the tendency to expand small businesses in the Arab World, SMEs employ majority (60%) of the workforce according to reports from the World Bank and the United Nations (Aljazeera, 2010). Small enterprises employ 47.5% of workforce in the USA (U.S. Small Business Administration, 2018), 66.8% in The European Union (Kraemer-Eis, et al., 2017), 40% of India's workforce (Malini, 2013), however, it differs in the context of Yemen, as lacking evidence with respect to the contribution of SMEs to economic development, make the Yemeni SMEs sector appear as an informal sector (Alhaddad, 2010). Only a small section of the Yemeni workforce (7.9%) are undergraduates, and the majority (68.6%) possess primary education, and 23% are found to possess secondary education (ILO, 2015).

According to the United Nations, the young Yemeni workforce lack the necessary skills that enable them to succeed in achieving entrepreneurial undertakings (UNDP, 2011). SMEs report inadequately educated workforce, as one of the major obstacles that hinder their performance, in addition to, high rate of turnover among employees and staff which makes the enterprises reluctant to invest on training programs for employees (Al-Maqaleh, 2012). Yemen lags behind in developing human resources according to the Human Development Index and is categorized as “very low human development” (UNDP, 2013; 2018), which has further worsened after the violent conflict in the country (UNDP, 2013). This has hindered the development progress along with threatening human security, and would take few years, if not decades to redeem the pre-conflict conditions (UNDP, 2018).

3.7.1.2 Challenges and obstacles that can be effectively solved by the government:

Solving these challenges is considered as a duty of the government, as one of the main duties of any government is to provide a conducive business environment for the commercial/manufacturing sector to develop and thereby boost the economic growth and GDP, thereby contribute to the economic welfare.

3.7.1.2.1 Market dumping with foreign products:

The lack of government role coupled with the national products being of high cost and low quality, has contributed to the increase of market dumping activities in Yemen especially in recent years has impacted the local industry in meeting all the local demands comparing with imported products (Aljazeera, 2010; Alhimyari, 2014; Althawrah, 2013).

The weakness of marketing policies and absence of appropriate regulation with regards to having national markets open for foreign products has hampered the capabilities of national products to survive the competition with imported and low-priced products (Algomhariah, 2008; Alaraby, 2017; Aljazeera, 2010), and having less funds - as most of the banking sector credit goes to financing the state budget deficit through treasury bills (Alaraby, 2014).

3.7.1.2.2 Taxes and customs:

The tax system in Yemen provides incentives for large investors, and for small and medium enterprises, as it is reeling from an ineffective structure and management that is considered to be of less efficiency, this has resulted in reduced

government revenues, expansion of informal activities, and increased rate of tax evasion/corruption.

The tax system in Yemen differs among sectors and organization, and further it is also true that the tax system is unjust; as the reforms attempt has been a very slow process with focus only on the general sales tax policies.

In this regard, the SMEs, who lack the strength to grow, are bearing a lot of unbearable taxes than their counterparts i.e. the large organization who can receive incentives or tax exemptions from the government.

The Rwandan economy can be taken as an example, who provide tax incentives to small and medium enterprises. Rwanda, the country that was hit by a ‘genocide in 1994’ (which killed around million people), has followed specific strategies in development, such strategies include granting tax incentives to SMEs. Such incentives include granting tax holidays - that extends up to five and seven years, zero preferential corporate income tax rate and accelerated depreciation of 50% - relating to assets possessed (whether new or used) (Twesige, et al., 2020).

3.7.1.2.3 Multiple supervising authorities:

The regulating policies and programs of SMEs are supposed to be under the responsibility of a specific Ministry dedicated to supervise and support the SME sector as a key contributor to economic development (UNCTAD, 2001). In case where the policies are distributed, it becomes difficult to reach an consensual agreement among the government departments like, finance authority, local authorities and other authorities concerning the plans or concessions proposed by the small business representatives; which hampers the implementation of SME policies and programs comprehensively (UNCTAD, 2001).

Yemen lacks such supervising authority for the SME sector, which has led to lacking effective support towards the development of SMEs sector. However, one administrative wing in the ‘Ministry of Industry and Trade’ is dedicated to supervise manufacturing small and medium enterprises. This administrative system classifies the enterprises based on the number of employees through a Regulation in 2009 (Al-Attas, 2017).

Social Fund for Development (SFD), an internationally supported institution, is dedicated to support Small and medium Enterprises, and initiate the development efforts in the country, with an objective to alleviate poverty - especially in the rural areas of the country (Al-Iryani, et al. 2013; 2015), thereby reduce the vulnerable status of the poor in rural areas as well as the individuals seeking opportunities to utilize and generate income. These initiatives empower them towards achieving economic growth (SFD, 2017).

Another supervisory department was established by SFD during 2005 which is Small and Micro Enterprise Promotion Service (SMEPS) that aim to support the processes and activities of generating income and creating jobs in the society, which can minimize the effect of the political instability in the country (World Bank. 2012; SMEPS, 2016; Ghanem, 2018).

3.7.1.2.4 Weak infrastructure:

Lacking proper and encouraging infrastructure in Yemen is severely hampering the performance of SMEs. There are few key features that are crucial for infrastructure, yet they are not sufficiently available - they include broadband, transportation roads, electricity, and a regulatory environment. Hence, lacking such infrastructure discourages business performance and hampers growth and

development (Kelly, 2016; Obokoh & Goldman, 2016). Research indicates that the Yemeni infrastructure with respect to small and medium enterprises is poor and underdeveloped (World Bank, 2000; Igmene. 2009; General Investment Authority, 2006).

Access to basic services that are supposed to prepare a conducive business environment in Yemen is very challenging, such basic services include; electricity and water supply, transportation, and security (Nicaragua, 2019). In an empirical study, SMEs in Yemen have expressed that infrastructure factors significantly influence and impact their business performance (Saleh, et al, 2021).

3.7.1.2.5 Absence of a strategic vision towards the manufacturing sector:

When Yemen is compared with its neighbouring economies, it can be clearly observed that these economies have adopted specific strategies to protect, encourage and support the is manufacturing sectors.

Some of the strategic activities that have been initiated to support and protection of the manufacturing sector include: prevention of smuggling, provision to protect enterprises in many aspects, preventing imports from countries other than the country of origin of essential products, preventing dealing with commodities where their source is anonymous, adopting the “Made in” motto – “Made in Yemen”, and other activities that can lead to strengthening and supporting the manufacturing sector.

When Yemen is compared with its neighbouring countries with respect to the activities mentioned above, it is observed that Yemen is lagging behind in

implementing such practices that mainly aim to support and strengthen the manufacturing sector.

3.7.1.2.6 Lack of loyalty towards domestic industries:

HSAG, (2002) stated that the taxes imposed on the small and medium manufacturing enterprises worsen their ability to compete with foreign products which penetrate into the local markets. The variation of taxes on many activities acts as another obstacle, as these taxes levied are unbearable, according to the small business capabilities. The local processing enterprises to get their products from the local market, raw material tax is paid up to 15%, 35% tax is imposed on the revenues, 16% tax is imposed on salaries, 15% tax is imposed on insurance, 10% tax is imposed on miscellaneous incomes, and 2.5% is imposed as Zakah – which is an Islamic expenditure on the income of individuals and mortgage tax.

When compared with the status of the foreign products, and how they are encouraged and supported by their respective governments, the difference in the capability of the product to compete is answered both in the local market as well as where they compete in the international market.

3.7.1.2.7 Lack of effectiveness in enforcement of law:

When considering the law enforcement in Yemen, it is observed that traditional and tribal governance is commonly adopted, due to the weak and limited interventions of the government during the 1990, after the unification of Yemen and merging two administrative systems (Al-Dawsari, 2012).

The Yemeni government issued a specific law for microfinance during 2009, to regulate the activities and undertakings of microfinance institutions. However, no

Act is dedicated to small and medium enterprises, though majority of the business sector in Yemen fall into this category (Alnedhari, 2009).

Small and medium enterprises consider the government policies as one of the key challenges impacting their growth (Musid, 2013); further, providing collateral to assure the repayment of their loans is another major hindrance to access financial resources (Musid, 2013; Althawrah, 2013).

The weakness in rule of law has been a major hindrance to implement the regulatory reforms in Yemen; this is very much evident as Yemen being in the tail of countries worldwide with respect to the ranks with a low score of doing business indicators such as – ease of getting credit, protecting investors, and paying taxes; all of them due to weakness of the law enforcement (World Bank, 2015).

There is a huge impact of tribes and tribal governance in law enforcement in Yemen, which is considered an impediment to the opportunities for development in Yemen, since the weakness can not be attributed to the absence of the laws but to their effective and regulatory enforcement (Al-Dawsari, 2012; World Bank, 2015).

The weakness in enforcement of laws and regulation being due to lacking independence of the judiciary system in the country and the impact of centralism on its independence, as the government interventions keeps hampering the judicial system (World Bank, 2015). Friends of Yemen, which is an coalition of international organizations in 39 countries cochaired by United Kingdom, the Kingdom of Saudi Arabia and the Republic of Yemen, in their report in 2010 stated that structural weaknesses in the justice, security sectors as well as the rule of law contribute to the corruption vulnerabilities, such vulnerabilities include infrastructure that is poor and unreliable, insufficient salaries, weak procedures and

enforcement due to lack of sufficient incentives and knowledge, extreme centralism and institutional opacity (Friends of Yemen, 2010).⁴

3.8 The impact of the recent political and economic instability on the performance and activities of the SME sector

The economic and political instability has been significantly influencing the enterprising activities in the business environment of Yemen. During 2019, Yemen was ranked as the 116th among 117 countries in the Global Hunger Index with a score of 45.9 (Grebmer, et. al., 2019), the 187th with respect to the ease of doing business (World Bank, 2019a), and was ranked as the 177th country among 189 countries worldwide with respect to Human Development Index with a score of 0.528 putting it in the category of “Low Human Development” (UNDP, 2019).

3.8.1 Business Closure

There is a plethora of businesses that had shut down their operations during the recent political chaotic changes and unrest in Yemen (since 2011). It is estimated that around 26% of SMEs were closed due to the currently active war in the country (World Bank, 2019; UNDP & SMEPS, 2015). Around 19% of business run by male entrepreneurs were closed and 42% run by women entrepreneurs have been closed (UNDP & SMEPS, 2015). During the violent conflict and the recent political and economic instability in Yemen, Small and medium enterprises have experienced physical loss and damages. The loss includes loss of productive assets being

⁴ Friends of Yemen Group was established in 2011 by a group of countries supporting Yemen during the conflict, For more details, <https://www.gov.uk/government/news/friends-of-yemen-q-a>.

physically damaged, injuries to workforce and loss of life. Damages to infrastructure have left the business units with many challenges to function (ILO, 2018).

These factors raise the obvious question “who was affected to close business?”; normally those entrepreneurs with lack of resources, skills and ability/capacity to handle business processes during instability will end up closing their business. During the period of conflict in Yemen, the United Nation reported, the older entrepreneurs were more resilient towards closing business while on the other hand, younger entrepreneurs were induced more affected to close their business (UNDP & SMEPS, 2015).

Some questions yet remain unanswered with respect to, the potential training, consultation, and support would have on the percentage of young entrepreneurs, and the experienced/capable older entrepreneurs could have to function in an instable business environment.

When it comes to comparing business unites closed down among sectors during the current conflict/the political unrest in Yemen, the service sector is found to be the most affected being a predominant employer with workforce of 55.6% (ILO, 2016). Around 35% of entrepreneurs have closed their service operations, the manufacturing sector affected with 29% of enterprises being closed down to the political unrest, the trading sector being the least affected with closure of 20% of enterprises (UNDP & SMEPS, 2015).

The size of the enterprises plays a key factor in enterprising activities and business process being affected during political instability. The large enterprises have been successful in showing more resilience during the recent political conflict and economic instability in Yemen (UNDP & SMEPS, 2015; ILO, 2018), this could be true due to broader access to resources or better experience of entrepreneurs to

handle such scenarios. Business closing was more common among medium enterprises with 35% while it was the least with large enterprises accounting to 17% (UNDP & SMEPS, 2015).

3.8.2 Loss of customer base

During the conflict, enterprises lost their customer base which in – return has affected their survival (ILO, 2018). The service sector is reported to be the most affected who have lost their customer base accounting to 75%. The trading sector was almost similarly affected who have lost 73% of their customers. The manufacturing sector during this period have lost 69% of their customers (UNDP & SMEPS, 2015). This could be one of the major factors behind escalated cost leading to closure of business, reduced customer base along with lack of access to essential electricity were reported as major constraints by surviving enterprises during the political instability (World Bank, 2019). Considering the enterprises’ size, larger enterprises have shown better resilience towards the loss in customer base, while MSMEs were largely affected by the loss of customer base almost to a similar extent (UNDP & SMEPS, 2015).

3.8.3 Workers lay off

The workforce has not been in isolation from the effect of the political and economic instability in Yemen. Large group of workers got laid off due to the decline in revenues affected by the political instability, and closure of business unites employing them.

The population of Yemen is very young with more than 40% aged 14 years or less, 3/4th of the population living in rural areas. Educational level among adults and

women is very low and hence, they do not have many opportunities for employment in the formal labour market (ILO, 2015). The effect of the workforce layoff is very severe on individuals, and the substantial layoffs among SMEs in the country have also led to the hemorrhage of the private sector (Cordesman, 2017).

As the service sector was the most affected by closure, it was also the sector which laid off most of their workers/employees accounting at 62% (UNDP & SMEPS, 2015), workforce in sectors like agriculture, industry and construction were also affected (ILO, 2016). Followed by the trading sector with a layoff of 43%, the least being the manufacturing sector accounting at 41% (UNDP & SMEPS, 2015).

Taking the size of enterprises into consideration, small and medium enterprises were the most to lay off their workforce accounting to 70% and 71% where small enterprises laid off 50% and medium enterprises laid off 42.5% of their workforce (UNDP & SMEPS, 2015). The total reduction of human capital is 60% among medium-sized enterprises and around 56% among small enterprises (ILO, 2018). Where 67% of large enterprises laid off 32% of their work force, only 38% of micro enterprises laid off 47% of their workforce (UNDP & SMEPS, 2015).

The workforce gap witnessed among large enterprises is the availability of skilled labour, which has been a major issue faced by the enterprises in Yemen. During the political instability, 17%, 23% and 33% of micro, small and medium enterprises expressed their need for skilled labour, while 58% of large enterprises expressed they lack access to skilled labour (UNDP & SMEPS, 2015).

The employment rate in Yemen has been always low especially in major cities which has further worsened due to the political and economic instability, through displacement, especially among workers working for their own account and women as well (ILO, 2016).

3.8.4 Worsening business constraints for SMEs

The political instability has maximized the effect on the other challenges as well that are faced by small and medium enterprises across the world, such as, accessing credit or financing options. As the Yemeni economy is largely a cash-based economy, this makes the banking system a key player in survival and development of the private sector. Therefore, during the political unrest enterprises had to either lay off workers or suspend their operations (Nasser, 2018).

Due to such political condition, financing option were more restricted and the cost to obtain credit had increased. Accessing credit/foreign exchange has been described as a “significant constraint” by almost half of the SMEs in Yemen (World Bank, 2019). Managing resources to maintain working capital is challenging for SMEs even though materials still exists in the market (World Bank, 2017). Around half of the enterprises in Yemen do not depend on bank loans, instead, rather enterprises rely on advance payments (15%) from their customers or taking loans from their suppliers (World Bank, 2019). The risks have multiplied for the banking sector to function during the political instability, therefore financial services have become costlier or simply not available (World Bank, 2017).

Other constraints that have worsened during the current political unrest in Yemen include cumbersome taxes and fees, lack of investment, decreased sales, the lack of a conducive business environment that encourage entrepreneurial undertakings, regulations that are discouraging and restrictive, relying too much on cash payments and exchange companies in business transactions (World Bank, 2017; 2019).

The continuance of such constraints will not only hinder the business functions of small and medium enterprises but also will affect the health of economy on a

whole, therefore, one might wonder what prospects does the economy of Yemen have to recover in reeling from the political instability that will enable small and medium enterprises to function in such environment.

Chapter Four: Contemporary Management Practices and Resurgence of manufacturing sector: An analysis

4.1 Preliminary analysis of the data

This section presents the preliminary analysis of the data, which involves preparation, exploration and organization of the data to ensure their compatibility for the data analysis essential to answer the underlying research questions and accomplish the research objectives.

4.1.1 Response rate

The possibility of generalizing the result of the study is based the response rate towards the research instrument used for data collection (Sekaran and Bougie, 2010). Where a higher response rate is required for better generalization of the results (Saunders et al., 2003), and a low response rate would lead to generalizing the result based on the sample of the study and may fail to re[resent all the characteristics of the population (Sekaran, 2002).

In terms of representing the society, manufacturing SMEs is Yemen, according to the comprehensive industrial survey, were 27,796 enterprises during 2010. When it comes to ownership, the majority of the business sector (98.31%) belong to the private sector (ILO, 2016). Investigating the spread of manufacturing SMEs unveils

that the capital city of Sanaa’ hosts the majority of manufacturing enterprises according to the formal statistics furnished by the comprehensive survey conducted in 2010. Around 70.86% of manufacturing firms/enterprises are located in seven cities in Yemen, where Alamanah hosts the highest percentage of manufacturing enterprises (18.06%) as compared to the other cities, the second rank is held by the city of Taiz which hosts around 13.93% of manufacturing enterprises, Ibb city is ranked third in hosting manufacturing enterprises as it hosts around 12.24%.

The table below (Table 4-1) shows the details of the questionnaire distributed; where 500 was the intended target; however, 448 questionnaires were distributed, out of which, 419 questionnaires were returned. This makes the response rate 95.4%, and this is considered sufficiently high to conclude and generalize the results of the study.

Table 4-1: Response rate details.

Questionnaires	Count
Questionnaire prepared	500
Questionnaire distributed	448
Questionnaire returned	419
Questionnaire complete	400
Response rate	95.40%

Source: primary data based on the number of forms distributed and returned back from respondents.

4.1.2 Demographic background

This section presents an exploration of the demographic characteristics of the sampled respondents. The demographic characteristics differ in their nature. Some characteristics are related to the manufacturing enterprises, such as the establishment year (period of existence), the number of employees and the scope of operation, while other characteristics relate to managers and owners, such as, gender, experience, and their qualification.

4.1.2.1 Characteristics of managers/owners:

The table below (Table 4-2) exhibits the percentage of respondents based on their demographic characters. Looking at gender, the majority of respondents (89.5%) are males, while the rest (10.5%) are female managers/owners. Exploring the age, the majority of respondents (44.5%) are in the age group of 41 to 50 years old, and (41.8%) of respondents are in the age group of 31 to 40 years old, while a small section of respondents (8.8%) are in the age group of less than 30 years old and a smaller section (5%) is in the age group of more than 50 years old.

Considering their positions in the enterprise, it is found that 36.7% of respondents are administrative supervisors, 36% are general managers, 15.3% are department managers/directors, and 12% are executive managers. Exploring the educational qualifications, the majority of respondents (58.3%) hold a bachelor's degree, and 27.5% hold a mini degree which represents a two-year course diploma. A small proportion of respondents (12.75%) had postgraduate qualifications, and only six respondents (1.5%) are the one possessing secondary education.

Investigating the experience of the managers, it is observed that the majority (48.3%) are the one with experience of five to ten years, 37.3% are with one to five years of experience, and the rest (which is 14.5%) of respondents are with an experience of more than ten years. It is worth mentioning that none of the respondents reported a managerial experience of less than one year.

When asked for their proportion of ownership in the enterprises, 36.5% of managers agreed that they own some of the enterprises, while 63.5% of managers only manage the enterprises without any ownership in the enterprise with which they are associated.

Table 4-2: Characteristics of managers.

Variable	Category	Frequency	%
Gender	Male	358	89.5
	Female	42	10.5
	Total	400	100
Age	Less than 30 years	35	8.8
	31 - 40 years	167	41.8
	41 - 50 years	178	44.5
	More than 50 years	20	5
	Total	400	100
Position	General manager	144	36
	Department Manager	61	15.3
	Executive manager	48	12
	Administrative supervisor	147	36.75
	Total	400	100
Qualification	Secondary Education	6	1.5
	Diploma (Mini Degree)	110	27.5
	Batchelor degree	233	58.3
	Postgraduate	51	12.75
	Total	400	100
Experience	Less than one year	0	0
	one to five years	149	37.3
	five to ten years	193	48.3
	more than ten years	58	14.5
	Total	400	100
ownership	Yes	146	36.5
	No	254	63.5
	Total	400	100

Source: primary data.

4.1.2.2 Characteristics of enterprises:

Investigating the size of enterprises through the number of employees (Table 4-3), 23.5% of enterprises are found employing more than 60 employees, and 25.8% of enterprises employ up to 60 employees. 29% of enterprises employ up to 20 employees, and 12.8% of enterprises have up to 40 employees.

Exploring their period of establishment, the majority of enterprises (45.5%) were established between 2000 and 2010, 29.2% of enterprises were established between 2011 and 2020, and the remaining sampled enterprises (25.3%) were established between 1991 and 2000.

Investigating the scope of operation of the manufacturing SMEs in Yemen, majority of manufacturing enterprises (88.5%) operate at the domestic market place, while 6.5% of the sampled enterprises operate at the national level, and only twenty enterprises (5%) are found operating in the international market.

Investigating on the area of operations/manufacturing, 30% of enterprises are into construction, packaging and others, and 28.8% of the sampled enterprises are into food processing, 27% of the sampled enterprises are into manufacturing of home appliances, and 14.3% of enterprises are into manufacturing of plastic and its allied products (Table 4-3).

Table 4-3: Characteristics of enterprises.

Variable	Category	Frequency	%
Number of Employees	Up to 20 employees	116	29
	Up to 40 employees	51	12.8
	up to 60 employees	103	25.8
	More than 60 employees	130	32.5
	Total	400	100
Establishment year	1991 - 2000	101	25.3
	2001 - 2010	182	45.5
	2011 - 2020	117	29.25
	Total	400	100
Scope of Operation	Domestic	354	88.5
	National	26	6.5
	International	20	5
	Total	400	100
Manufacturing Field	Food processing	115	28.8
	Plastic	57	14.3
	Appliances	108	27
	Construction and others	120	30
	Total	400	100

Source: primary data.

4.1.3 Data screening

Data screening is the process of exploring the data to ensure it is complete, organized and is in order. This means that missing values do not exist, and outliers

are not a problem in the dataset. During the data screening process, 19 responses were deleted on being incomplete; in some cases (around 8 responses), only one or two missing values existed where they were replaced with the most repeated response in the construct. The process of data screening involved ensuring that the data coding and data entry are done as required without the involvement of any entry errors or skipping or mistakenly repeated values.

4.1.4 Normal distribution of the data

Even though normal distribution is not a necessary requirement for running the PLS algorithms in structural equation modelling, the normal distribution is assessed by using the results of skewness and kurtosis, where the result of skewness range between -0.200 to -1.309, and the values of kurtosis are ranging from 0.999 to 2.051. This indicates that the data are not heavily skewed, which also indicates their closeness to the data being normally distributed.

4.1.5 Common method bias analysis

Bias is a serious issue in survey-based research, and common method bias is commonly associated with conducting survey-based research. The presence of such bias impacts the accuracy of responses and hence affects the result of the study (MacKenzie & Podsakoff, 2012; Kock, 2017; Jakobsen & Jensen, 2015). There are many procedures that were followed to reduce the chances of bias in the data. In this study, few procedures have been followed to avoid and reduce the impact of common method bias in the collected data, some procedures were followed before processing the data collected, and other procedures are followed after the data collection.

4.1.5.1 Procedures followed before the data collection:

The procedures that were followed for the purpose of avoiding the bias include

a) distributing a printed questionnaire rather than a link to an online questionnaire to be filled where respondents usually choose their replies without actually reading and making judgements of the statements;

b) most of the time, the questions were dictated to respondents making the session has the characteristics of a semi-interview;

c) no titles of variable were included in the questionnaire forms;

d) the questions were not in order; instead, they were shuffled without any meaningful order relating to variables.

4.1.5.2 Procedures followed after the data collection:

4.1.5.2.1 Herman's single factor:

Herman's single factor indicates that all variables should be arranged as a single latent factor, to assess the percentage of the variance explained, assessment to measure the variance explained in one latent variable. The rule of thumb is that, the total variance explained should not exceed 50%. However, the increase above 50% indicates the presence of bias in the data.

The result of applying Herman's single factor indicates that the total variance explained by the variables is 37.93%, which is less than 50%, as the bias exists in the data if the total variance explained exceeds 50%. Therefore, it can be said that the research model is free from bias according to Herman's single factor.

4.1.5.2.2 Marker Variable:

The other procedure to investigate common method bias in the data is the marker variable. It includes an extra variable which is not relevant to the other variables. The variable chosen to be included in the questionnaire is about preferring a specific colour. The respondents were asked three questions regarding their opinion about the colour blue, a blue coloured car, and blue coloured clothes. This variable is chosen to include in the model for the purpose of measuring the common method bias. The aim is to identify the difference of the research model before and after including the marker variable as an independent variable for each variable in the model.

The table below (Table 4-4) shows the estimated values of all the dependent variables. In addition, it also shows the values of R squared and adjusted R squared in both cases, the first case where variables related to the model are assessed, while in the second case, the marker variable – which is not related to the research model, is included. The rule of thumb is that there should not be a huge change in the values of both models. Huge changes in the values indicate the presence of common method bias.

As shown in the table below (Table 4-4), the changes in values of the first model (with no marker variable included) are not remarkably different from the values of the second model, where the marker variable is introduced as an independent variable for each variable in the model. This concludes that there is no serious bias detected in the data, and hence, further analysis is applied on the data.

Table 4-4: Common method Bias - Marker Variable.

Case	Data	SMEsP	OL	TDMS	ITDM
Without marker variable	R-Squared	0.605	0.482	0.158	0.366
	Adjusted R-Squared	0.599	0.481	0.155	0.365
	Decision Making Practices	0.571	0.695	0.397	0.605
	Organizational learning	-0.035	-	-	-
	Traditional Decision making	0.069	-	-	-
	Information systems in decision making	0.103	-	-	-
	Entrepreneurial competencies	0.164	-	-	-
	Willingness for further education	0.02	-	-	-
With marker variable	R-Squared	0.602	0.485	0.21	0.443
	Adjusted R-Squared	0.595	0.483	0.206	0.44
	Decision Making Practices	0.573	0.66	0.295	0.491
	Organizational learning	-0.029	.	.	.
	Traditional Decision making	0.063	.	.	.
	Information systems in decision making	0.092	.	.	.
	Entrepreneurial competencies	0.155	.	.	.
	Willingness for further education	0.014	.	.	.

Source: primary data.

Note: SMEsP = SMEs_Performance, OL = Organizational_Learning, TDMPs = Traditional_DMStyle, ITinDM = information technology in decision making

4.2 Descriptive statistics

4.2.1 Diagnosing the problem (DP)

This section presents the descriptive analysis relating to the practices of diagnosing the problem in the process of decision making among managers/owners of manufacturing SMEs in Yemen.

Table 4-5: Descriptive statistics - Diagnosing the problem.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1- I discuss with team members to know why it is a problem and why it should be solved.	F	7	21	17	41	100	120	94	5.36	1.46
	%	1.8%	5.3%	4.3%	10.3%	25.0%	30.0%	23.5%		
2-To enhance decision making, I grant the team members confidence to identify problems and propose solutions.	F	10	14	20	22	115	132	87	5.41	1.42
	%	2.5%	3.5%	5.0%	5.5%	28.8%	33.0%	21.8%		
3-We make discussions regarding identifying early symptoms about any potential problems.	F	10	18	17	37	98	144	76	5.33	1.44
	%	2.5%	4.5%	4.3%	9.3%	24.5%	36.0%	19.0%		
4-We encourage multiple ways of viewing the problems among team members.	F	14	16	17	35	116	136	66	5.24	1.46
	%	3.5%	4.0%	4.3%	8.8%	29.0%	34.0%	16.5%		
Overall (DP)									5.33	1.19

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

The above table (Table 4-5) exhibits the responses that reflect how the respondents adopt the practices of diagnosing problems while taking decisions.

Discussing the reasons why a specific phenomenon is considered as a problem requiring a decision to be made is common among owners/managers of Yemeni manufacturing SMEs (25% = somewhat agree – SWA, 30% = Agree – A, and 23.5% = Strongly Agree – SA). The same practice is not adhered to among a small proportion of the respondents as they do not feel the essential need to discuss such reasons and rather take decisions directly (4.3% = somewhat disagree – SWD, 5.3% = Disagree – D, and 1.8% = SD - Strongly Disagree). However, a small proportion of respondents also consider discussing the reasons behind the existing problem as irrelevant (10.3% = N). With a mean score of 5.36 out of 7, it indicates that it is a common practice among manufacturing SMEs that a discussion is led to why a problem is considered as a problem and why decisions are necessitated.

Providing confidence to the team members to present their opinions in regards to diagnosing the problem causing the need for a decision to be made is considered a common practice among business owners and managers in manufacturing SMEs (28.8% = SWA, 33% = A, and 21.8% = SA), on the other hand, a small proportion of sampled managers/owners disagree to ensuring confidence to the team members while executing decisions (5% = SWD, 3.5% = D, and 2.5% = SD), and a very small proportion of respondents (5.5% = N) consider it irrelevant to impart confidence among team members for diagnosing problems while taking decisions. It can be stated based on the weighted average score of 5.41 that the majority of managers and owners of manufacturing SMEs give due attention to building confidence among the team members to diagnose the problems faced in order to reach at effective decisions.

It is common among manufacturing SMEs to discuss the early symptoms of the problem in order to avoid potential problems in future (24.5% = SWA, 36% = A,

and 19% = SA), while a small proportion of managers/owners believe that reviewing early symptoms would always not help in taking effective decisions, without having any control over the problems/environment (4.3% = SWD, 4.5% = D, and 2.5% = SD). However, according to a similar proportion of the sample (9.3% = N), discussing the problem's early symptoms also becomes irrelevant to the decision making process; hence their decisions are made without such consideration. With the weighted average score of 5.33, it indicates that discussing on the identified early problem symptoms so as to diagnose the problem among business managers in manufacturing SMEs, and initiate appropriate actions.

Studying the problem from more than one perspective is believed to be helpful in diagnosing the problem, as stated by the majority of the respondents (29% = SWA, 34% = A, and 16.5% = SA), while a small section of respondents, claim their decisions are made without investigating various dimensions of the problems (4.3% = SWD, 4% = D, and 3.5% = SD). Further, a very small percentage of respondents (8.8 = N), feel investigation multiple aspects of the problem is not essential for decision making. With a weighted average score of 5.24, it can be concluded that studying the problem from many perspectives is always encouraged among the majority of manufacturing SMEs in Yemen.

The overall weighted average score of “diagnosing problem” is 5.33, which unveiling that the practice of diagnosing the problem while taking the decision is observed as moderately common among the managers of manufacturing SMEs in Yemen.

4.2.2 Developing alternatives (DA)

Table 4-6 presents the descriptive analysis of the responses relating to the practices of developing alternative solutions in the process of decision making among manufacturing SMEs in Yemen.

Table 4-6: Descriptive statistics - Developing Alternatives.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-The manager participates with team members in the process of developing alternatives for the decision.	F	9	15	20	43	79	146	88	5.40	1.45
	%	2.3%	3.8%	5.0%	10.8%	19.8%	36.5%	22.0%		
2-We utilize previous experience and practices while searching for alternatives.	F	5	12	15	52	96	129	91	5.43	1.34
	%	1.3%	3.0%	3.8%	13.0%	24.0%	32.3%	22.8%		
3-The team members are encouraged to give their ideas and thoughts about possible alternatives.	F	15	15	18	38	83	149	82	5.34	1.52
	%	3.8%	3.8%	4.5%	9.5%	20.8%	37.3%	20.5%		
4-Communication is established and encouraged among the team members with respect to developing potential alternatives.	F	6	25	22	33	108	143	63	5.23	1.43
	%	1.5%	6.3%	5.5%	8.3%	27.0%	35.8%	15.8%		
Overall (DA)									5.35	1.19

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

The participation of managers with their teams to develop possible solutions to the discussed problem in the first step is considered common among manufacturing SMEs (19.8% = SWA, 36.5% = A, and 22% = SA). On the other hand, such participation of managers is not considered essential by a small section of the respondents (5% = SWD, 3.8% = D, and 2.3% = SD). At the same time, such participation is skipped by a small percentage of responses because it is not

considered relevant and alternative solutions are developed without the managers involvement (10.8% = N). The weighted average score of 5.40 unveils that the majority of business owners adhere to the practice of involving managers while developing alternative solutions to their emergent/contemporary problem.

Utilizing previous experience while developing alternative solutions for making effective decisions is a common practice according to majority of respondents (24% = SWA, 32.3% = A, and 22.8% = SA), while the same is not practiced by a small portion of business managers (3.8% = SWD, 3% = D, and 1.3% = SD). Further, a small proportion of the sample (13% = N) does not feel it relevant to depend on their previous experience while developing possible alternatives. It can be stated with a weighted average score of 5.43 that Previous experience plays a significant role in the process of developing possible alternative solutions.

Continuous exposure to a given environment makes the employee efficient, hence, encouraging the team members to present their ideas to generating any possible alternative to prevailing problems is commonly adopted among business managers in manufacturing SMEs (20.8% = SWA, 37.3% = A, and 20.5% = SA), while it is not considered essential by a very small section of the respondents (4.5% = SWD, 3.8% = D, and 3.8% = SD). However, a very small portion of the respondents (9.5% = N) believe that alternative solutions can be developed without any encouragement for the team members to present their views/ideas that can be a potential alternative solution. It can be concluded with a weighted average score of 5.34 that there is a moderate adherence to the practice of encouraging the team members in the process of developing possible alternatives.

Establishing and ensuring communication among the team members is always promoted among business managers while making decisions (27% = SWA, 35.8%

= A, and 15.8% = SA). However, communication is not considered essential to promote the development of possible alternatives in view of a very low percentage of respondents (5.5% = SWD, 6.3% = D, and 1.5% = SD). Further, a smaller percentage of the sampled respondents (8.3% = N) believe that alternative solutions are developed without encouraging communication among stakeholders group as it is considered irrelevant. It can be concluded with a weighted average score of 5.23 that the communication among the team members should encouraged while developing potential alternative solutions is moderately appreciated among managers of manufacturing SMEs.

It can be further concluded with the overall weighted average score of 5.35 that developing potential alternative solutions in the decision making process is moderately adopted among manufacturing SMEs in Yemen (Table 4-6).

4.2.3 Evaluating available alternatives (EA)

Table 4-7 presents the descriptive analysis of the responses that reflect the practices of managers/owners with respect to evaluating the available potential alternative solutions while taking decisions.

Table 4-7: Descriptive statistics - Evaluating available alternatives.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-We identify the advantages and disadvantages of each alternative.	F	4	19	23	41	109	148	56	5.25	1.34
	%	1.0%	4.8%	5.8%	10.3%	27.3%	37.0%	14.0%		
2-We formulate the expected outcomes of each alternative for the evaluation process	F	12	13	20	39	115	144	57	5.23	1.40
	%	3.0%	3.3%	5.0%	9.8%	28.8%	36.0%	14.3%		
3-The team members are encouraged to give their ideas and thought about possible alternatives.	F	10	15	19	34	106	163	53	5.28	1.37
	%	2.5%	3.8%	4.8%	8.5%	26.5%	40.8%	13.3%		

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
4-We evaluate the effectiveness of each alternative and its chances of being the best alternative.	F	10	12	17	32	112	142	75	5.38	1.37
	%	2.5%	3.0%	4.3%	8.0%	28.0%	35.5%	18.8%		
Overall (EA)									5.28	1.15

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Listing the advantages and disadvantages of each alternative developed becomes a significant step while evaluating potential alternative solution offers, according to a large section of the sampled respondents (27.3% = SWA, 37% = A, and 14% = SA), however, the same is not considered an effective practice by a small section of respondents (5.8% = SWD, 4.8% = D, and 1% = SD). Further, a similar percentage of the sample (10.3% = N) does not appreciate the relevance of listing the advantages/disadvantages of each alternative solutions to ensure the effectiveness of the decisions made. It can be concluded with a weighted average score of 5.25 that listing the advantages and disadvantages of each alternative plays a significant role in evaluating what each alternative offers, before the decisions are made.

Stating the expected outcome of each alternative is helpful for successful evaluation of the alternatives, by managers of manufacturing SMEs (28.8% = SWA, 36% = A, and 14.3% = SA); on the other hand, formulating such outcome is not considered essential to evaluate the alternative solutions according to a small portion of the sampled managers (5% = SWD, 3.3% = D, and 3% = SD). However, A smaller proportion (9.8% = N) does not involve the expected outcome of the potential alternative solution during their evaluation as it is felt irrelevant. with the weighted average score of 5.23, it can be concluded that formulating the expected

outcome of alternatives is found to be moderately common practice among managers of manufacturing SMEs.

Considering the ideas and opinions of the team members while evaluating alternatives is commonly practiced among managers of manufacturing SMEs (26.5% = SWA, 40.8% = A, and 13.3% = SA), however, the same is not considered essential during the evaluation process according to a small section of the sample (4.8% = SWD, 3.8% = D, and 2.5% = SD). Further, the same practice is also not considered relevant according to another small portion of the sample (8.5 = N); hence, evaluating the potential of the alternative solutions depends on managers' personal views rather than the intuitive ideas of all the team members. With a weighted average score of 5.28. it can be stated that encouraging the team members to share their ideas and opinions regarding the developed alternatives is moderately practiced by managers of manufacturing SMEs in Yemen.

Identifying the potential of the alternative, to be the best alternative before implementing is a common practice among the majority of managers of manufacturing SMEs (28% = SWA, 35.5% = A, and 18.8% = SA). However, such identification is not felt essential while implementing alternative solutions in the view of a small proportion of the sample (4.3% = SWD, 3% = D, and 2.5% = SD). Further, another small section of the sample (8% = N) have expressed a neutral point of view towards identifying the chance of the alternative solutions being the best alternative, rather felt irrelevant by them. With a weighted average score of 5.38, it can be stated that evaluating the effectiveness of each alternative and its ability to become the best alternative is commonly practiced by the majority of managers of manufacturing SMEs.

With an overall weighted average score of 5.28, it can be concluded that evaluating each alternatives during the decision making, is a moderately adopted practice among managers of manufacturing SMEs in Yemen (Table 4-7).

4.2.4 Choosing the best alternative (CA)

Table 4-8 presents the descriptive analysis of the responses relating to the practices of selecting the most appropriate alternative solution, to the diagnosed problem, among manufacturing SMEs.

Table 4-8: Descriptive statistics - Choosing the best alternative.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-I cooperate with team to discuss selecting the alternative with more merits and less demerits	F	10	14	15	37	113	135	76	5.35	1.39
	%	2.5%	3.5%	3.8%	9.3%	28.3%	33.8%	19.0%		
2-I take into consideration the various points of views of the team member with respect to selecting the best alternative.	F	10	12	20	32	123	139	64	5.30	1.36
	%	2.5%	3.0%	5.0%	8.0%	30.8%	34.8%	16.0%		
3-We exchange thoughts, messages and ideas in the process of selecting the best alternative	F	9	17	12	29	108	148	77	5.41	1.38
	%	2.3%	4.3%	3.0%	7.3%	27.0%	37.0%	19.3%		
4-Positive attitude is maintained among team members when suggesting their views on selecting best alternative.	F	9	16	13	35	105	144	78	5.39	1.39
	%	2.3%	4.0%	3.3%	8.8%	26.3%	36.0%	19.5%		
Overall (CA)									5.36	1.17

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Every initiative taken by business carry their own merits and demerits. Focusing on the alternatives with more merits and less demerits is commonly practiced by majority of managers in the manufacturing SMEs (28.3% = SWA, 33.8% = A, and

19% = SA), while the same is not widely adopted among a small proportion of the sample (3.8% = SWD, 3.5% = D, and 2.5% = SD). Further, another similar small section of the sample (9.3% = N) does not appreciate the relevance of focusing on the alternative with mere merits and least demerits while deciding on the most appropriate alternative solution. With a weighted average score of 5.35, it becomes obvious that majority of managers among manufacturing SMEs adhere to the practice of discussing alternatives having least demerits and more merits.

Taking into consideration the ideas presented by the team regarding selecting the best alternative solution is a common practice among managers in manufacturing SMEs in Yemen (30.8% = SWA, 34.8% = A, and 16% = SA). While it is disagreed upon by a very small portion of the sample (5% = SWD, 3% = D, and 2.5% = SD). Another smaller percentage of respondents (8% = N) do not consider the relevance of presentation of ideas/opinions by the team while choosing the best alternative solution. With a weighted average of 5.30, it unveils that there is a moderate scope for the practice of considering the ideas, and opinions of the team members while choosing the best alternative.

Exchanging ideas and thoughts among the team members is an essential practice among majority of manufacturing SMEs (27% = SWA, 37% = A, and 19.3% = SA), while such exchange is not practiced by a small proportion of the sampled managers (3% = SWD, 4.3% = D, and 2.3% = SD). Further, in the views of another small number of respondents (7.3% = N) there is no dependence between exchanging ideas and the process of selecting the best alternative solutions. The weighted average score of 5.41 reveals that the majority of managers adopt the practice of exchanging ideas and thoughts so that they can evolve with the best alternative solutions to implement and realize the potential opportunities available.

The encouragement of maintaining a positive attitude among team members while suggesting views regarding the best alternatives chosen is a common practice among managers of manufacturing SMEs (26.3% = SWA, 36% = A, and 19.5% = SA), while maintaining a positive attitude is not considered as an essential factor according to a small portion of sampled managers (3.3% = SWD, 4% = D, and 2.3% = SD). Another very small section of respondents (8.8% = N) does not value the relevance of establishing their relationship between positive attitude and successful selection of the best alternative.

It can be concluded with the overall weighted average score of 5.36 that the practice of selecting the best alternative solution is based on the positive attitude is moderately adopted among the managers in manufacturing SMEs in Yemen (Table 4-8).

4.2.5 Implementing the chosen alternative (IA)

Table 4-9 presents the descriptive analysis of the responses relating to the practice of implementing the decision among manufacturing SMEs.

Table 4-9: Descriptive statistics - Implementing the chosen alternative.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Our organization identifies the appropriate budget for implementing the decision.	F	15	19	15	25	109	144	73	5.30	1.50
	%	3.8%	4.8%	3.8%	6.3%	27.3%	36.0%	18.3%		
2-Our organization presents the required work procedures for implementing the decisions.	F	17	21	14	31	110	130	77	5.24	1.55
	%	4.3%	5.3%	3.5%	7.8%	27.5%	32.5%	19.3%		
3We begin with minor reactions then we keep going through in the implementation process.	F	15	21	18	25	117	139	65	5.21	1.51
	%	3.8%	5.3%	4.5%	6.3%	29.3%	34.8%	16.3%		
	F	22	9	16	35	94	142	82	5.31	1.55

Statements	SD	D	SWD	N	SWA	A	SA	Mean	S.D.
4-We seek experts' opinions for the team members in implementing the decision.	%	5.5%	2.3%	4.0%	8.8%	23.5%	35.5%	20.5%	
Overall (IA)								5.26	1.28

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

According to large group of respondents identifying the appropriate budget for implementing the decision is one of the key factors that facilitate the implementation of the chosen alternative (27.3% = SWA, 36% = A, and 18.3% = SA). While it is not considered a priority by a small portion of the sample (3.8% = SWD, 4.8% = D, and 3.8% = SD). However, according to another smaller percentage of the sample (6.3% = N), identifying a necessary budget is irrelevant to implement the alternative chosen. With a weighted average score of 5.30, it becomes very obvious that determining the budget alternative implementation is moderately common among manufacturing SMEs in Yemen.

Outlining the detailed procedures and guidelines at the phase of implementing the decision is a common practice among managers of the majority of the manufacturing SME managers in Yemen (27.5% = SWA, 32.5% = A, and 19.3% = SA), while it is not considered an essential practice by a small proportion of the sample (3.5% = SWD, 5.3% = D, and 4.3% = SD). However, a similar small proportion of the sample (7.8% = N) does not appreciate and place relevance of outlining procedures and guidelines for implementation before implementing the chosen alternative. The weighted average score of 5.24 indicates that the practice of outlining detailed guidelines and procedures for the purpose of implementing the alternatives has a moderate adoption among manufacturing MSEs.

Adopting small steps in the beginning of the implementation of the alternative is considered an effective practice by the majority of respondents (29.3% = SWA, 34.8% = A, and 16.3% = SA), while the same is not commonly practiced by a small portion of the sample (4.5% = SWD, 5.3% = D, and 3.8% = SD). However, small portion of the sample (6.3% = N) also consider it irrelevant to adopt small steps at the beginning of the implementation, before fully implementing. The weighted average score of 5.21 indicates that it is moderately common among managers of manufacturing SME to test the feasibility by implementing at micro level before implementing the alternative comprehensively throughout the organization.

Involving subject experts to exhibit their opinion in the process of implementing an alternative solution is a common practice among majority of the manufacturing SMEs (23.5% = SWA, 35.5% = A, and 20.5% = SA) while the same is not practiced by a small portion of the sample (4.0% = SWD, 2.3% = D, and 5.5% = SD), and relatively a small proportion of the sample believes that seeking opinion of subject experts is not relevant while implementing alternative (8.8% = N); hence, at the implementation stage, views of subject experts becomes irrelevant. The weighted score of 5.31 leads us to conclusion that majority of the manufacturing SME managers moderately depend on the opinions of subject experts with respect to the alternatives they intend to implement.

The overall weighted average of 5.26 unveils that there is moderate adoption of the practices enlisted while implementing the chosen alternatives by the sampled business units.

4.2.6 Monitoring and following up with the alternative implemented (MEA)

Table 4-10 presents the descriptive analysis of the responses relating to the practices of monitoring the implementation and effectiveness of the implemented decision among manufacturing SMEs.

Table 4-10: Descriptive statistics - Monitoring and following up the alternative.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Our organization relies on specific criteria to measure the extent of success of the decisions.	F	18	20	27	31	112	126	66	5.10	1.58
	%	4.5%	5.0%	6.8%	7.8%	28.0%	31.5%	16.5%		
2-Our organization monitors the decision in all the stages of implementation.	F	14	19	31	28	117	137	54	5.11	1.50
	%	3.5%	4.8%	7.8%	7.0%	29.3%	34.3%	13.5%		
3-Our organization measures the decision's effectiveness by comparing the results against the expectations	F	13	21	16	43	115	148	44	5.12	1.44
	%	3.3%	5.3%	4.0%	10.8%	28.8%	37.0%	11.0%		
4-Feedbacks are collected and taken seriously by management for re-decision making.	F	12	19	20	36	99	153	61	5.24	1.46
	%	3.0%	4.8%	5.0%	9.0%	24.8%	38.3%	15.3%		
Overall (MEA)									5.14	1.24

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Having specific criteria to judge the success of the decision is a common practice among majority of manufacturing SMEs (28% = SWA, 31.5% = A, and 16.5% = SA), while it is dissimilar among a small proportion of the sample (6.8% = SWD, 5% = D, and 4.5% = SD). On the other hand, another small part of the sample (7.8% = N) does not appreciate the relevance of the judging criteria to the success of alternative implemented. The weighted average score of 5.10 indicates that the

practice of having relevant criteria to judge the success of a decision is felt moderately important among Manufacturing SMEs in Yemen.

Monitoring the decisions at all the stages of implementation is commonly practiced among majority of manufacturing SMEs in Yemen (29.3% = SWA, 34.3% = A, and 13.5% = SA), while this is not a common practice among a small part of the sample (7.8% = SWD, 4.8% = D, and 3.5% = SD). Another relatively small percentage of the sample (7% = N) consider this practice to be irrelevant for successful implementation. It can be concluded with a weighted average score of 5.11 that continuous monitoring of the decisions during its implementation is seen as a moderate common practice among manufacturing SMEs.

The majority of the sampled SMEs (28.8% = SWA, 37% = A, and 11% = SA) use the results of the decision and compare them with what was expected from the decisions for the purpose of judging its success; however, such comparison is not adhered to by a small part of the sample (4% = SWD, 5.3% = D, and 3.3% = SD). On the other hand, a relatively small percentage of the sample (10.8% = N) does not appreciate the relevance of comparing the results with the expectation to reap success of their decision. The weighted average score of 5.12 unveils that there is a moderate level of adoption of such practice to compare the results with the expectation of a decision to judge its effectiveness among small and medium enterprises in Yemen.

Considering the feedback of all managers in the process of evaluating the success of a decision is commonly adopted by the majority of managers of manufacturing SMEs (24.8% = SWA, 38.3% = A, and 15.3% = SA), while it is not considered essential according to a small portion of the sample (5% = SWD, 4.8% = D, and 3% = SD). However, a relatively small percentage of the sample (9% = N) do not feel

relevant to collecting managers' feedback while evaluating the success of decision. A weighted average score of 5.24 indicates that the practice of collecting managers' feedback while evaluating the success of a decision is seen a moderately common practice among manufacturing SMEs in Yemen.

The overall weighted average score of 5.11 indicates that it is a moderate common practice to adopt the practice to monitor the success of the decision adopted among small and medium enterprises in Yemen (Table 4-10).

4.3 Other strategic practices relating to Decision making among SMEs (SPDM)

This section presents the descriptive analysis of the responses relating to the strategic practices relating to the decision making among manufacturing SMEs.

4.3.1 Evaluating the current performance (ECP)

Table 4-11 presents the descriptive analysis of the responses relating to the periodic evaluation of the current performance of manufacturing SMEs in Yemen.

Table 4-11: Descriptive statistics - Evaluating the current performance.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Our company evaluates the results of its current performance	F	32	17	11	20	70	137	113	5.36	1.78
	%	8.0%	4.3%	2.8%	5.0%	17.5%	34.3%	28.3%		
2-Our company evaluates the extent of its success in accomplishing its current mission.	F	15	25	12	20	89	136	103	5.41	1.59
	%	3.8%	6.3%	3.0%	5.0%	22.3%	34.0%	25.8%		
3-Our company evaluates its success in accomplishing its current strategic goals.	F	18	22	12	9	91	140	108	5.46	1.61
	%	4.5%	5.5%	3.0%	2.3%	22.8%	35.0%	27.0%		
	F	13	20	15	31	87	138	96	5.39	1.53

Statements	SD	D	SWD	N	SWA	A	SA	Mean	S.D.
4-Our company evaluates the extent of ability within the strategies to accomplish the planned performance.	%	3.3%	5.0%	3.8%	7.8%	21.8%	34.5%	24.0%	
Overall (ECP)								5.40	1.42

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Evaluating the results of the current performance is commonly followed among majority of manufacturing SMEs in Yemen (17.5% = SWA, 34.4% = A, and 28.3% = SA), while it is not followed by a small section of the sample (2.8% = SWD, 4.3% = D, and 8% = SD). Another relatively small section of the sample (5% = N) does not appreciate the relevance of evaluating the results or current performance. The weighted average score of 5.36 unveils that the practice of evaluating the results of the performance is moderately followed by manufacturing SMEs.

Evaluating the extent of mission accomplished is a common practice among majority of SMEs (22.3% = SWA, 34% = A, and 25.8% = SA), while it is not considered a critical dimension of measuring the current performance according to a small section of the sample (3% = SWD, 6.3% = D, and 3.8% = SD), further, it is not considered a relevant practice by a very small section of the sample (5% = N), which indicates that measuring the performance is not a part of evaluating their current performance. It can be concluded with a weighted average score of 5.41 that the practice of evaluating the extent to which the mission is accomplished is moderately adopted by manufacturing SMEs in Yemen.

Evaluating the success of accomplishing the strategic goals is a common practice among SMEs in Yemen (22.8% = SWA, 35% = A, and 27% = SA), while it is found commonly adopted among a small section of the sample (3% = SWD, 5.5% = D,

and 4.5% = SD). However, a relatively very small section of the sample (2.3% = N) are not aware of the role evaluating the extent of achieving strategic goals can play in promoting current performance. It can be concluded with a weighted average score of 5.46 that the practice of evaluating the success of achieving strategic goals is a relatively common practice adopted by manufacturing SMEs in Yemen.

Evaluating the ability of strategies to achieve the planned performance is a relatively common practice among manufacturing SMEs in Yemen (21.8% = SWA, 34.5% = A, and 24% = SA), while it is not considered a sound practice by a small section of the sampled SMEs (3.8% = SWD, 5% = D, and 3.3% = SD), and relatively, a small proportion of the sample (7.8% = N) does not consider it relevant to evaluate the ability of the strategies adopted by them in achieving strategic goals and promote the current performance among manufacturing SMEs. The weighted average score of 5.39 unveils that it is moderately common practice among manufacturing SMEs in Yemen to practice the evaluation of the ability of their strategies to achieve strategic goals.

It can also be concluded with the overall weighted average score of 5.40 that the practices relating to evaluating the current performance by sampled SMEs receive a moderate appreciation by managers of manufacturing SMEs in Yemen (Table 4-11).

4.3.2 Evaluating managerial performance (EMP)

Table 4.12 presents the descriptive analysis of the responses relating to the regular evaluation of managerial performance among manufacturing SMEs.

Table 4-12: Descriptive statistics - Evaluating managerial performance.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Evaluating managerial performance is one of the priorities in our organization.	F	13	12	15	28	82	136	114	5.55	1.48
	%	3.3%	3.0%	3.8%	7.0%	20.5%	34.0%	28.5%		
2-Our organization has an evaluation form for evaluating managerial performance.	F	16	20	15	38	109	130	72	5.21	1.53
	%	4.0%	5.0%	3.8%	9.5%	27.3%	32.5%	18.0%		
3-There is a role defined for each Manager in the organization	F	15	11	15	41	97	142	79	5.34	1.46
	%	3.8%	2.8%	3.8%	10.3%	24.3%	35.5%	19.8%		
4-Our company set managerial competencies as a measure to evaluate managerial performance	F	16	16	21	37	90	150	70	5.25	1.52
	%	4.0%	4.0%	5.3%	9.3%	22.5%	37.5%	17.5%		
Overall (EMP)									5.33	1.23

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

The evaluation of managerial performance among SMEs being a priority by the majority of the sampled SMEs (20.5% = SWA, 34% = A, and 28.5% = SA), while such evaluation is not considered essential by of a small portion of the sample (3.8% = SWD, 3% = D, and 3.3% = SD). On the other hand, relatively a small percentage of respondents (7% = N) do not appreciate the relevance of the evaluating of managerial performance towards the success of the decisions implemented. The weighted average score of 5.55 indicates that, evaluation of managerial performance is considered a priority by small and medium enterprises in Yemen.

Designing an evaluation form to be used as a tool to evaluate the managerial performance of SMEs is a common practice among the majority of the sampled SMEs (27.3% = SWA, 32.5% = A, and 18% = SA); at the same time, it is not

practiced or followed by a small proportion of the sampled SMEs (3.8% = SWD, 5% = D, and 4% = SD), another relatively small proportion of the sample (9.5% = N) are unaware of the relevance to adopt a specific form to evaluate the success of managerial performance. The weighted average mean score of 5.21 unveils that having a customized form for evaluation of managerial performance is appreciated moderately adopted by manufacturing SMEs in Yemen.

Identifying the role of each manager in the enterprises in the process of promoting their performance is a common practice among manufacturing SMEs (24.3% = SWA, 35.5% = A, and 19.8% = SA), while their rule is felt unimportant by a small proportion of the sample (3.8% = SWD, 2.8% = D, and 3.8% = SD) making such identification unnecessary. However, relatively a small proportion of the sample (10.3% = N) do not appreciate the relevance of identifying the role of each operating manager while evaluating the managerial performance of the enterprises. The weighted average score of 5.34 leads to the conclusion that majority of manufacturing SMEs find managers' roles are moderately defined for the purpose of facilitating the performance evaluation in the enterprise.

Utilizing managerial competencies as a measure for evaluating the managerial performance among SMEs is a common practice among majority of the respondents (22.5% = SWA, 37.5% = A, and 17.5% = SA), while the same is not well known for a small proportion of the sample (5.3% = SWD, 4% = D, and 4% = SD). However, a relatively smaller percentage of the sample (9.3% = N) are found unaware about the relevance of managerial competencies and its role while evaluating the managerial performance. The weighted average score of 5.25 indicates that there is a moderate utilization of managerial competency as a tool/measure for evaluating performance of SMEs in Yemen.

It can also be concluded with the overall weighted average score of 5.33 that the practice of using managerial competencies in an enterprise, as a measure for evaluating their managerial performance is a moderately appreciated practice among manufacturing SMEs in Yemen (Table 4-12).

4.3.3 Evaluation of managers' performance (EMSP)

Table 4-13 presents the descriptive analysis of the responses relating to the regular evaluation of managers among manufacturing SMEs.

Table 4-13: Descriptive statistics - Evaluation of managers' performance.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Our organization evaluates the performance of the board of directors	F	17	27	17	33	106	128	72	5.14	1.60
	%	4.3%	6.8%	4.3%	8.3%	26.5%	32.0%	18.0%		
2-Our organization creates the required changes in the membership of board of directors based on efficiency.	F	21	25	24	44	87	135	64	5.03	1.65
	%	5.3%	6.3%	6.0%	11.0%	21.8%	33.8%	16.0%		
3-Our company evaluates the performance of executives (general manager and administrative managers)	F	21	29	14	43	95	121	77	5.08	1.68
	%	5.3%	7.3%	3.5%	10.8%	23.8%	30.3%	19.3%		
4-Our organization works on attracting executives based on efficiency.	F	24	22	14	35	89	114	102	5.23	1.71
	%	6.0%	5.5%	3.5%	8.8%	22.3%	28.5%	25.5%		
Overall (EMSP)									5.12	1.38

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Evaluating the performance of the board of directors/general managers is a commonly felt need by majority of manufacturing SMEs (26.5% = SWA, 32% = A, and 18% = SA), such evaluation is not considered essential by a small proportion of

the sample (4.3% = SWD, 6.8% = D, and 4.3% = SD). At the same time, a relatively small percentage of the sample (8.3% = N) are found to be unaware of the role of evaluating the directors' performance in enhancing the performance and evaluating the managers in the enterprise. The weighted average score of 5.14 reveals that the majority of manufacturing SMEs adopt the practice of evaluating the performance of the board of directors.

Incorporating necessary changes to the board of directors based on their efficiency is a common practice among manufacturing SMEs in Yemen (21.8% = SWA, 33.8% = A, and 16% = SA), while no changes are made to the board according to a small section of the sample (6% = SWD, 6.3% = D, and 5.3% = SD). However, a relatively small section of the sample (11% = N) are not aware of the relevance of adopting the necessary changes to the board of directors, so as to promote the performance of managers in the enterprises. The weighted average score of 5.03 indicates that the majority of enterprises adopt and make necessary changes to their board of directors based on their efficiency and the emergent needs.

The regular evaluation of the performance of general executives and administrative staff is commonly found among majority of the sampled managers (23.8% = SWA, 30.3% = A, and 19.3% = SA), while it is not adhered to by a small proportion of the sample (3.5% = SWD, 7.3% = D, and 5.3% = SD). However, a relatively small percentage of the sample (10.8% = N) are unaware of the relevance of evaluating general executives and administrative staff performance in the process of promoting the managers' performance. The weighted average score of 5.08 indicates that evaluating the performance of general executives and administrative staff is moderately appreciated by manufacturing SMEs in Yemen.

Aiming to attract executives based on their efficiency is commonly observed among majority of the SMEs (22.3% = SWA, 28.5% = A, and 25.5% = SA), while it is not commonly adopted by a small section of the sample (3.5% = SWD, 5.5% = D, and 6% = SD). Further, a relatively small section of the sample (8.8% = N) are unaware of the role attracting new executives based on their efficiency can play in promoting the performance of managers, and thereby the organization as a whole. The weighted average score of 5.23 unveils that attracting executives is moderately common practice among manufacturing SMEs in Yemen.

The overall weighted average score of 5.12 unveils that the practices of evaluating managers' performance is moderately appreciated and adopted among manufacturing SMEs in Yemen (Table 4-13).

4.3.4 Strategic analysis (Internal resources) (SAIR)

Table 4-14 presents the descriptive analysis of the responses relating to the strategic analysis of the internal resources of the manufacturing SMEs.

Table 4-14: Descriptive statistics - Strategic analysis (Internal resources).

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Our organization ensures evaluating its organizational structure and culture regularly.	F	18	15	15	32	97	148	75	5.30	1.52
	%	4.5%	3.8%	3.8%	8.0%	24.3%	37.0%	18.8%		
2-Our organization ensures evaluating its financial resources regularly.	F	10	13	19	22	110	150	76	5.41	1.38
	%	2.5%	3.3%	4.8%	5.5%	27.5%	37.5%	19.0%		
3-Our organization ensures evaluating its human resources regularly (skills, knowledge, functional expertise etc.).	F	11	23	11	40	97	151	67	5.28	1.46
	%	2.8%	5.8%	2.8%	10.0%	24.3%	37.8%	16.8%		
Overall (SAIR)									5.33	1.24

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Regular evaluation of the organizational structure is a commonly adopted practice among manufacturing SMEs (24.3% = SWA, 37% = A, and 18.8% = SA), while it is not considered as an effective practice and adhered to, by a very little portion of the sample (3.8% = SWD, 3.8% = D, and 4.5% = SD). However, a relatively small section of the sample (8% = N) are found unaware of the relevance of evaluating the organizational structure while performing strategic analysis of the enterprise. The weighted average score of 5.30 unveils that the practice of evaluating the organizational structure adopted by enterprises on a regular basis is moderately appreciated by the manufacturing SMEs in Yemen.

Regular evaluation of the financial resources of an enterprise is also a common practice among the majority of manufacturing SMEs (27.5% = SWA, 37.5% = A, and 19% = SA), while it is not adhered to by a small section of the sample (4.8% = SWD, 3.3% = D, and 2.5% = SD). Further, relatively a small section of the sample (5.5% = N) are found unaware of the relevance of evaluating the financial resources as a part of to promoting the strategic analysis performed by the enterprise. The weighted average score of 5.41 unveils that the practice of evaluating financial resources on a regular basis is moderately appreciated practice among manufacturing SMEs in Yemen.

Regular evaluation of human resources and its efficiency by the enterprise is commonly practiced by the majority of Yemeni SMEs (24.3% = SWA, 37.8% = A, and 16.8% = SA), while it is not adhered to by a small proportion of the sample (2.8% = SWD, 5.8% = D, and 2.8% = SD), and another relatively small section of the sample (10% = N) does not consider the role of evaluating human resources important in the process of improving their strategic analysis and performance. It can be concluded with a weighted average score of 5.28 that while carrying out the

strategic analysis placing importance to assessing human resources is also moderately appreciated and adopted by manufacturing SMEs in Yemen.

It can also be concluded with the overall weighted average score of 5.33 that while performing their strategic analysis evaluating all their internal resources is considered moderately important by manufacturing SMEs in Yemen (Table 4-14).

4.3.5 Strategic analysis (S.W.O.T) (SASWOT)

Table 4-15 presents the descriptive analysis of the responses relating to the strategic analysis and application of strengths, weaknesses, opportunities and threats (SWOT) among manufacturing SMEs.

Table 4-15: Descriptive statistics - strategic analysis (S.W.O.T).

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Our organization pays attention to SWOT analysis in a regular basis as a priority of its strategic plans. (Global)	F	10	20	26	29	111	130	74	5.24	1.48
	%	2.5%	5.0%	6.5%	7.3%	27.8%	32.5%	18.5%		
2-Our organization identifies and evaluates the strategic factors relevant to strength in performance and business activities.	F	11	22	27	34	113	130	63	5.15	1.49
	%	2.8%	5.5%	6.8%	8.5%	28.3%	32.5%	15.8%		
3-Our organization identifies and evaluates the strategic factors relevant to weakness in the performance and managerial performance.	F	18	27	18	33	127	118	59	5.04	1.57
	%	4.5%	6.8%	4.5%	8.3%	31.8%	29.5%	14.8%		
4-Our organization identifies and evaluates the strategic factors relevant to opportunities in business.	F	15	18	19	36	122	131	59	5.15	1.48
	%	3.8%	4.5%	4.8%	9.0%	30.5%	32.8%	14.8%		
5-Our organization identifies and evaluates the strategic factors relevant to threats and challenges facing the business and activities.	F	14	25	19	35	105	131	71	5.17	1.55
	%	3.5%	6.3%	4.8%	8.8%	26.3%	32.8%	17.8%		
Overall (SASWOT)									5.15	1.24

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Considering the strategic analysis of strengths, weaknesses, threats and opportunities (SWOT analysis) as a priority is well appreciated and followed by manufacturing SMEs in Yemen (27.8% = SWA, 32.5% = A, and 18.5% = SA), while it is not agreed by a small portion of the sample (6.5% = SWD, 5% = D, and 2.5% = SD), and a relatively small percentage of the sample (7.3% = N) are unaware of the relevance of conducting SWOT analysis while carrying out their strategic analysis. The weighted average score of 5.24 indicates that placing SWOT analysis on priority is moderately appreciated practice among the manufacturing SMEs.

Identification and evaluation of the factors that build the strength of the enterprises is a common practice among manufacturing SMEs in Yemen (28.3% = SWA, 32.5% = A, and 15.8% = SA), while it is not adhered to by a small section of the sample (6.8% = SWD, 5.5% = D, and 2.8% = SD) who pays no attention to such factors. Further, a relatively small section of the sample (8.5% = N) are found not utilizing the identified strength of the enterprise. It can be concluded with a weighted average score of 5.15 that the practice of identifying and evaluating factors exhibiting the strength of the enterprise is a moderately appreciated among manufacturing SMEs.

Identifying and evaluating the factors that unveils the weakness hindering the performance of the enterprises is commonly practiced among manufacturing SMEs in Yemen (31.8% = SWA, 29.5% = A, and 14.8% = SA), while it is not practiced among a small section of the sample (4.5% = SWD, 6.8% = D, and 4.5% = SD), and another relatively small section of the sample (8.3% = N) are unaware of the importance of identifying the factors exhibiting their weakness so as to increase/enhance the performance of the enterprise. It can be stated with a weighted

average score of 5.04 that the practice of identifying and evaluating factors unveiling the weakness hindering the performance of the enterprise is a moderately appreciated practice among manufacturing SMEs in Yemen.

Identification and evaluation of the factors that show case the potential business opportunities and enhance their performance is a commonly observed practice among manufacturing SMEs in Yemen (30.5% = SWA, 32.8% = A, and 14.8% = SA), while it is not practiced by a small section of the sample (4.8% = SWD, 4.5% = D, and 3.8% = SD), another relatively small section of the sample (9% = N) are found to be unaware about the importance of identifying any factors relating to the business opportunities for the enterprise. It can be stated with a weighted average score of 5.15 that the practice of identifying and evaluating factors exhibiting the potential business opportunities for the enterprise is a moderately appreciated practice among manufacturing SMEs.

Identifying and evaluating the factors relating to the threats a business is exposed to is commonly practiced among manufacturing SMEs in Yemen (26.6% = SWA, 32.8% = A, and 17.8% = SA), while this is not practiced among a small section of the sample (4.8% = SWD, 6.3% = D, and 3.5% = SD), and another relatively small section of the sample (8.8% = N) are found unaware of the importance of identifying any potential threat to which the enterprise may be exposed to. It can be stated with a weighted average score of 5.17 that the practice of identifying and evaluating factors exhibiting the potential threat an enterprise may be exposed to is a moderately appreciated practice among manufacturing SMEs.

It can also be concluded with the overall weighted average score of 5.15 that the practice of adhering to SWOT analysis is moderately appreciated among manufacturing SMEs in any underdeveloped economy like Yemen (Table 4-15).

4.4 The performance of SMEs (SMEsP)

This section presents the descriptive analysis of the responses relating to four dependent variables, which are the four variables related to the performance of manufacturing SMEs.

4.4.1 Performance growth among SMEs (PG)

Table 4-16 presents the descriptive analysis of the responses relating to performance growth among manufacturing SMEs.

Table 4-16: Descriptive statistics - Performance growth among SMEs.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-The company has achieved positive growth lately.	F	15	23	28	42	134	105	53	4.96	1.52
	%	3.8%	5.8%	7.0%	10.5%	33.5%	26.3%	13.3%		
2-Customer satisfaction has significantly increased.	F	19	24	19	47	125	110	56	4.97	1.56
	%	4.8%	6.0%	4.8%	11.8%	31.3%	27.5%	14.0%		
3-The company has increased in the number of permanent employees employed.	F	19	31	24	44	120	114	48	4.87	1.60
	%	4.8%	7.8%	6.0%	11.0%	30.0%	28.5%	12.0%		
Overall (PG)									4.94	1.40

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

A moderate positive performance growth is observed among majority of manufacturing SMEs (33.5% = SWA, 26.3% = A, and 13.3% = SA), while a small proportion of the sample have not witnessed growth in their performance (7% = SWD, 5.8% = D, and 3.8% = SD). However, performance growth is not a relatively common term experienced by a small section of the sample (% = 10.5) are not aware

of the positive growth in the performance of the enterprise. The weighted average score of 4.96 indicates that there is a low to moderate growth in the growth of the performance among manufacturing SMEs in Yemen.

There is an improvement in the customer satisfaction level among the customers of majority of manufacturing SMEs (31.3% = SWA, 27.5% = A, and 14% = SA), while a very small section of the sample (4.8% = SWD, 6% = D, and 4.8% = SD) have failed to provide satisfaction to their customers. A relatively small section of the sample (11.8% = N) exhibited a neutral point of view regarding the improvement on their customer satisfaction. The weighted average score of 4.97 indicates that there is a low to moderate level of increase in the satisfaction levels among customers of manufacturing SMEs in Yemen.

The majority of enterprises reported that the number of their permanent employees have increased in the recent years (30% = SWA, 28.5% = A, and 12% = SA) while no increase in the number of employees is observed by a small portion of the sample (6% = SWD, 7.8% = D, and 4.8% = SD). A relatively small section of the sample (11% = N) are unaware of the relevance of increasing the number of permanent employees to their business performance with respect to their employment structure. The weighted average score of 4.87 indicates that there is a low increase in the permanent employment among manufacturing SMEs in Yemen.

It can be concluded from an overall weighted average score of 4.94 that the level of performance growth among manufacturing SMEs in Yemen is relatively low (Table 4-16).

4.4.2 Performance improvement during the last five years (PI)

Table 4-17 presents the descriptive analysis of the responses related to the improvement in performance during the last five years among manufacturing SMEs.

Table 4-17: Descriptive statistics - Performance during the last five years.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Number of new customers has increased.	F	19	20	29	41	110	119	62	5.02	1.59
	%	4.8%	5.0%	7.3%	10.3%	27.5%	29.8%	15.5%		
2-Sales to new and existing customers has increased.	F	32	27	14	29	81	148	69	5.05	1.78
	%	8.0%	6.8%	3.5%	7.3%	20.3%	37.0%	17.3%		
3-The performance in general has improved during the last five years.	F	15	33	18	36	95	136	67	5.10	1.62
	%	3.8%	8.3%	4.5%	9.0%	23.8%	34.0%	16.8%		
Overall (PI)									5.06	1.45

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

An increased customer base realized by majority of manufacturing SMEs in the last five years (27.5% = SWA, 29.8% = A, and 15.5% = SA), while no increase is observed by a small section of the sample (7.3% = SWD, 5% = D, and 4.8% = SD), another relatively small proportion of the sample (10.3% = N) are unaware of the increase/decrease, this may be also true due to poor information systems to evaluate their performance improvement. A weighted average score of 5.02 indicates that there is a relatively low increase in customer base among manufacturing enterprises in Yemen.

Similarly, an increase in the sales to new and existing customer is realized by majority of manufacturing SMEs (20.3% = SWA, 37% = A, and 17.3% = SA), while

no such increase is experienced by a small section of the sample (3.5% = SWD, 6.8% = D, and 8% = SD). However, a relatively small portion of the sample (7.3% = N) ignore the relevance of the increase/decrease in sales to their new and existing customer towards performance improvement. A weighted average score of 5.05 indicates that there is a low level of increase in the sales from their new customers as against their existing customers of manufacturing enterprises in Yemen.

Majority of manufacturing SMEs in Yemen have realized/reported an improvement in the general performance context (23.8% = SWA, 34% = A, and 16.8% = SA), while no such achievement has been observed among a small percentage of the sample (4.5% = SWD, 8.3% = D, and 3.8% = SD), and another relatively small section of the sample (9% = N) are found to be unaware of the importance of achieving improvement in their general performance. A weighted average score of 5.10 indicates that there is has been a low improvement reported in the general performance among manufacturing SMEs in Yemen.

It can be concluded with an overall weighted average score of 5.06 that not much improvement has been witnessed by the manufacturing enterprises in Yemen during the last five years of the study period (Table 4-17).

4.4.3 Internal performance of SMEs (IP)

Table 4-18 presents the descriptive analysis of the responses relating to the internal performance of manufacturing SMEs.

Table 4-18: Descriptive statistics - Internal performance of SMEs.

Statements	F	SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Technology for new product development has improved.	%	5.5%	5.5%	6.0%	9.3%	24.8%	30.5%	18.5%	5.08	1.66

2-Customer satisfaction has improved regarding techniques and processes.	F	17	27	21	48	94	121	72		
	%	4.3%	6.8%	5.3%	12.0%	23.5%	30.3%	18.0%	5.07	1.63
3-Defective product rate have reduced.	F	17	13	35	30	110	130	65		
	%	4.3%	3.3%	8.8%	7.5%	27.5%	32.5%	16.3%	5.13	1.54
Ratio of 4-performance in general has improved in the company.	F	17	25	27	36	113	127	55		
	%	4.3%	6.3%	6.8%	9.0%	28.3%	31.8%	13.8%	5.01	1.57
Overall (IP)									5.07	1.39

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

An improvement in the technology used for product development is witnessed among majority of Manufacturing SMEs in Yemen (27.8% = SWA, 30.5% = A, and 18.5% = SA), while no such improvisations are witnessed among a small proportion of the sample (6% = SWD, 5.5% = D, and 5.5% = SD), and another relatively small portion of the sample (% = N) are found to be unaware of the relevance of improving the technology so as to realize process/performance improvement. It can be concluded with a weighted average score of 5.08 that there is a low level of technology improvement has been observed among manufacturing SMEs in Yemen.

Customer satisfaction with respect to techniques and process has improved among majority of manufacturing enterprises (23.5% = SWA, 30.3% = A, and 18% = SA), while no such improvement is observed by a small section of the sample (5.3% = SWD, 6.8% = D, and 4.3% = SD), another relatively small proportion of the sample (12% = N) do not appreciate the role of improved customer satisfaction through appropriate techniques and processes, and thereby realizing the improvement of the enterprise's performance. It can be concluded with a weighted average score of 5.07 that there is a low level of betterment in customer satisfaction

levels with respect to the processes and techniques adopted by the manufacturing SMEs in Yemen.

Reduction in the defective products is experienced by majority of manufacturing SMEs (27.5% = SWA, 32.5% = A, and 16.3% = SA), while the same is not experienced by a small section of the sample (8.8% = SWD, 3.3% = D, and 4.3% = SD), and another relatively small portion of the sample (7.5% = N) are unaware of the relevance of reducing the defective products to improve the internal performance of the enterprises. It can be concluded with a weighted average score of 5.13 that there is a low level of reduction in the defect rate of the products among manufacturing SMEs in Yemen.

The internal performance in general is found to have improved among majority of the sampled SMEs (28.3% = SWA, 31.8% = A, and 13.8% = SA), while no such improvement has been experienced by a small proportion of the sample (6.8% = SWD, 6.3% = D, and 4.3% = SD), and a relatively small section of the sample (9% = N) do not appreciate the relevance of enhancing internal performance so as to promote the enterprise's overall performance. It can be stated (with a weighted average score of 5.01) that there is a low level of improvement witnessed in the internal performance among manufacturing SMEs in Yemen.

With an overall weighted average of 5.07, it can also be concluded that there is a low level of improvement in the internal performance among manufacturing SMEs in Yemen (Table 4-18).

4.4.4 Learning growth and performance (LGP)

Table 4-19 presents the descriptive analysis of the responses relating to the learning growth and performance among manufacturing SMEs.

Table 4-19: Descriptive statistics - learning growth performance.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Employee happiness has been improved during the last five years.	F	25	15	26	48	115	108	63	4.97	1.62
	%	6.3%	3.8%	6.5%	12.0%	28.8%	27.0%	15.8%		
2-Gathering information about customers has improved.	F	22	18	25	45	119	117	54	4.97	1.58
	%	5.5%	4.5%	6.3%	11.3%	29.8%	29.3%	13.5%		
3-Employee turnover rate has reduced.	F	26	17	32	42	110	124	49	4.90	1.63
	%	6.5%	4.3%	8.0%	10.5%	27.5%	31.0%	12.3%		
4-Number of employee suggestions have increased.	F	19	15	29	53	113	112	59	4.99	1.55
	%	4.8%	3.8%	7.3%	13.3%	28.3%	28.0%	14.8%		
Overall (LGP)									4.96	1.32

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

The level of employees' happiness and loyalty has seen a major improvement among majority of manufacturing SMEs (28.8% = SWA, 27% = A, and 15.8% = SA), while a small section of the sample (6.5% = SWD, 3.8% = D, and 6.3% = SD) have not witnessed such improvement. A relatively small portion of the sample (12% = N) are unaware of the importance of improving employees' loyalty and their happiness for promoting and upgrading their performance as well as the performance of the enterprise. A weighted average score of 4.97 indicates that there is a very low level of improvement in employee loyalty and their happiness is appreciated by manufacturing SMEs in Yemen.

Maintaining information about their customers has improved among majority of manufacturing SMEs (29.8% = SWA, 29.3% = A, and 13.5% = SA), while no such improvement is experienced by a small section of the sample (6.3% = SWD, 4.5% = D, and 5.5% = SD). A relatively small portion of the sample (11.3% = N) are

found to be unaware of the importance of maintaining customers information, for promoting the performance of the enterprise. It can be concluded with a weighted average score of 4.97 that there is a very low level of improvement is found in the customers information maintained for realizing optimal performance among manufacturing SMEs in Yemen.

A reduction in the rate of employee turnover has been experienced by majority of manufacturing SMEs (27.5% = SWA, 31% = A, and 12.3% = SA) while the same has not been experienced by another small section in the sample (8% = SWD, 4.3% = D, and 6.5% = SD). A relatively small section of the sample (10.5% = N) are unaware of the importance of reducing the rate of employee turnover so as to upgrade the performance levels of the enterprise. It can be concluded with a weighted average score of 4.90 that there is a very low level of reduction in employee turnover symbolizing failure on the part of the manufacturing SMEs in Yemen to sustain their competency/manpower.

There is an improvement in employees' suggestions among majority of manufacturing SMEs in Yemen indication of higher degree of employee engagement (28.3% = SWA, 28% = A, and 14.8% = SA), while no such improvement is found among a small proportion of the sample (7.3% = SWD, 3.8% = D, and 4.8% = SD), and another relatively small proportion of the sample (13.3% = N) are unaware of the importance of paying sufficient heed to the suggestions made by the employees in bettering their performance. A weighted average score of $4.99 \approx 5.00$ indicates that there is little improvement in employees' suggestions/engagement among manufacturing SMEs in Yemen exhibiting that the enterprises are in a position to realize prolific opportunities moderately.

It can be concluded with an overall weighted average score of 4.96 that there is a low level of learning growth performance among manufacturing SMEs in an underdeveloped economy like Yemen (Table 4-19).

4.5 *Mediating and moderating variables:*

This section presents the descriptive analysis of the responses relating to the mediating and moderating variables used in the research model; which are, organizational learning, adopting information technology in decision making, traditional decision making practices, entrepreneurial competencies, and the willingness and tendency of managers towards further education and training in management and entrepreneurship.

4.5.1 **Organizational learning (OL)**

OL has been described as a diverse field that involves many other fields such as business management, sociology, psychology etc. therefore, it is a process of developing, retaining and transforming knowledge in an organization (Chuah & Law, 2020). Table 4-20 presents the descriptive analysis of the responses related to organizational learning among manufacturing SMEs.

Table 4-20: Descriptive statistics - organizational learning.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Ability to learn is the key improvement	F	9	19	17	26	95	127	107	5.47	1.48
	%	2.3%	4.8%	4.3%	6.5%	23.8%	31.8%	26.8%		
2-Once we quit learning we endanger our future	F	12	21	14	30	106	123	94	5.36	1.51
	%	3.0%	5.3%	3.5%	7.5%	26.5%	30.8%	23.5%		
	F	10	20	14	22	118	129	87	5.38	1.45

3-Employee learning is an investment, not an expense	%	2.5%	5.0%	3.5%	5.5%	29.5%	32.3%	21.8%		
4-The company encourages interaction of people (employees) with the external environment	F	14	23	16	27	119	134	67	5.21	1.51
	%	3.5%	5.8%	4.0%	6.8%	29.8%	33.5%	16.8%		
5-We encourage employees to communicate	F	12	21	16	37	98	141	75	5.28	1.50
	%	3.0%	5.3%	4.0%	9.3%	24.5%	35.3%	18.8%		
Overall (OL)									5.34	1.15

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

The ability to learn is conceived as the key for improvement among the majority of manufacturing SMEs in Yemen (23.8% = SWA, 31.8% = A, and 26.8% = SA), while a small section of the sample (4.3% = SWD, 5.3% = D, and 3% = SD) believe that the ability to learn does not necessarily contribute to the improvement of organizational learning. A relatively small portion of the sample (6.5% = N) are unaware of the relevance of their ability to create environment for organizational learning. The weighted average mean score of 5.49 indicates the consideration of the ability to learn as a key determinant of improvement is moderately practiced among manufacturing SMEs in Yemen.

Endangering the future of an organization begins by quitting learning and utilizing the learning opportunities according to the majority of manufacturing SMEs in Yemen (26.5% = SWA, 30.8% = A, and 23.5% = SA), while the same is not similarly considered by a small section of the sample (3.5% = SWD, 5.3% = D, and 3% = SD), another relatively small section of the sample (7.5% = N) are unaware of the relevance of providing learning opportunity to the bright future of individuals/enterprises. With a weighted average score of 5.36, it can be concluded

that it is moderately believed by the Yemeni SMEs that learning is the key factor for creating brighter future/prospect for both individuals and enterprises.

Creating awareness for employees learning is considered an investment rather than a cost by majority of the organizations or enterprises (29.5% = SWA, 32.3% = A, and 21.8% = SA), while it is considered a cost rather than an investment by a small portion of the sample (3.5% = SWD, 5% = D, and 2.5% = SD), another relatively small proportion of the sample (5.5% = N) are unaware of the importance of employee learning to their competency building. It is concluded with a weighted average score of 5.38 that it is moderately appreciated by SMEs that employee training is considered an investment rather than a cost.

Encouraging and promoting interaction of employees with their external environment is a common practice among manufacturing SMEs in Yemen (29.8% = SWA, 33.5% = A, and 16.8% = SA), while it is not encouraged by a small section of the sample (4% = SWD, 5.8% = D, and 3.5% = SD). A relatively small portion of the sample (6.8% = N) do not appreciate the importance of interaction of employees with their external environment for improving organizational learning opportunities. The weighted average score of 5.21 unveils that the practice of encouraging the interaction of employees with the external environment is moderately appreciated by SMEs in Yemen.

Encouraging the communication among employees promotes organizational learning as per majority of the manufacturing SMEs (24.5% = SWA, 35.3% = A, and 18.8% = SA), while the same is not considered a key factor according to a small section of the sample (4% = SWD, 5.3% = D, and 3% = SD). A relatively small proportion of the sample (9.3% = N) considers communication among employees irrelevant to realize intended levels of organizational learning. With a weighted

average score of 5.28, it can be concluded that employee communication is believed to be of moderate importance for organizational learning.

The overall weighted average score of 5.34 leads to the conclusion that organizational learning is moderately appreciated among manufacturing SMEs in Yemen (Table 4-20).

4.5.2 Traditional decision making practices (TDMPs)

Traditional decision making is the non-commitment to the scientific decision making rules, practices and steps to ensure making sound, contributory and effective decisions that leads to enhancing the performance of an organization. Table 4-21 presents the descriptive analysis of the responses relating to the adoption of traditional decision making practices among managers/owners of manufacturing SMEs.

Table 4-21: Descriptive statistics - traditional decision making.

Statements		SD	D	SWD	N	SWA	A	SA	Mean
1-When I have to make a decision I wait for a long time before starting to think about it.	F	35	37	73	52	82	69	52	4.31
	%	8.8%	9.3%	18.3%	13.0%	20.5%	17.3%	13.0%	
2-When I am convinced about the alternative, I don't have to convince others.	F	39	44	62	63	80	70	42	4.20
	%	9.8%	11.0%	15.5%	15.8%	20.0%	17.5%	10.5%	
3-If the situation is vague, I risk and make a decision based on what I could know.	F	28	37	59	61	98	79	38	4.38
	%	7.0%	9.3%	14.8%	15.3%	24.5%	19.8%	9.5%	
4-If the decision can be avoided, I ignore it.	F	20	35	29	42	112	114	48	4.81
	%	5.0%	8.8%	7.3%	10.5%	28.0%	28.5%	12.0%	
Overall (TDMPs)									4.43

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A =

Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Taking more time and indulging in complex decision process is a common practice among a moderate section of the sample (20.5% = SWA, 17.3% = A, and 13% = SA), while it is not adopted by a relatively moderate section of the sample (18.3% = SWD, 9.3% = D, and 8.8% = SD). A small portion of the sample (13% = N) are unaware of the relationship between long time taken for decisions and its efficiency. The weighted average score of 4.31 indicates that there is a low level of appreciation when it comes to time taken and efficiency of decisions by sampled SME managers.

Being more convinced of a decision rather than convincing the team members is commonly believed by a moderate portion of the sample (20% = SWA, 17.5% = A, and 10.5% = SA), while the same is not followed by another moderate portion of the sample (15.5% = SWD, 11% = D, and 9.8% = SD). A small percentage of the sample (15.8% = N) do not appreciate and find it relevant to be convinced with the decision for ensuring its efficiency to deliver the intended objectives. A weighted average score of 4.20 indicates that there is a low extent of adherence when it comes to consulting the decision with the team members.

Taking a little risk in making decision in a vague situation is a common practice among a moderate section of the sample (24.5% = SWA, 19.8% = A, and 9.5% = SA), while such practice is not adopted by a relatively small section of the sample (14.8% = SWD, 9.3% = D, and 7% = SD). A small portion of the sample (15.3% = N) do not appreciate the relevance of finding more information for decision making in a vague situation to ensure the decisions are effective. A weighted average mean score of 4.38 indicates that there is a low extent of exploring information for ensuring better decisions are made in a vague situation.

The possibility of avoiding a decision whenever it is possible is moderately common among managers of manufacturing SMEs (28% = SWA, 28.5% = A, and 12% = SA), while it is never avoided by to a small section of the sample (7.3% = SWD, 8.8% = D, and 5% = SD). A relatively small proportion of the sample (10.5% = N) are unaware of any relevance of avoiding a decision for escalating and best possible results from the decisions already made by the enterprise. A weighted average mean score of $4.81 \approx 5.00$ unveils that avoiding a decision wherever possible is moderately common among SMEs in Yemen as they believe that decisions should be rational rather than being situational.

It can be concluded with an overall weighted average score of 4.43 that traditional decision making is less followed by a moderate group of sampled manufacturing SMEs in an underdeveloped economy like Yemen (Table 4-21).

4.5.3 Information technology systems in decision making (ITinDM)

ITinDM is the adoption of information technology systems to facilitate the decision making process and ensure that the decision made are not only based on experience but on predictive methods. Table 4-22 presents the descriptive analysis of the responses relating to information technology systems adoption in the decision making process among manufacturing SMEs.

Table 4-22: Descriptive statistics - Information technology in decision making.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-Information systems are used for the purpose of DM	F	24	23	12	40	116	137	48	5.01	1.59
	%	6.0%	5.8%	3.0%	10.0%	29.0%	34.3%	12.0%		
2-The company relies on	F	17	30	17	46	98	127	65	5.05	1.62

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
information system to make decisions	%	4.3%	7.5%	4.3%	11.5%	24.5%	31.8%	16.3%		
3-Information systems impact the process of decision making	F	16	30	21	48	113	118	54	4.96	1.58
	%	4.0%	7.5%	5.3%	12.0%	28.3%	29.5%	13.5%		
4-Information system satisfy the need of management to make proper decisions.	F	21	22	17	43	108	128	61	5.06	1.60
	%	5.3%	5.5%	4.3%	10.8%	27.0%	32.0%	15.3%		
5-Information systems help the company improve the decision making process	F	20	20	15	40	95	137	73	5.18	1.60
	%	5.0%	5.0%	3.8%	10.0%	23.8%	34.3%	18.3%		
Overall (ITinDM)									5.051	1.335

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Adopting information system in the process of decision making is commonly practiced and considered critical/essential among manufacturing enterprises in Yemen (29% = SWA, 34.3% = A, and 12% = SA), while the same is not considered useful by a small portion of the sample (3% = SWD, 5.8% = D, and 6% = SD). A relatively small section of the sample (10% = N) are found to be unaware of the benefits using information systems can offer to the decision making. The weighted average score of 5.01 indicates that there is a moderate level of appreciation for adopting information systems in the decision making process by manufacturing SMEs in Yemen.

Looking at the relevance of contemporary information relying on information systems during the making decision process is commonly practiced by the majority of manufacturing SMEs in Yemen (24.5% = SWA, 31.8% = A, and 16.3% = SA), while information systems are not considered as a useful tool to rely on according

to a small section of the sample (4.3% = SWD, 7.5% = D, and 4.3% = SD). A relatively small portion of the sample (11.5% = N) are unaware of the importance/benefit from adopting information systems in the process of decision making. The weighted average score of 5.05 unveils that there is a low to moderate extent of reliance on information systems in the process of decision making among manufacturing SMEs.

The process of decision making is positively impacted by information system among manufacturing SMEs (28.3% = SWA, 29.5% = A, and 13.5% = SA), while no improvement is realized by using information systems according to a small section of the sample (5.3% = SWD, 7.5% = D, and 4% = SD). A relatively small section of the sample (12% = N) ignores the potential benefits that could be obtained by using information systems in the decision making process. The weighted average score of $4.96 \approx 5.00$ unveils that there is a low to moderate level of appreciation considering the positive impact information systems can bring into the decision making practices of manufacturing SMEs in Yemen.

The use of information systems in the decision making practice is found satisfactory according to majority of manufacturing SMEs in Yemen (27% = SWA, 32% = A, and 15.3% = SA), while they are found to be not so satisfactory according to a small portion of the sample (4.3% = SWD, 5.5% = D, and 5.3% = SD). A relatively small portion of the sample (10.8% = N) do not appreciate the importance of having information systems as a satisfying tool to promote the decisions and its efficiency among enterprises. The weighted average score of 5.06 indicates that information systems have proven to be somewhat satisfactory tool among SMEs either due to underutilization or due to lack of efficient information infrastructure.

An improvement is expected in the decision making process by adopting information systems according to a majority of manufacturing SMEs (23.8% = SWA, 34.3% = A, and 18.3% = SA), while it is also felt that no improvement can be achieved through information system by a small portion of the sample (3.8% = SWD, 5% = D, and 5% = SD). A relatively small section of the sample (% = 10) are unaware of the relevance of adopting information systems while they intend to improvise efficiency of the decision making process. The weighted average score of 5.18 indicates that there is a low to moderate consideration of achieving improvement in the decision making practices by adopting effective information system architecture.

It can also be concluded with an overall weighted average score of 5.05 that the practices related to adopting and utilizing information systems in the decision making practices is appreciated low to moderated level by the managers of manufacturing SMEs in Yemen (Table 4-22).

4.5.4 Entrepreneurial competencies (ECs)

ECs are the set of skills acquired or required among managers which enable them to effectively, successfully and efficiently run and manage their business activities to achieve competitive advantage. Table 4-23 presents the descriptive analysis of the responses related to entrepreneurial competencies among managers/owners of manufacturing SMEs.

Table 4-23: Descriptive statistics - Entrepreneurial competencies

Statements	F	SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-I dedicate my time and efforts to my assignments regardless of other conditions.	%	4.3%	4.5%	4.3%	10.8%	27.5%	29.8%	19.0%	5.18	1.55

2-I always learn from others and from working with others.	F	11	14	13	23	113	130	96		
	%	2.8%	3.5%	3.3%	5.8%	28.3%	32.5%	24.0%	5.47	1.42
3-I have the skills and abilities required for succeeding in entrepreneurship.	F	13	17	15	20	110	143	82		
	%	3.3%	4.3%	3.8%	5.0%	27.5%	35.8%	20.5%	5.39	1.46
4-I orient my plans fixed or flexible to fit the future of the company.	F	10	13	10	28	104	148	87		
	%	2.5%	3.3%	2.5%	7.0%	26.0%	37.0%	21.8%	5.49	1.37
5-I prefer being independent in my decisions and take their responsibility.	F	16	20	22	27	102	127	86		
	%	4.0%	5.0%	5.5%	6.8%	25.5%	31.8%	21.5%	5.26	1.58
Overall (ECs)									5.36	1.16

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

Dedicating the time and efforts for the sake of the assignments is a common practice among majority of SME managers (27.5% = SWA, 29.8% = A, and 19% = SA), while a small section of the sample (4.3% = SWD, 4.5% = D, and 4.3% = SD) ignore such dedication of time and efforts. A relatively small proportion of the sample (10.8% = N) are not aware of dedicating the effort and time and the successful accomplishment of assignments and tasks. The weighted average score of 5.18 indicates that there is a low to moderate level of dedication of time and efforts to the successful accomplishment of tasks and responsibilities among manufacturing SMEs.

The habit of learning from others and working with others is common among the majority of managers in manufacturing SMEs in Yemen (28.3% = SWA, 32.5% = A, and 24% = SA), while a small section of the sample (3.3% = SWD, 3.5% = D, and 2.8% = SD) are found lacking such habit of learning from others. A relatively small portion of the sample (5.8% = N) do not appreciate the relevance of learning from other and working with others to enrich their skills and thereby bettering the entrepreneurial performance of managers. The weighted average score of 5.47

unveils that inculcating the habit of learning from others while working with them has a moderate level of appreciation by the managers working with manufacturing SMEs of Yemen.

Possessing the entrepreneurial skills that help in succeeding in the SMEs sector is widely appreciated by majority of SME managers in Yemen (27.5% = SWA, 35.8% = A, and 20.5% = SA), while a small portion of the sample (3.8% = SWD, 4.3% = D, and 3.3% = SD) lack such skills in entrepreneurship. A relatively small percentage of the sample (5% = N) are unaware of the necessity of exploring the entrepreneurial skills within them so as to reap success in their entrepreneurial initiatives. The weighted average score of 5.39 indicates that there is a low to moderate possession of necessary entrepreneurial skills among the managers working with manufacturing SMEs in Yemen.

Adjusting the plans so as to be flexible with the requirement of the enterprises and redefining future prospects is common among majority of managers in manufacturing SMEs in Yemen (26% = SWA, 37% = A, and 21.8% = SA), while plans remain static among a small proportion of the sampled managers (2.5% = SWD, 3.3% = D, and 2.5% = SD). A relatively small portion of the sample (7% = N) considers the flexibility of the plans to meet the future requirements irrelevant. A weighted average score of 5.49 unveils that there is a low to moderate tendency to keep the plans flexible and moderate them to be in line with the changing requirements of the enterprise in future as well.

The preference of being independent in decision making is commonly observed among majority of the sampled managers (25.5% = SWA, 31.8% = A, and 21.5% = SA), while being independent is not a preference of a small section of the sample (5.5% = SWD, 5% = D, and 4% = SD), another relatively small portion of the

sample (6.8% = N) are unaware of the relevance of being independent of any influence or being biased while making a decision to evolve as a successful enterprise. The weighted average score of 5.26 unveils that being independent in making decisions receives a moderately appreciation by the managers of manufacturing SMEs in Yemen.

It can be concluded with an overall weighted average score of 5.36 that there is a low to moderate level of entrepreneurial intent to develop necessary skills among managers of manufacturing SMEs in an underdeveloped economy like Yemen (Table 4-23).

4.5.5 Willingness for further training and education (WFFTE)

WFFTE is the tendency of managers to seek further education/training with respect to management and entrepreneurship. Table 4-24 presents the descriptive analysis of the responses relating to the willingness and tendency of managers towards pursuing further education and getting trained in management and entrepreneurial skills.

Table 4-24: Descriptive statistics - willingness for further education and training in management and entrepreneurship.

Statements		SD	D	SWD	N	SWA	A	SA	Mean	S.D.
1-I feel that my education was not fully related to the requirement of my job.	F	19	19	16	38	106	114	88	5.22	1.60
	%	4.8%	4.8%	4.0%	9.5%	26.5%	28.5%	22.0%		
2-Extra courses in management and entrepreneurship will definitely help in shaping my skills.	F	11	18	17	29	107	117	101	5.40	1.50
	%	2.8%	4.5%	4.3%	7.3%	26.8%	29.3%	25.3%		
3-Relying on the formal education I received is not helpful for succeeding in my job.	F	16	29	17	34	94	119	91	5.21	1.65
	%	4.0%	7.3%	4.3%	8.5%	23.5%	29.8%	22.8%		
	F	15	25	25	41	82	122	90		

Statements	SD	D	SWD	N	SWA	A	SA	Mean	S.D.
4-Further entrepreneurial training will enhance my performance as a decision maker.	%	3.8%	6.3%	6.3%	10.3%	20.5%	30.5%	22.5%	
Overall (WFFTE)								5.25	1.24

Source: primary data.

Note: SD = Strongly Disagree, D = Disagree, SWD = Somewhat Disagree, N = Neutral, SWA = Somewhat Agree, A = Agree, SA = Strongly Agree, Mean = Weighted average mean, S.D. = Standard deviation.

It is widely believed that the field of operations is not fully related to management and entrepreneurship by majority of manufacturing SME managers (26.5% = SWA, 28.5% = A, and 22% = SA), while it is found much relevant by a small section of the sample (4% = SWD, 4.8% = D, and 4.8% = SD). A relatively small portion of the sample (9.5% = N) are unaware of the importance of having qualifications relevant to the field of management and entrepreneurship. The weighted average score of 5.22 indicates that there is a low level of relevance felt between education and qualification of managers to develop management and entrepreneurship architecture.

Extra courses relevant to management and entrepreneurship are supposed to rev up the skills among SME managers in Yemen (26.8% = SWA, 39.3% = A, and 25.3% = SA), while it is not much contributing according to a small section of the sample (4.3% = SWD, 4.5% = D, and 2.8% = SD). A relatively smaller percentage of the sample (7.3% = N) are unaware of what role extra courses in management and entrepreneurship can play with respect to further developing their skills and performance. The weighted average score of 5.40 unveils that it is widely believed that further courses in management and entrepreneurship will contribute to enhancing the performance of SME managers.

Relying on formal education alone does not help in creating entrepreneurial influencers according to the majority of the sampled managers (23.5% = SWA, 29.8% = A, and 22.8% = SA), while a small section of the sample (4.3% = SWD, 7.3% = D, and 4% = SD) believe that formal education would be good enough in serving all the future entrepreneur's needs. However, a relatively small portion of the sample (8.5% = N) are found unaware of the relevance of formal education and training in improving entrepreneurial competency among managers. The weighted average score of 5.21 indicates that formal education alone fails to support the objectives of future entrepreneurs' needs and associated requirements.

Further entrepreneurial training is expected to play a role in developing the performance among majority of the sampled managers (20.5% = SWA, 30.5% = A, and 22.5% = SA), while it is not expected to contribute to the same according to another small proportion of the sample (6.3% = SWD, 6.3% = D, and 3.8% = SD). A relatively small portion of the sample (10.3% = N) are not aware of the improvement in entrepreneurial performance that can be realized by obtaining further training in the field of entrepreneurship. The weighted average score of 5.19 leads us to conclusion that assuming the improvement in performance through formal education is moderately appreciated by the managers of manufacturing SME in Yemen.

It can be concluded from the overall weighted average score of 5.25 that there is a low to moderate tendency among managers of SMEs towards further education and training in management and entrepreneurship in an underdeveloped economy like Yemen (Table 4-24).

To conclude this, the study hypothesized a statement that the level of adopting decision making practices among manufacturing SMEs in Yemen is moderate;

However, results further unveil that the level of adopting such practices is found to be low in some practices and sometimes moderate in others. Hence, the first hypothesis that states, “*Decision making practices are moderately adopted among managers and owners of manufacturing SMEs in Yemen*” is considered partially supported.

4.6 Analysis of variance

This section investigates the homogeneity in the responses among the respondents; in other words, the aim is to identify the statistically significant difference in adopting decision making practices as well as the performance of manufacturing SMEs in Yemen based on their demographic characteristics.

4.6.1 Differences in DMPs based on enterprises’ characteristics

The following table (Table 4-25) exhibits the results pertaining to the significant differences in decision making practices among manufacturing SMEs based on their characteristics. As shown in the table, the mean of adopting decision making practices is almost similar (5.3, 5.2, and 5.1) among enterprises established during the last three decades. However, One-Way ANOVA is applied to test if there is a significant difference existing in the three categories. The result shows that there is no significant difference detected in adopting DMPs among enterprises established during each decade of the last three decades.

The table also shows that there is a significant difference in adopting decision making practices among manufacturing SMEs when they are classified according to the scope of their operations as the p-value of one-way ANOVA is 0.001. Further, the Post Hoc is used to test/investigate the difference, and it indicates that the

difference belongs to the domestic scope of operation, which further implies that the enterprises functioning in domestic environment differ from the one functioning in a national environment with respect to nature of DMPs followed or adopted by them.

Evaluating enterprises based on the manufacturing field, the result shows that there is no significant difference in adopting DMPs among manufacturing enterprises in all the four classes of business involved in the study. Since the p-value of One Way ANOVA is found to be higher than 0.05, it can be concluded that enterprises who are into in food processing, plastic, appliances and construction do not follow any different DMP which is conducive to their business, in other words, the nature of the DMPs is the same.

In the same way, the results also show that the number of employees among enterprises does not play a significant role in adopting DMPs among manufacturing SMEs, which indicates that manufacturing SMEs in Yemen adopt standardized DMPs irrespective of being a micro, small or medium enterprise ($p > 0.05$).

Table 4-25: Differences in DMPs based on enterprises' characteristics

	Variable	N	Mean	F	p
Establishment year	1991 - 2000	101	5.3351	0.668	0.514
	2001 - 2010	182	5.2955		
	2011 - 2020	117	5.1888		
	Total	400	5.2743		
Scope of operation	Domestic	354	5.4009	28.896	0.000
	National	26	4.2360		
	International	20	4.3818		
Manufacturing field	Food processing	115	5.2970	0.764	0.515
	Plastic	57	5.1081		
	Appliances	108	5.3489		
	Construction and others	120	5.2642		
Employees count	Up to 20 employees	116	5.3223	0.316	0.814
	Up to 40 employees	51	5.2224		
	Up to 60 employees	103	5.3133		

Variable	N	Mean	F	p
More than 60 employees	130	5.2208		

Source: primary data.

Note: H_0 is supported when $p > 0.05$, and is unsupported when $P < 0.05$. Testing hypothesis is at 5% significance level.

It is then concluded, based on the above results, that adopting DMPs among manufacturing SMEs differs when enterprises are evaluated according to the scope of operation while it is the same when they are evaluated in terms of other demographic characteristics.

4.6.2 Differences in DMPs based on managers' characteristics:

The table below (Table 4-26) similarly shows the differences in adopting DMPs among manufacturing enterprises when they are evaluated against the attributes/characteristics of their managers/owners. As shown in the table, it can be observed that ownership plays a significant role in adopting DMPs among manufacturing SMEs in Yemen. Even though no remarkable difference is observed, the mean score differs for the benefit of managers/owners who own some of the manufacturing enterprises and such adopted difference is statistically significant.

In the same way, the age of managers/owners of enterprises also plays a significant role in adopting decision making practices; where the p-value of applying one-way ANOVA is found to be less than 0.05, it can be stated that there is a statistically significant difference in adopting DMPs among enterprises when they are evaluated based on the age of their managers. It is also worth mentioning that the Post Hoc test unveils a difference existing between managers who are less than 30 years old, between 31 and 40 years; and between 41 and 50 years old.

Enterprises when investigated based on the qualification of managers to identify the differences in DMP adopted, the result of applying one-way ANOVA indicates that there is no significant difference in adopting DMPS among manufacturing SMEs when they are evaluated by the qualification of their managers.

However, when the same is evaluated according to the position of the managers, the results show that there is a significant difference in adopting decision making practices among manufacturing SMEs, as the p-value of one-way ANOVA is less than 0.05. According to the Post Hoc test, such difference is observed to be relevant to general managers and department managers in manufacturing enterprises.

On the contrary, no significant difference is found when investigating the adoption of DMPs among enterprises as an influence of the experience of managers/owners; as the p-value of One Way ANOVA is found to be higher than 0.05, it can be stated that DMPs observed among manufacturing SME managers/owners do not differ based on their experience/exposure to their business environment.

It can be concluded that manufacturing SMEs in Yemen adopt similar DMPs when evaluating them based on their qualification and experience, while their practices differ certainly when it is based on their ownership, age, and position.

Table 4-26: Differences in DMPs based on managers' characteristics

	Variable	N	Mean	t	F	p
Ownership	Yes	146	5.4281	2.486	-	0.007
	No	254	5.1858			
Age	Less than 30 years	35	4.874	-	2.692	0.046
	31 - 40 years	167	5.3786			
	41 - 50 years	178	5.2706			
	More than 50 years	20	5.1364			
Qualification	Secondary Education	6	5.6402	-	0.802	0.493
	Diploma (Mini Degree)	110	5.339			

	Variable	N	Mean	t	F	p
Position	Batchelor degree	233	5.2661			
	Postgraduate	51	5.1288			
	General manager	144	5.4399			
	Department Manager	61	4.9564	-	3.787	0.011
	Executive manager	48	5.3546			
	Administrative supervisor	147	5.2177			
Experience	One to five years	149	5.2462			
	Five to ten years	193	5.2957	-	0.105	0.901
	More than ten years	58	5.2751			

Source: primary data.

Note: H_0 is supported when $p > 0.05$, and is unsupported when $P < 0.05$. Testing hypothesis is at 5% significance level.

This partially supports the second hypothesis - “*There are no significant differences in decision making practices adopted and the performance among managers of Yemeni manufacturing SMEs when they are evaluated according to the demographics of managers and SMEs*”, since no significant difference is observed in adopting decision making practices among manufacturing SMEs when evaluation is based on all the demographic characteristics of managers as well as the enterprises.

4.6.3 Differences in SMEs performance based on enterprises’ characteristics

The table below (Table 4-27) exhibits the results of investigating the difference in the performance of manufacturing SMEs when they are evaluated according to the enterprises’ characteristics. As shown in the table, the results show that there is no significant difference observed in the performance of manufacturing SMEs when they are evaluated based in period of establishment; which implies that whether the enterprises are old or new during the past decade, they do not have any significant difference observed in their performance.

On the other hand, the scope of operation is seen to play a significant role in the difference in the performance of manufacturing SMEs, as the p-value of applying one-way ANOVA is found to be less than 0.05, which indicates that the performance of manufacturing SMEs differs according to the differences in the scope of operation. Further, the Post Hoc test indicates that the difference is due to the performance of enterprises functioning in the domestic environment, which differs from the performance in the national and international environment.

When investigating the performance based on the field of manufacturing as well as the employee count, the results show that there is no significant difference in the performance of manufacturing SMEs when they are evaluated according to the field of manufacturing and the number of employees as the p-values of one way ANOVA are 0.21 and 0.96 respectively which indicates that the field of manufacturing and the number of employees do not have any statistically significantly influence on the performance of manufacturing SMEs.

Table 4-27: Differences in SMEs performance based on enterprises' characteristics

	Variable	N	Mean	F	p
Establishment year	1991 - 2000	101	5.0106	2.058	0.129
	2001 - 2010	182	5.1189		
	2011 - 2020	117	4.8297		
Scope of operation	Domestic	354	5.1576	27.194	0.000
	National	26	3.8984		
	International	20	3.7821		
Manufacturing field	Food processing	115	5.0422	1.511	0.211
	Plastic	57	4.8409		
	Appliances	108	5.1825		
	Construction and others	120	4.8940		
Employees count	Up to 20 employees	116	5.0222	0.091	0.965
	Up to 40 employees	51	5.0770		
	Up to 60 employees	103	4.9861		
	More than 60 employees	130	4.9824		

Source: primary data.

Note: H_0 is supported when $p > 0.05$, and is unsupported when $P < 0.05$. Testing hypothesis is at 5% significance level.

This leads to conclusion that when evaluating the performance of manufacturing SMEs in Yemen according to the enterprises' characteristics, only the scope of operation is found to influence in differentiating the performance among the different scopes of operations, while no difference in performance is observed based on the other characteristics; which are, year of establishment, manufacturing field, and the number of employees.

4.6.4 Differences in SMEs performance based on managers' characteristics

For further variance investigation, the following table (Table 4-28) exhibits the results of investigating the performance of manufacturing SMEs in terms of the characteristics of owners/managers. As shown in the table, nature of ownership plays a significant role in the performance of the enterprise, as the difference in the reported performance is statistically significant, we can conclude that the performance is slightly better when it is influenced by the nature of ownership. However, when the same is evaluated based on the experience of managers, the results show that there is no significant difference in the performance when impacted by the experience of managers; this means that the experience of managers does not play a significant role in determining the performance of the enterprises.

When evaluating the performance based on the qualification of managers, the results show that there is no significant difference reported in the performance when based on their qualification, which indicates that the performance reported is independent of the qualification of the managers be it the one with secondary education, diploma or postgraduation.

On the other hand, it is observed that the position at which the manager discharges his rule significantly influences the performance of manufacturing

SMEs. Different decisions are taken at different levels and each decision is directed towards a specific vision. The Post Hoc test indicates that the difference observed is between the categories of general managers and department managers.

Finally, when the performance is evaluated against the age of owners/managers, the results indicate that there is a significant difference in the performance of manufacturing SMEs; the Post Hoc test indicates that the difference is due to the category to which a manager is associated i.e. one who are less than 30 years, who are between 31 and 40, and between 41 and 50. This makes it obvious that over a period of time, managers become more proficient/efficient and that makes their decisions and actions rational and thereby enhance the performance of manufacturing SMEs.

Table 4-28: Differences in SMEs performance based on managers' characteristics

	Variable	N	Mean	t	F	p
Ownership	Yes	146	5.1404	1.681		0.047
	No	254	4.9303			
Experience	one to five years	149	4.9132	-	0.844	0.431
	five to ten years	193	5.0415			
	More than ten years	58	5.133			
Qualification	Secondary Education	6	4.6905	-	1.048	0.371
	Diploma (Mini Degree)	110	5.1708			
	Batchelor degree	233	4.9411			
	Postgraduate	51	4.9916			
Position	General manager	144	5.2267	-	3.638	0.013
	Department Manager	61	4.6569			
	Executive manager	48	5.0521			
Age	Administrative supervisor	147	4.9223	-	4.3	0.005
	Less than 30 years	35	4.3204			
	31 - 40 years	167	5.0804			
	41 - 50 years	178	5.055			
	More than 50 years	20	5.1679			

Source: primary data.

Note: H_0 is supported when $p > 0.05$, and is unsupported when $P < 0.05$. Testing hypothesis is at 5% significance level.

This leads us to the conclusion that the performance of manufacturing SMEs in Yemen is not influenced by the experience and qualification rather significantly influenced by the nature of stake or ownership, position and the age of managers.

This partially supports the second hypothesis - *“There are no significant differences in adopting decision making practices and the performance among managers of Yemeni manufacturing SMEs when they are evaluated according to the demographics of managers and SMEs”*; since no significant difference is observed in adopting DMPs among manufacturing SMEs when evaluated in terms of all the demographic characteristics of managers as well as the enterprises.

4.7 Assessment of the measurement model (Confirmatory Factor Analysis)

4.7.1 Assessment of the zero-order model

This section presents the procedures followed to assess and validate the measurement model where every construct is evaluated for the purpose of ensuring its reliability and validity to measure why it was used and what is measured in the research model.

4.7.1.1 Convergent reliability:

As mentioned in the methodology chapter, the purpose of measuring convergent reliability is to ensure that the constructs used in the model are reliable and valid, so as to measure the variables used in the study. It is reflected on the fact that respondents are responding to the statements in each construct in a consistent manner and fulfil the uni-dimensionality which is the core objective behind using

Likert scale measurement. Achieving internal consistency of factors ensures that convergent validity is established in the model. The most commonly used measures for convergent reliability are Cronbach's Alpha, McDonald's Omega (MO), factor loadings, Composite Reliability, Average Variance Extracted (AVE) and Dillon-Goldstein's rho (rhoA). The tables below (Tables 4-29, 4-30, and 4-31) present the results of investigating the reliability measures for the purpose of evaluating the measurement model. The variables/constructs are divided into three categories, independent variables, dependent variables, and the third categories consists of the mediating and moderating variables.

4.7.1.1.1 Independent variables:

The table below (Table 4-29) exhibits the values relating to the reliability measures of the independent variables (decision making practices). The first measure used in assessing the reliability is factor loadings. The loadings of factors unveil the contribution of each statement to its concerned construct. The minimum limit of factor loading should be 0.7 or more, particularly 0.708, where it can describe better variance extracted of each construct; in other words, the low factor loading exhibits the presence of lower variance extracted rendering the construct to be unreliable, due to lower variance explained by the statements. In the table below, all the factor loadings in the independent variables are found to be in the range between 0.757 and 0.899, which indicates that all the statements measuring the independent variables are satisfactorily contributing to their concerned constructs. The other measures for convergent reliability are Cronbach's Alpha, McDonald's Omega (MO), Composite Reliability (CR) and Dillon-Goldstein's rho (rhoA). These measures ensure the internal consistency of the variables. The minimum threshold

of the values of such measures are 0.7 where values beyond 0.95 is considered undesirable. In the table below, the values of Cronbach's Alpha for independent variables are ranging between 0.808 and 0.895; the values of McDonald's Omega are ranging between 0.807 and 0.897; the values of Composite Reliability are ranging between 0.887 and 0.927 and the values of Dillon-Goldstein's rho are ranging between 0.808 and 0.896. This indicates that the internal consistency among the independent variables is satisfactorily established as all their values are found higher than 0.70. The last measure of the convergent reliability is the Average Variance Extracted (AVE) where the minimum value should be higher than 0.50, as the lower value makes the construct unreliable. In the table below, the values of AVE are ranging between 0.669 and 0.761, which indicates that they are all satisfactory as they are found to be higher than 0.50.

All these features lead to conclusion that the independent variables are found reliable to measure what they were used to measure in the study, hence convergent reliability in the independent variables is established. The same is illustrated a measurement model which can be found in Appendix 02.

Table 4-29: Reliability measures of the independent variables.

Construct	Items	Loading	Alpha	MO	CR	AVE	rhoA
Diagnosing the problem	Item1	0.810	0.838	0.841	0.892	0.675	0.838
	Item2	0.855					
	Item3	0.860					
	Item4	0.757					
Developing alternatives	Item1	0.775	0.847	0.852	0.897	0.687	0.850
	Item2	0.818					
	Item3	0.877					
	Item4	0.841					
Evaluating alternatives	Item1	0.821	0.856	0.859	0.903	0.700	0.858
	Item2	0.859					
	Item3	0.881					
	Item4	0.782					
Choosing the appropriate alternative	Item1	0.804	0.872	0.872	0.912	0.723	0.874
	Item2	0.847					
	Item3	0.894					

Construct	Items	Loading	Alpha	MO	CR	AVE	rhoA
Implementing alternative	Item4	0.852	0.860	0.859	0.905	0.704	0.860
	Item1	0.841					
	Item2	0.866					
	Item3	0.848					
	Item4	0.801					
Monitoring decision effectiveness	Item1	0.799	0.849	0.849	0.898	0.688	0.849
	Item2	0.863					
	Item3	0.845					
	Item4	0.810					
Evaluating the current performance	Item1	0.872	0.895	0.897	0.927	0.761	0.896
	Item2	0.899					
	Item3	0.885					
	Item4	0.831					
Evaluating managerial performance	Item1	0.758	0.838	0.84	0.892	0.674	0.843
	Item2	0.852					
	Item3	0.849					
	Item4	0.823					
Evaluating managers' performance	Item1	0.825	0.853	0.853	0.901	0.694	0.853
	Item2	0.841					
	Item3	0.848					
	Item4	0.817					
Strategic analysis (internal resources)	Item1	0.818	0.808	0.807	0.887	0.723	0.808
	Item2	0.880					
	Item3	0.852					
Strategic analysis (SWOT)	Item1	0.785	0.876	0.877	0.91	0.669	0.877
	Item2	0.829					
	Item3	0.840					
	Item4	0.828					
	Item5	0.807					

Source: primary data.

Note: Loadings = Factors loading (> 0.708), Alpha = Cronbach's Alpha (> 0.70), MO = McDonald's Omega (> 0.70), CR = Composite reliability (> 0.70), rho = Dillon-Goldstein's rho (> 0.70), AVE = Average Variance Extracted (> 0.50).

4.7.1.1.2 Dependent variables:

Similarly, the same measures are assessed for the dependent variables where, (as shown in Table 4-30), the values of factor loadings for the dependent variables are ranging between 0.760 and 0.921; the values of Cronbach's Alpha are ranging between 0.840 and 0.894; the values of McDonald's Omega are ranging between 0.845 and 0.898; the values of Composite Reliability are ranging between 0.897 and 0.927 and the values of Dillon-Goldstein's rho are ranging between 0.845 and 0.896; this indicates that there is internal consistency among dependent variables and it is found satisfactory, as all the values of all the measures are found greater than 0.70.

Finally, the values of average variance extracted (AVE) of the dependent variables are ranging between 0.686 and 0.802, which also further indicate that the statements explain satisfactory variance in the dependent variables. This leads us to conclusion that convergent reliability is established among the dependent variables, implying that the dependent variables are reliable to measure what there were used to measure in this study. The same is illustrated a measurement model which can be found in Appendix 02.

Table 4-30: reliability measures of the dependent variables.

Construct	Items	Loading	Alpha	MO	CR	AVE	rhoA
Growth performance	Item1	0.890	0.877	0.879	0.924	0.802	0.877
	Item2	0.917					
	Item3	0.881					
Performance during last five years	Item1	0.797	0.840	0.855	0.904	0.760	0.845
	Item2	0.894					
	Item3	0.921					
Internal performance	Item1	0.876	0.894	0.895	0.927	0.760	0.896
	Item2	0.899					
	Item3	0.872					
	Item4	0.840					
Learning growth performance	Item1	0.829	0.847	0.845	0.897	0.686	0.847
	Item2	0.870					
	Item3	0.845					
	Item4	0.760					

Source: primary data.

Note: Loadings = Factors loading (> 0.708), Alpha = Cronbach's Alpha (> 0.70), MO = McDonald's Omega (> 0.70), CR = Composite reliability (> 0.70), rho = Dillion-Goldstein's rho (> 0.70), AVE = Average Variance Extracted (> 0.50).

4.7.1.1.3 Mediating and moderating variables:

The table below (Table 4-31) exhibits the results of investigating and measuring the reliability among the mediating and moderating variables. In the same way, the values of factor loadings for the mediating and moderating variables are ranging between 0.532 and 0.860; the values of Cronbach's Alpha for mediating and moderating variables are ranging between 0.736 and 0.893; the values of McDonald's Omega are ranging between 0.765 and 0.894; the values of Composite

Reliability are ranging between 0.819 and 0.922 and the values of Dillon-Goldstein's rho are ranging between 0.794 and 0.894. This indicates that the internal consistency among the mediating and moderating variables is found satisfactory as most of their values are found higher than 0.70. Even though three statements in three different variables (*traditional decision making style, entrepreneurial competencies of managers and willingness of managers for further management and entrepreneurship education) are found to have low loadings towards their concerned variables (0.532, 0.696, and 0.681 respectively), yet the measures of reliability such as composite reliability and average variance extracted are not impacted, therefore they are not nominated for deletion from the model.

As for average variance extracted, its values among mediating and moderating variables are ranging between 0.538 and 0.702, this indicates that statements in the mediating and moderating variables are explaining satisfactory variance in their concerned variables.

This leads us to the conclusion that convergent reliability is established among the mediating and moderating variables and found to be satisfactorily established, which further indicates that these variable are reliable to measure what there were used to measure in this study. The same is illustrated a measurement model which can be found in Appendix 02.

Table 4-31: Reliability measures of mediating and moderating variables.

Construct	Items	Loading	Alpha	MO	CR	AVE	rhoA
Organizational learning	Item1	0.712					
	Item2	0.804					
	Item3	0.803	0.832	0.835	0.882	0.600	0.834
	Item4	0.822					
	Item5	0.723					
	Item1	0.532*	0.736	0.765	0.819	0.538	0.830

Traditional Decision making	Item2	0.748					
	Item3	0.818					
	Item4	0.800					
Information systems in decision making	Item1	0.835					
	Item2	0.852					
	Item3	0.857	0.893	0.894	0.922	0.702	0.894
	Item4	0.852					
	Item5	0.790					
Entrepreneurial competencies	Item1	0.736					
	Item2	0.824					
	Item3	0.860	0.848	0.847	0.892	0.623	0.858
	Item4	0.820					
	Item5	0.696*					
Willingness for further education	Item1	0.681*					
	Item2	0.802					
	Item3	0.821	0.781	0.784	0.858	0.603	0.794
	Item4	0.794					

Source: primary data.

Note: Loadings = Factors loading (> 0.708), Alpha = Cronbach's Alpha (> 0.70), MO = McDonald's Omega (> 0.70), CR = Composite reliability (> 0.70), rho = Dillion-Goldstein's rho (> 0.70), AVE = Average Variance Extracted (> 0.50).

4.7.1.2 Discriminant validity:

The discriminant validity is another measure of construct reliability. The purpose of it is to ensure that each construct is independent from the other constructs, in other words, the respondents are able to distinguish answering questions in one construct from other constructs. As already explained earlier in the methodology chapter, discriminant validity is assessed through many criteria which include Fornell-Larcker's criteria, Heterotrait Monotrait criteria (HTMT), and the cross loadings of the statements to the variables.

Where the Fornell-Larcker's criteria states that the square roots of the average variance extracted from each construct must be greater than intra item correlations. In other words, the correlations across constructs in the research model must be lower than the values of average variance extracted from the concerned constructs; the HTMT criteria measures the similarity across the constructs (latent variables) where the values are preferred to be less than one or a threshold of 0.85 in some

practical research, so as to ensure the establishment of discriminant reliability. The cross-loading of statements on the latent variables are assessed to identify the extent of loading of each statement on each variable. Even though each statement is loaded on all latent variables, it must be loading the highest on its concerned latent variable, which otherwise the discriminant validity is violated.

4.7.1.2.1 Fornell-Larcker's criteria:

The table below (Table 4-32) exhibits the results of assessing the discriminant validity according to the Fornell-Larcker's criteria. As seen in the table, the values on the diagonal are the square root of the values of average variance extracted of each construct, while the values off the diagonal are the correlations across latent variables/constructs. The rule of thumb is that the values on the diagonal must be greater than the intra item correlations. For instance, the square root of the average variance extracted for the first variable (diagnosing the problem) is 0.822 and the correlations of this variable with all other variables are found to be less than the square root value of the AVE. The same thing holds good for all other variables, where the square root values of AVE is found to be greater than all the concerned corresponding values of correlations. This indicates that each construct is found independent from the other constructs. Further details of the statistics relating to comparing the square root of AVE with the relevant correlations are found in the table (Table 4-32) below.

Table 4-32: Discriminant validity - Fornell-Larcker's criteria.

#	Constructs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	DP	0.822																
2	DA	0.599	0.829															
3	EA	0.594	0.706	0.837														
4	CA	0.564	0.643	0.691	0.850													
5	IA	0.551	0.57	0.653	0.717	0.839												
6	MEA	0.509	0.599	0.617	0.636	0.742	0.830											
7	ECP	0.515	0.557	0.577	0.497	0.592	0.627	0.872										
8	EMP	0.556	0.527	0.515	0.533	0.582	0.591	0.672	0.821									
9	EMSP	0.589	0.500	0.490	0.493	0.528	0.583	0.596	0.625	0.833								
10	SAIR	0.641	0.567	0.602	0.648	0.605	0.573	0.507	0.510	0.528	0.850							
11	SASWOT	0.630	0.644	0.617	0.598	0.619	0.661	0.587	0.554	0.590	0.708	0.818						
12	OL	0.524	0.519	0.606	0.495	0.553	0.528	0.634	0.551	0.488	0.575	0.566	0.774					
13	TDMPs	0.353	0.270	0.288	0.289	0.287	0.278	0.358	0.311	0.302	0.367	0.351	0.433	0.733				
14	ITinDM	0.475	0.398	0.404	0.394	0.467	0.511	0.570	0.497	0.494	0.482	0.556	0.572	0.365	0.838			
15	ECs	0.485	0.521	0.571	0.571	0.542	0.503	0.555	0.538	0.444	0.526	0.510	0.618	0.388	0.435	0.789		
16	WFFTE	0.402	0.401	0.430	0.395	0.477	0.420	0.488	0.440	0.379	0.442	0.479	0.598	0.373	0.466	0.660	0.777	
17	SMEsP	0.580	0.571	0.585	0.633	0.661	0.633	0.578	0.613	0.582	0.549	0.615	0.564	0.390	0.535	0.605	0.494	0.872

Source: primary data.

Note: The standard is that the values of the square root of AVE (values the diagonal) must be higher than the correlations values (values of the diagonal).

Abbreviation	Full Form	Abbreviation	Full Form
DP	Diagnosing the problems	ECP	Evaluating current performance
DA	Developing alternatives	EMP	Evaluating managerial performance
EA	Evaluating Alternatives	EMSP	Evaluating Managers' performance
CA	Choosing Alternatives	SAIR	Strategic Analysis – Internal Resources
IA	Implementing the alternatives	SASWOT	Strategic Analysis – Strength, Weakness, Opportunities and Threats
MEA	Monitoring the effectiveness of the alternative	SMEsP	SMEs Performance

4.7.1.2.2 HTMT criteria:

HTMT criteria is applied to assess discriminant validity of the construct. The table below (Table 4-33) presents the statistics relating to the similarity among the constructs in the research model. The rule of thumb is that all the values should be less than 1, and more preferably, below 0.85. It is evidenced from the table below that, the similarity values across constructs are found to be below 0.850 which indicates the independency across the construct implying that discriminant validity is established, which symbolizes that the respondents have reacted differently to each construct based on its measurement according to the uni-dimensionality of measurement employed to measure the variables used for the study. Further statistics are revealed in the table below (Table 4-33)

Table 4-33: Discriminant validity - HTMT criteria.

#	Constructs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	DP																	
2	DA	0.709																
3	EA	0.699	0.827															
4	CA	0.659	0.747	0.800														
5	IA	0.649	0.665	0.761	0.829													
6	MEA	0.601	0.703	0.723	0.74	0.866												
7	ECP	0.594	0.639	0.658	0.563	0.675	0.718											
8	EMP	0.664	0.626	0.609	0.623	0.684	0.698	0.779										
9	EMSP	0.696	0.583	0.574	0.573	0.616	0.684	0.682	0.737									
10	SAIR	0.776	0.685	0.724	0.771	0.726	0.691	0.596	0.621	0.634								
11	SASWOT	0.732	0.748	0.711	0.683	0.712	0.765	0.662	0.645	0.679	0.837							
12	OL	0.625	0.611	0.715	0.577	0.649	0.622	0.730	0.657	0.576	0.699	0.654						
13	TDMPs	0.406	0.314	0.327	0.323	0.319	0.291	0.375	0.351	0.318	0.436	0.367	0.490					
14	ITinDM	0.547	0.454	0.461	0.446	0.532	0.584	0.636	0.570	0.563	0.567	0.628	0.653	0.381				
15	ECs	0.566	0.605	0.664	0.657	0.631	0.588	0.632	0.633	0.518	0.635	0.583	0.737	0.487	0.496			
16	WFFTE	0.487	0.486	0.517	0.471	0.577	0.509	0.577	0.542	0.459	0.548	0.572	0.738	0.473	0.556	0.82		
17	SMEsP	0.668	0.653	0.669	0.717	0.754	0.725	0.646	0.709	0.664	0.645	0.692	0.649	0.411	0.598	0.688	0.582	

Source: primary data.

Note: The standard is that all values of the similarities among constructs must not exceed one, or more preferably, must not exceed 0.85.

Abbreviation	Full Form	Abbreviation	Full Form
DP	Diagnosing the problems	ECP	Evaluating current performance
DA	Developing alternatives	EMP	Evaluating managerial performance
EA	Evaluating Alternatives	EMSP	Evaluating Managers' performance
CA	Choosing Alternatives	SAIR	Strategic Analysis – Internal Resources
IA	Implementing the alternatives	SASWOT	Strategic Analysis – Strength, Weakness, Opportunities and Threats
MEA	Monitoring the effectiveness of the alternative	SMEsP	SMEs Performance

4.7.1.2.3 Cross loadings:

The last measure to ensure the establishment of discriminant validity, is the cross loadings of each statement on all variables, as they show how a statement is loaded on one particular variable. The results show that statements in the research tool are found highly loaded on their concerned variables.

Since cross loadings involves the loading of each statement on all variables, they are exhibited as appendix and not as a part of this section (Appendix 01).

4.7.1.3 The relationships across variables:

One of the outputs generated by applying confirmatory factor analysis is, the correlation across variables. Such correlations unveil how much constructs are associated with each other statistically. If the variables are conceptually related to each other, they are observed to be highly correlated to each other, then it may lead to the existence of the multicollinearity problem. Multicollinearity is a serious problem in the data that contains variables highly correlated with each other. Even though the serious multicollinearity occurs when the correlation between independent variables is higher than 0.85, the correlation higher than 0.60 is still an issue as it would affect the significance of the independent variable on the dependent variable. The remedy in such a case is the assessment of the conceptual relationship existing across the highly correlated, if they are measuring one concept, then it would be advisable to adopt a second order variable, which is known as higher order constructs, in which the correlated constructs become subconstructs for every higher order construct.

The correlations across variables are assessed on two categories, the first category is the independent variables and the second category is the dependent variables. The

table below (Table 4-34) shows the correlations across variables in the research model.

Almost all the correlation values across the independent variables are observed to be higher than 0.5, which is a sign of concern regarding the impact of testing the hypotheses of each independent variable alone. Only four correlations are found a little below 0.5, as the correlations of the variable of “evaluating managers’ performance” is 0.490 with “evaluating alternatives” and 0.493 with “choosing the appropriate alternative” and the correlation of “choosing the appropriate alternative” is 0.497 with “evaluating the current performance”. The rest of correlation values are ranging between 0.500 to 0.742. This indicates that multicollinearity could affect the hypothesis testing process. Since all the independent variables are decision making practices and are conceptually correlated variables, and adopting few practices may lead us to adopting other practices as well, the independent variables are hence grouped into one higher order constructs named as “Decision Making Practices” (Table 4-34).

Table 4-34: Correlation across the independent variables.

Constructs	1	2	3	4	5	6	7	8	9	10	11
1 Diagnosing the problem	1										
2 Developing alternatives	0.599	1									
3 Evaluating alternatives	0.594	0.706	1								
4 Choosing the appropriate alternative	0.564	0.643	0.691	1							
5 Implementing Alternative	0.551	0.570	0.653	0.717	1						
6 Monitoring decision effectiveness	0.509	0.599	0.617	0.636	0.742	1					
7 Evaluating the current performance	0.515	0.557	0.577	0.497	0.592	0.627	1				
8 Evaluating managerial performance	0.556	0.527	0.515	0.533	0.582	0.591	0.672	1			
9 Evaluating managers' performance	0.589	0.500	0.490	0.493	0.528	0.583	0.596	0.625	1		
10 Strategic analysis (internal resources)	0.641	0.567	0.602	0.648	0.605	0.573	0.507	0.510	0.528	1	
11 Strategic analysis (SWOT)	0.630	0.644	0.617	0.598	0.619	0.661	0.587	0.554	0.590	0.708	1

Source: primary data.

Note: All the correlation values are found to be significant at 0.01 level of significance.

The standard is that correlation raising greater than 0.60 requires some remedy in order to avoid the issue of multicollinearity, which is moving towards using a higher order model, that is, joining the variables of decision making practices under one variable named “decision making practices”.

The second category involves the dependent variables, similarly, as shown in the table below (Table 4-35) the correlation across the four dependent variables are found higher than 0.50, where they range from 0.553 to 0.781. This indicates that they are highly correlated with each other, and since they are conceptually related to each other, they are hence grouped in one to higher order construct named “SMEs performance.

Table 4-35: Correlations across the dependent variables.

	Constructs	1	2	3	4
1	Growth Performance	1			
2	Internal performance	0.648	1		
3	Performance	0.781	0.774	1	
4	learning and performance growth	0.553	0.713	0.607	1

Source: primary data.

4.7.2 Assessment of the second order model

After grouping the correlated dependent and independent variables together forming a higher order construct, it is required to ensure that the higher order constructs are valid and reliable to measure the decision making practices as well as the performance of manufacturing small and medium enterprises. This assessment can be achieved by ensuring the convergent reliability and discriminant validity of the higher order constructs.

4.7.2.1 Convergent reliability:

The table below (Table 4-36) presents the results of the reliability measures of the higher order constructs investigated (Decision making practices and SMEs performance). Similar to the zero order constructs, factor loadings are used to assess the contribution of each statement (subconstruct in this case) towards the higher order construct. The factor loadings of the sub-constructs are ranging between 0.748 and 0.907, which is found satisfactory since each loading is

greater than the minimum limit (0.708). The values of Cronbach's Alpha for both decision making practices and SMEs performance are 0.941 and 0.894 respectively, the values of McDonald's Omega are 0.935 and 0.894; composite reliability values are 0.949 and 0.927 and the values of Dillon-Goldstein's rho are 0.942 and 0.895 for the same constructs respectively. This indicates that the internal consistency for both higher order constructs is satisfactorily established as all their values are found higher than 0.70 which is the minimum threshold.

The values of Average Variance Extracted (AVE) are 0.629 for Decision making practices and 0.760 for SMEs performance, indicating a satisfactory variance explained (> 0.50). Based on this, it can be concluded that convergent validity of the higher order model is established.

Table 4-36: Reliability measures of the second order variables.

Construct	Items	Loadings	alpha	MO	CR	AVE	rhoA
Decision making practices	Diagnosing the problem	0.773	0.941	0.935	0.949	0.629	0.942
	Developing alternatives	0.788					
	Evaluating alternatives	0.808					
	Choosing the appropriate alternative	0.801					
	Implementing alternative	0.822					
	Monitoring decision effectiveness	0.820					
	Evaluating the current performance	0.777					
	Evaluating managerial performance	0.767					
	Evaluating managers' performance	0.748					
	Strategic analysis (internal resources)	0.790					
Strategic analysis (SWOT)	0.829						
SMEs performance	Growth performance	0.850	0.894	0.894	0.927	0.76	0.895
	Performance during last five years	0.907					
	Internal performance	0.902					
	Learning growth performance	0.824					

Source: primary data.

Note: Loadings = Factors loading (> 0.708), Alpha = Cronbach's Alpha (> 0.70), MO = McDonald's Omega (> 0.70), CR = Composite reliability (> 0.70), rho = Dillon-Goldstein's rho (> 0.70), AVE = Average Variance Extracted (> 0.50).

4.7.2.2 Discriminant validity:

Similar to zero order constructs, discriminant validity is assessed through three commonly used measures which are Fornell-Larcker's criteria, Heterotrait

Monotrait criteria (HTMT) and cross loadings. All of them ensure that constructs are independent from each other. In this assessment, the independent variables are included as a higher order variable (Decision making practices) and dependent variables are included as a higher order variable (SMEs performance).

4.7.2.2.1 Fornell-Larcker's criteria:

The table below (Table 4-37) exhibits the correlations of all variables while the values on the diagonal are the squared root of the average variance extracted. The Fornell-Larcker's criteria states that the squared root of AVE should be greater than the relevant correlations, so as to ensure that construct is independent from other constructs. As shown in the table, the values on the diagonal are found greater than the relevant correlations. For instance, the square root of the decision making practice (0.793) is found greater than the correlations of decision making practices with other constructs, and so on. Since all the values on the diagonal are found greater than other correlations, discriminant validity is said to be established which indicate that respondents distinguish each construct from other constructs while answering.

Table 4-37: Discriminant validity of the higher order model - Fornell-Larcker's criteria

#	Construct	1	2	3	4	5	6	7
1	Decision Making Practices	0.793						
2	Organizational learning	0.695	0.774					
3	Traditional Decision making	0.397	0.434	0.733				
4	Information systems in decision making	0.605	0.573	0.365	0.837			
5	Entrepreneurial competencies	0.661	0.618	0.387	0.435	0.789		
6	Willingness for further education	0.547	0.597	0.372	0.466	0.66	0.777	
7	SMEs Performance	0.757	0.565	0.39	0.535	0.606	0.494	0.872

Source: primary data.

Note: The standard is that the values of the square root of AVE (values the diagonal) must be higher than the correlations values (values of the diagonal).

4.7.2.2.2 Heterotrait Monotrait criteria (HTMT):

HTMT criteria measures the similarity among variables, and the values of the HTMT should be less than 1 and more preferably less than 0.85. The table below

shows that all similarity values according to the HTMT criteria are less than 0.85 which indicates that discriminant validity is established implying that each construct in the model is independent from other constructs (Table 4-38).

Table 4-38: Discriminant validity of the higher order model - HTMT criteria.

#	1	2	3	4	5	6	7
1 Decision Making Practices							
2 Organizational learning	0.778						
3 Traditional Decision making	0.418	0.49					
4 Information systems in decision making	0.655	0.653	0.381				
5 Entrepreneurial competencies	0.734	0.737	0.487	0.496			
6 Willingness for further education	0.628	0.738	0.473	0.556	0.820		
7 SMEs Performance	0.825	0.649	0.411	0.598	0.688	0.582	

Source: primary data.

Note: The standard is that all values of the similarities among constructs must not exceed one, or more preferably, must not exceed 0.85.

4.7.2.2.3 Cross loadings:

The last measure to ensure the establishment of discriminant validity is the cross loadings of each statement on all variables as they show how a statement is loaded on one particular variable. The results show that statements in the research tool are found highly loaded on their concerned variables.

Since cross loadings involves the loading of each statement on all variables are shown as appendix rather than part of this section (Appendix01).

4.8 Assessment of the structure model

The structure model is the model used to assess the causal relationships. The assessment of the structure model begins after ensuring that reliability and validity is established for the research model in the measurement model.

4.8.1 Assessment of multicollinearity

Creating a higher order model was one of the steps followed to avoid the problem of multicollinearity, which is a serious problem that can occur in the

data, and affect the causal relationships. Variance Inflation Factor (VIF) is an indicator used to assess the multicollinearity of the predicting variables. A value of 5 indicates a serious problem of multicollinearity. However, a value above 3 is still an indicator of multicollinearity, therefore a value less than 3 is preferred to ensure that no multicollinearity exists in the data (Hair, et al., 2017; Becker, et al., 2015).

The table (Table 4-39) below shows the VIF values, where all values are found to be less than 3, which indicate that there is no multicollinearity issues in the predicting variables.

Table 4-39: Variance Inflation Factor of all main variables.

Construct	VIF
Decision Making Practices (DMPs)	2.614
Organizational learning (OL)	2.441
Traditional Decision making (TDMPs)	1.302
Information systems in decision making (ITinDM)	1.754
Entrepreneurial competencies (ECs)	2.377
Willingness for further training/education (WFFTE)	2.029

Source: primary data.

4.8.2 Assessment of the significance and relevance of the relationships across the model

To assess the relevance and significance of the relationships across the research model, the bootstrapping technique is applied, where the sample is further divided into 10,000 sub-samples to report the mean estimates resulting from the bootstrapping process, in order to identify the significance of the causal relationship between two variables.

The relationships in the model are assessed in two parts, in the first part, independent variables are examined to identify their impact on the performance of manufacturing SMEs as individual variables. Since the independent variables contains the decision making process majorly consisting of the six decision

making steps (starting from diagnosing the problem and ending in monitoring the effectiveness of the decision), and these six variables are investigated to identify their impact on the performance of manufacturing SMEs at zero order in the research model. The other five independent variables are; the strategic practices for decision making (starting with evaluating current performance and ending with strategic analysis S.W.O.T), these five variables will be investigated to identify their impact on the performance of manufacturing SMEs at zero order in the model.

However, due to relatively high correlation among independent variables, a higher order model is created, therefore, the second part involved investigating the impact of independent variables as a higher order construct “Decision making practices”. Similarly, in this part the model is investigated three times. In the first time, only the six decision making process variables will be included in the model as a higher order variable, while in the second model, only the strategic practices of decision making are included in the model as a higher order variable, and in the third time, all the independent variables are included in the model as a higher order variable for investigation.

4.8.2.1 The first part of the structure model investigation:

4.8.2.1.1 The decision making process variables (DMPs)

Here, a model is designed where the performance of manufacturing is the dependent variable and the decision making process steps are the independent variables. They are investigated individually to measure their impact on the performance of manufacturing SMEs.

As shown in table below (Table 4-40), it is observed that four out of the six variables in the decision making process model have significantly impacted the performance of manufacturing SMEs, while the other two variables are found

insignificant. The significant influential variables are diagnosing the problem ($\beta = 0.201$, $p < 0.01$, 95% CI [0.105, 0.301]), choosing the appropriate alternative ($\beta = 0.162$, $p < 0.01$, 95% CI [0.048, 0.266]), implementing the alternative ($\beta = 0.229$, $p < 0.01$, 95% CI [0.124, 0.346]), and monitoring the effectiveness of the decisions ($\beta = 0.193$, $p < 0.01$, 95% CI [0.091, 0.304]). While the insignificant influential variables are developing alternatives ($\beta = 0.072$, $p > 0.05$, 95% CI [-0.036, 0.19]), and evaluating alternatives ($\beta = 0.029$, $p > 0.05$, 95% CI [-0.083, 0.134]).

It is worth mentioning here that due to high correlation among the independent variables, the insignificance is affected by multicollinearity which is the reason higher order models are adopted even though checking multicollinearity did not reveal any severity of its existence. Further details about the zero order model “the decision making process model” are presented in the table as well as figure below (Figure 4-1).

Table 4-40: The decision making process variables coefficients - zero order

Path	Original Est.	Bootstrap Mean	t	p	2.5% CI	97.5% CI
DP -> SMEsP	0.201	0.202	4.065	< 0.01	0.106	0.301
DA -> SMEsP	0.077	0.076	1.335	> 0.05	-0.036	0.19
EA -> SMEsP	0.029	0.027	0.537	> 0.05	-0.083	0.134
CA -> SMEsP	0.162	0.159	2.928	< 0.01	0.048	0.266
IA -> SMEsP	0.229	0.233	4.056	< 0.01	0.124	0.346
MEA -> SMEsP	0.193	0.196	3.547	< 0.01	0.091	0.304

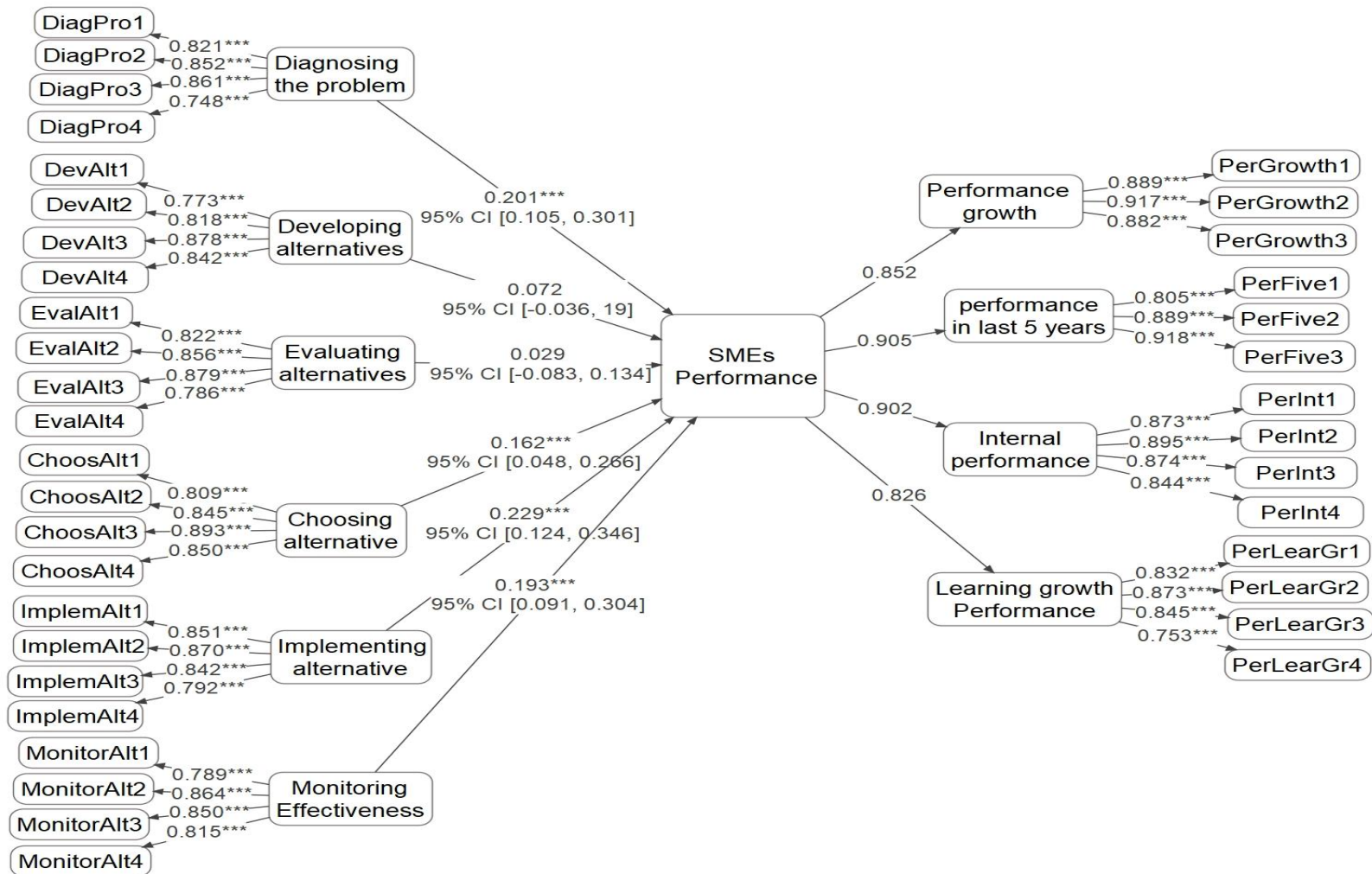
Source: primary data.

Note: **DP** = Diagnosing the problems, **DA** = Developing alternatives, **EA** = Evaluating Alternatives, **CA** = Choosing Alternatives, **IA** = Implementing the alternatives, **MEA** = Monitoring the effectiveness of the alternative, **SMEsP** = SMEs Performance.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

This partially supports the third null hypothesis, “*There is no significant positive impact of the decision making process steps on the performance of manufacturing SMEs*”, as the impact of two steps of the decision making process i.e. developing alternatives and evaluating alternatives is found to be insignificant, indicating they do not support the hypothesized statement.

Figure 4-1: The decision making process model - zero order



Source: primary data analysis (SEMinR package).

4.8.2.1.2 Strategic practices for decision making variables (SPDM)

In this part, the designed model contains only the strategic practices for decision making (five practices) as independent variables, and the performance of manufacturing SMEs as the dependent variable.

As observed in the table below (Table 4-41) and illustrated in (Figure 4-2), the five variables of strategic practices for decision making are found significantly influencing the performance of manufacturing SMEs. This implies that the performance of manufacturing SMEs is significantly predicted by the evaluation of current performance ($\beta = 0.128$, $p < 0.01$, 95% CI [0.02, 0.243]), evaluation of managerial performance ($\beta = 0.242$, $p < 0.05$, 95% CI [0.129, 0.354]), evaluation of managers' performance ($\beta = 0.159$, $p < 0.01$, 95% CI [0.042, 0.275]), the strategic analysis of internal resources ($\beta = 0.112$, $p < 0.01$, 95% CI [0.013, 0.213]), and the strategic analysis of S.W.O.T ($\beta = 0.232$, $p < 0.01$, 95% CI [0.11, 0.36]).

This does not support the fourth hypothesized statement - “*There is no significant positive impact of the strategic practices of decision making on the performance of manufacturing SMEs*” as all the strategic practices for decision making are found to be significantly influencing the performance of manufacturing SMEs (Table 4-41).

Table 4-41: The strategic practices for decision making coefficients - zero order

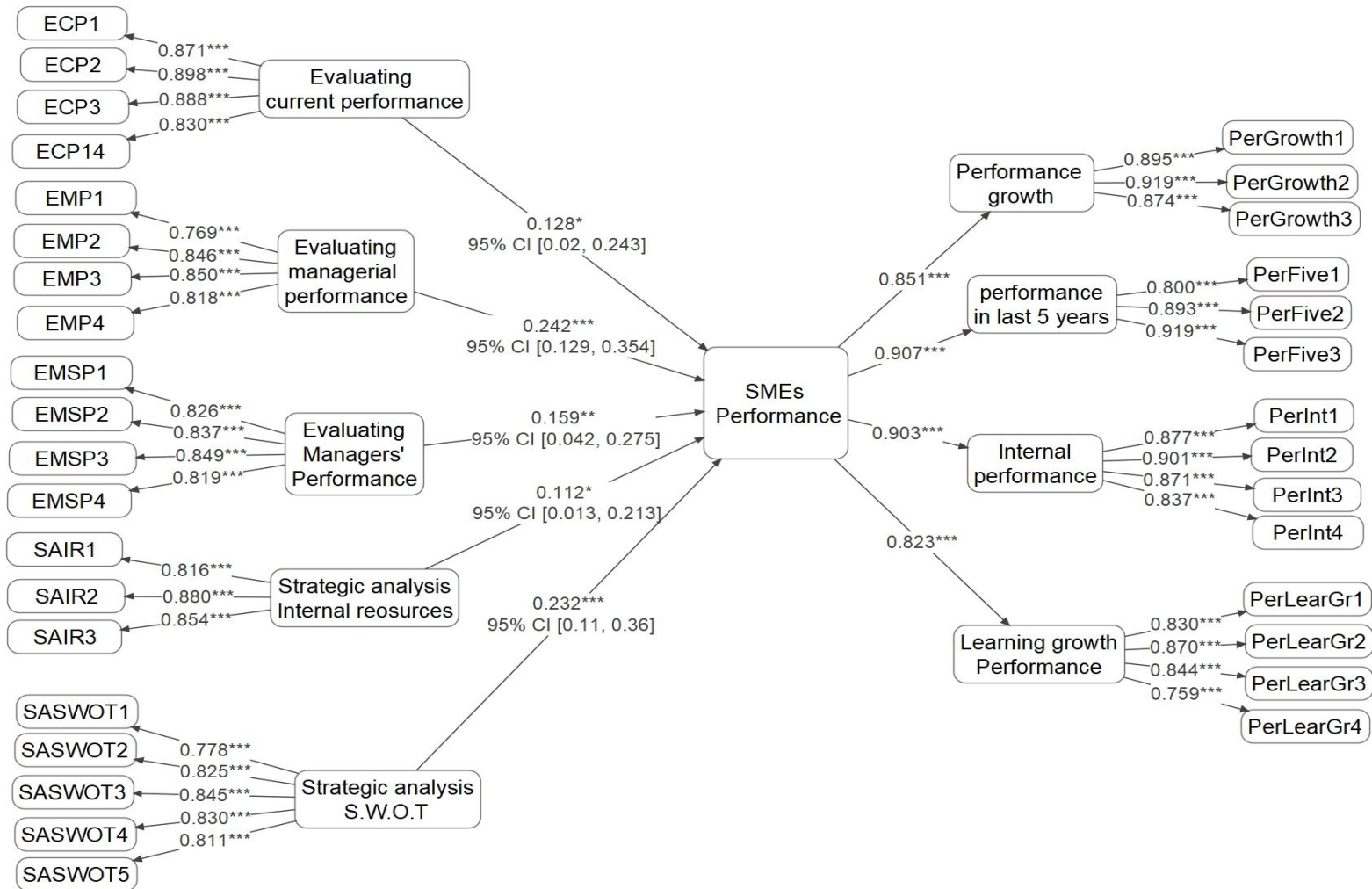
Path	Original Est.	Bootstrap Mean	T Stat.	p	2.5% CI	97.5% CI
ECP -> SMEsP	0.128	0.131	2.271	< 0.01	0.02	0.243
EMP -> SMEsP	0.242	0.244	4.208	< 0.01	0.129	0.354
EMSP -> SMEsP	0.159	0.156	2.672	< 0.01	0.042	0.275
SAIR -> SMEsP	0.112	0.112	2.205	< 0.01	0.013	0.213
SASWOT -> SMEsP	0.232	0.233	3.645	< 0.01	0.111	0.36

Source: primary data

Note: **ECP** = Evaluating current performance, **EMP** = Evaluating managerial performance, **EMSP** = Evaluating Managers' performance, **SAIR** = Strategic Analysis – Internal Resources, **SASWOT** = Strategic Analysis – Strength, Weakness, Opportunities and Threats, **SMEsP** = SMEs Performance.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

Figure 4-2: The strategic practices model - zero order



Source: primary data analysis (SEMinR package).

4.8.2.2 The second part of the structure model investigation:

This part involves investigating the relationships across the research model including all variables in three shapes of the research model. The first model “Model1” involves the independent variable as decision making practices containing the decision making process and the strategic practices for decision making, which is the model containing all the practices adopted in this study, hence it is called as “the main model”, “the first model” or “the decision making practices model”.

The second model involves the independent variable containing only the decision making process (six decision making practices starting with diagnosing the problem and ending in monitoring the effectiveness of the decision), hence it is called as “the second model” or “the decision making process model”.

The third model involves the strategic practices for decision making (five variables starting with evaluating current performance and ending with strategic analysis S.W.O.T), hence it is called “the third model” or “the strategic practices model”.

4.8.2.2.1 The decision making practices model (DMPsM):

The table below (Table 4-42) presents the assessment of the significance and relevance of the paths in the main model (Figure 4-3). The table precisely shows the estimate of the independent variable on the dependent variables, in addition to that, it shows the mean estimate that resulted from applying the bootstrapping technique, the ‘t’ statistic value of comparing the sub-samples in the bootstrapping procedure. Then it shows the ‘p’ value where the relationship is said to be significant if the ‘p’ value is less than 0.05 and insignificant otherwise. Similarly, the table shows the confidence intervals where 2.5% as well as 97.5% confidence interval are outlined, if the lower and upper confidence interval

include a zero value (the lower is negative and the upper value is positive) the result is said to be insignificant if they do not include a zero value (both are positive values), and the test result is said to be significant.

Table 4-42: Coefficients of the decision making practices model - higher order.

Path	Original Est.	Bootstrap Mean	T Stat.	p	2.5% CI	97.5% CI
DMPs -> OL	0.695	0.696	17.227	< 0.01	0.612	0.768
DMPs -> TDMPs	0.397	0.401	7.868	< 0.01	0.299	0.497
DMPs -> ITinDM	0.605	0.607	13.942	< 0.01	0.516	0.688
DMPs -> SMEsP	0.637	0.638	10.204	< 0.01	0.515	0.759
OL -> SMEsP ce	-0.035	-0.030	-0.557	> 0.05	-0.15	0.091
TDMPs -> SMEsP	0.069	0.070	1.526	> 0.05	-0.019	0.158
ITinDM -> SMEsP	0.103	0.108	1.563	> 0.05	-0.02	0.237
ECs -> SMEsP	0.164	0.164	2.587	< 0.01	0.041	0.289
WFFTE -> SMEsP	0.020	0.020	0.393	> 0.05	-0.079	0.123
First interaction effect (ECs)	0.038	0.040	0.891	> 0.05	-0.043	0.125
Second interaction effect (WFFTE)	-0.022	-0.025	-0.492	> 0.05	-0.116	0.057

Source: primary data.

Note: **DMPS** = Decision Making Practices, **SMEsP** = SMEs Performance, **OL** = Organizational Learning, **TDMPs** = Traditional Decision Making Practices, **ITinDM** = information technology in Decision making, **ECs** = Entrepreneurial Competencies, **WFFTE** = Willingness For Further Training and Education.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

In the table above (Table 4-42), all the paths are outlined. The bootstrapped estimate of the impact of decision making practices on SMEs performance is positive 0.637, which indicates that the adopting and adherence to decision making practices leads to an increased performance of the manufacturing SMEs. The bootstrapped mean of the estimate is 0.638 which indicates its consistency. The t statistics values (t = 10.204), p value being less than 0.05 and the confidence intervals (2.5% CI = 0.515 and 97.5% CI = 0.759) indicate that the impact of decision making practices on the performance of manufacturing SMEs is statistically significant. And hence, the fifth hypothesized statement - “There is no significant positive impact of decision making practices on the performance of manufacturing SMEs”, is rejected or we fail to accept the null hypothesis.

As for the relationship of organizational learning and the performance of manufacturing SMEs, the estimate is -0.035, which indicates that there is barely any connection between the change in organizational learning levels and SMEs performance, and the bootstrapped estimates of -0.030 confirms its consistency. Further, the t statistics ($t = -0.557$), p value being higher than 0.05 and confidence intervals (2.5% CI = -0.15 and 97.5% CI = 0.091) indicates that the impact of organizational learning on the performance of manufacturing SMEs is not statistically significant. This leads to supporting the sixth hypothesized statement - *“There is no significant positive impact of Organizational learning on the performance of manufacturing SMEs”*, as the null hypothesis failed to be rejected.

As for the impact of traditional decision making practices on the performance of manufacturing SMEs, the estimate of 0.069 unveils presence of a very weak relationship, and the bootstrapped estimates of 0.070 confirms its consistency. The t statistics ($t = 1.526$), p value of more than 0.05 and confidence intervals (2.5% CI = -0.019 and 97.5% CI = 0.158) indicate that the impact of traditional decision making practice on the performance of manufacturing SMEs is statistically insignificant. This supports the seventh hypothesized statement *“There is no significant negative impact of traditional decision making practices on the performance of manufacturing SMEs”*. This indicates that adopting traditional decision making practices does not necessarily facilitate in realizing improvement in performance of MSEs.

Considering the impact of adopting information technology in the decision making practices on the performance of manufacturing SMEs, the estimate of 0.103 indicates presence of a low relationship between both variables, the bootstrapped estimates of 0.108 confirms its consistency. The t statistics ($t = 1.563$), p value being more than 0.05 and confidence intervals (2.5% CI = -0.020

and 97.5% CI = 0.237) unveils that the impact of adopting information technology in the decision making process on the performance of manufacturing SMEs is not statistically significant. This supports the eighth hypothesized statement - *“There is no significant positive impact of using IT in decision making on the performance of manufacturing SMEs”*.

The estimate of the relationship between entrepreneurial competencies and the performance of manufacturing SMEs is 0.164 which indicates a low relationship existing between the two variables. The bootstrapped estimates of 0.164 confirms the consistency of the relationship. The t statistics ($t = 2.587$), p value being less than 0.05 and confidence intervals (2.5% CI = 0.041 and 97.5% CI = 0.289) indicate that the impact of entrepreneurial competencies on the performance of manufacturing SMEs is statistically significant. This also indicates that more the entrepreneurial competencies possessed by managers, better would the performance of the manufacturing SMEs, through operating in an underdeveloped economy like Yemen. Hence, it is decided that the ninth hypothesized statement *“There is no significant positive impact of entrepreneurial competencies of managers/owners on the performance of manufacturing SMEs”* is well supported.

The impact of the willingness of managers for further management and entrepreneurial education or training, the performance of manufacturing SMEs is assessed as the estimate is 0.020, it indicates that the performance barely change in response to the changes in the willingness of managers to pursue further entrepreneurship or management education. The bootstrapped estimates of 0.020 conforms its consistence. The t statistics ($t = 0.393$), p value being higher than 0.05 and confidence intervals (2.5% CI = -0.079 and 97.5% CI = 0.123) indicates that the impact of the willingness of managers to pursue further education in management or entrepreneurship so as to optimize the performance

of manufacturing SMEs is found to be not statistically significant. This support the tenth hypothesized statement - *“There is no significant positive impact of willingness of managers towards further education/training in management on the performance of manufacturing SMEs”*.

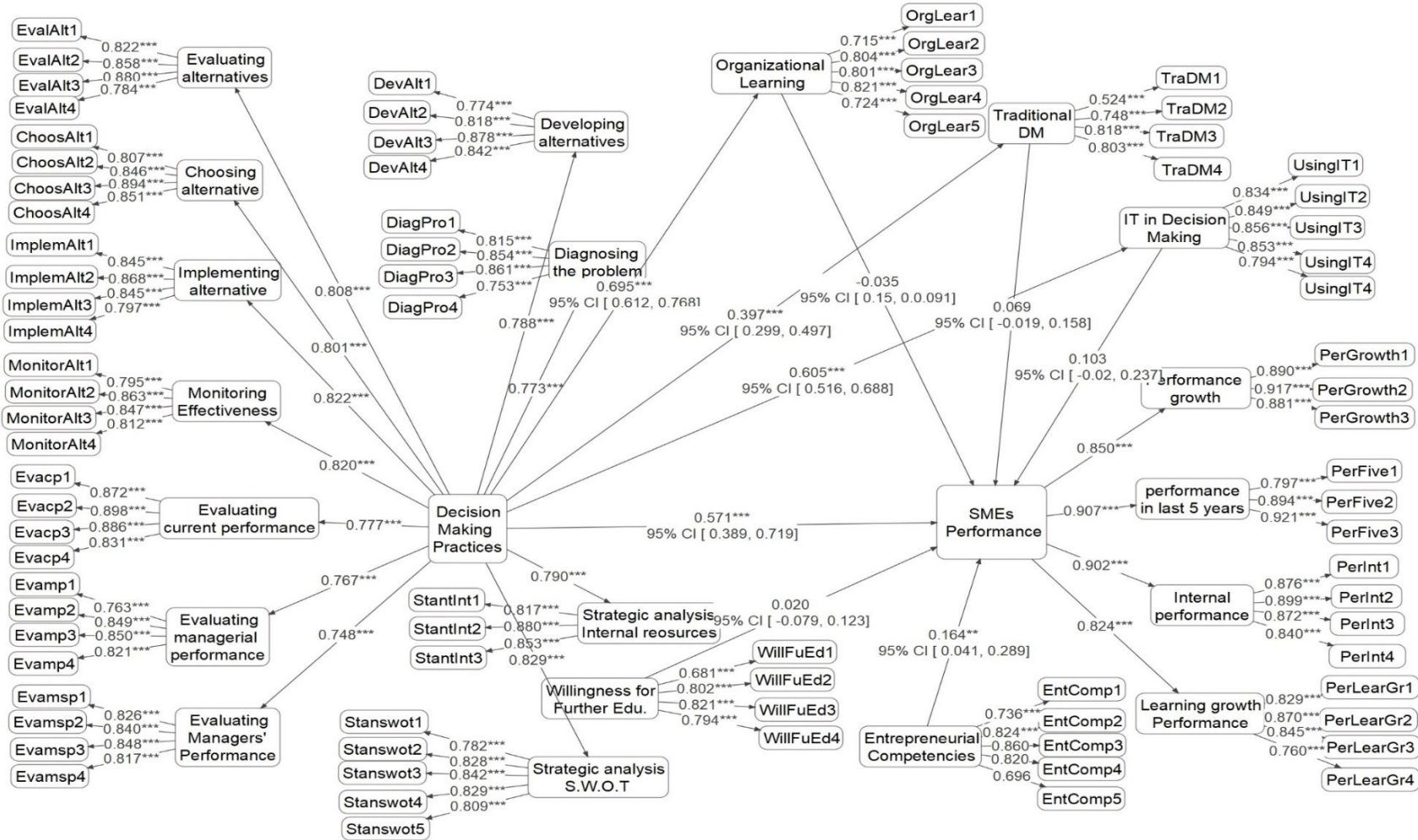
Assessing the impact of decision making practices on organizational learning among the manufacturing SMEs in an underdeveloped economy like Yemen; with the estimate positive value of 0.695, it indicates that around 70% of the variance in the organizational learning among manufacturing SMEs is explained by the decision making practices adhered to by the enterprises. After applying the bootstrapping into 10,000 sub-samples, the mean of the estimate is found to be 0.696, which indicates the consistency of such impact. Further, t statistics value being 17.227 and more than the critical value, further, the p value being less than 0.05 with the two values of confidence interval (2.5% CI = 0.612, 97.5% CI = 0.768) do not include a zero value as both lower and upper values are positive, and it can be said that the impact of decision making practices on the organizational learning among manufacturing SMEs is statistically significant.

Assessing the impact of decision making practices on traditional decision making practices (which is concerned with sticking to traditional way of making decision without conceding adhering to the scientific processes), the estimate is positive with a value of 0.397 which indicates that around 40% of the variance in the traditional decision making is explained by decision making practices. The t statistics being 7.868, and the p value being less than 0.05 and the confidence intervals are 2.5% = 0.299 and 97.5% = 0.497 which indicates that the impact on traditional decision making among managers in manufacturing SMEs is statistically significant. However, since the estimate has a positive value, it does not indicate that more adherence to decision making practices leads to less

traditional decision making practices, which is inconsistent with what the expected impact of decision making practices when adhered to traditional practice in making decisions, due to the continuous follow up and adoption to scientific decision making practices.

Studying the impact of decision making practices on the usage and adoption of information technology systems in the decision making process, with the estimate being a positive value of 0.605, it indicates that 60% of the variance in the adoption and adherence to information technology system in the decision making process is explained. With the bootstrapped mean estimate of 0.607, it shows that such impact is consistent. The t statistics is 13.942, and the p value being less than 0.05 and the confidence intervals (2.5% CI = 0.516 and 97.5% CI = 0.688) unveil that the impact of decision making practices on the adoption of information technology and systems in the decision making is statistically significant.

Figure 4-3: The decision making practices model - higher order



Source: primary data analysis (SEMinR package).

4.8.2.2.2 The decision making process model (DMPM)

The model is designed so as to have independent, dependent, moderating and mediating variables; however, the independent variables only contains the decision making process variables (six variables starting from diagnosing the problem and ending in monitoring the effectiveness of the decision).

As shown in the table below (Table 4-43), the results obtained from running the decision making process model are similar to first model containing the whole independent variables under “decision making practices” where the significant relationships in the main model remained significant in the decision making process model and the same is applied for the insignificant relationships. However, the relationship between using information technology in decision making and the performance of manufacturing SMEs was found insignificant in the decision making practices model ($\beta = 0.103$, $p > 0.05$, 2.5% CI = -0.020 and 97.5% CI = 0.237), while it is found to be significant in the decision making process model ($\beta = 0.156$, $p < 0.05$, 2.5% CI = 0.035, and 97.5% CI = 0.287). Further details are presented in the table as well as the figure below (Figure 4-4).

Table 4-43: Coefficients of the decision making process model - higher order.

Path	Original Est.	Bootstrap Mean	T Stat.	P	2.5% CI	97.5% CI
DMPs -> OL	0.649	0.651	13.036	< 0.01	0.547	0.740
DMPs -> TDMPs	0.354	0.359	6.194	< 0.01	0.242	0.466
DMPs -> ITinDM	0.534	0.536	9.93	< 0.01	0.425	0.637
DMPs -> SMEsP	0.515	0.504	6.076	< 0.01	0.320	0.650
OL -> SMEsP	-0.006	-0.002	-0.101	> 0.05	-0.124	0.121
TDMPs -> SMEsP	0.083	0.083	1.813	> 0.05	-0.007	0.172
ITinDM -> SMEsP	0.156	0.161	2.403	< 0.01	0.035	0.287
ECs -> SMEsP	0.186	0.187	2.704	< 0.01	0.052	0.319
WFFTE -> SMEsP	0.03	0.03	0.561	> 0.05	-0.074	0.136
First interaction effect (ECs)	0.028	0.03	0.6	> 0.05	-0.062	0.121

Path	Original Est.	Bootstrap Mean	T Stat.	P	2.5% CI	97.5% CI
Second interaction effect (WFFTE)	-0.006	-0.011	-0.137	> 0.05	-0.110	0.080

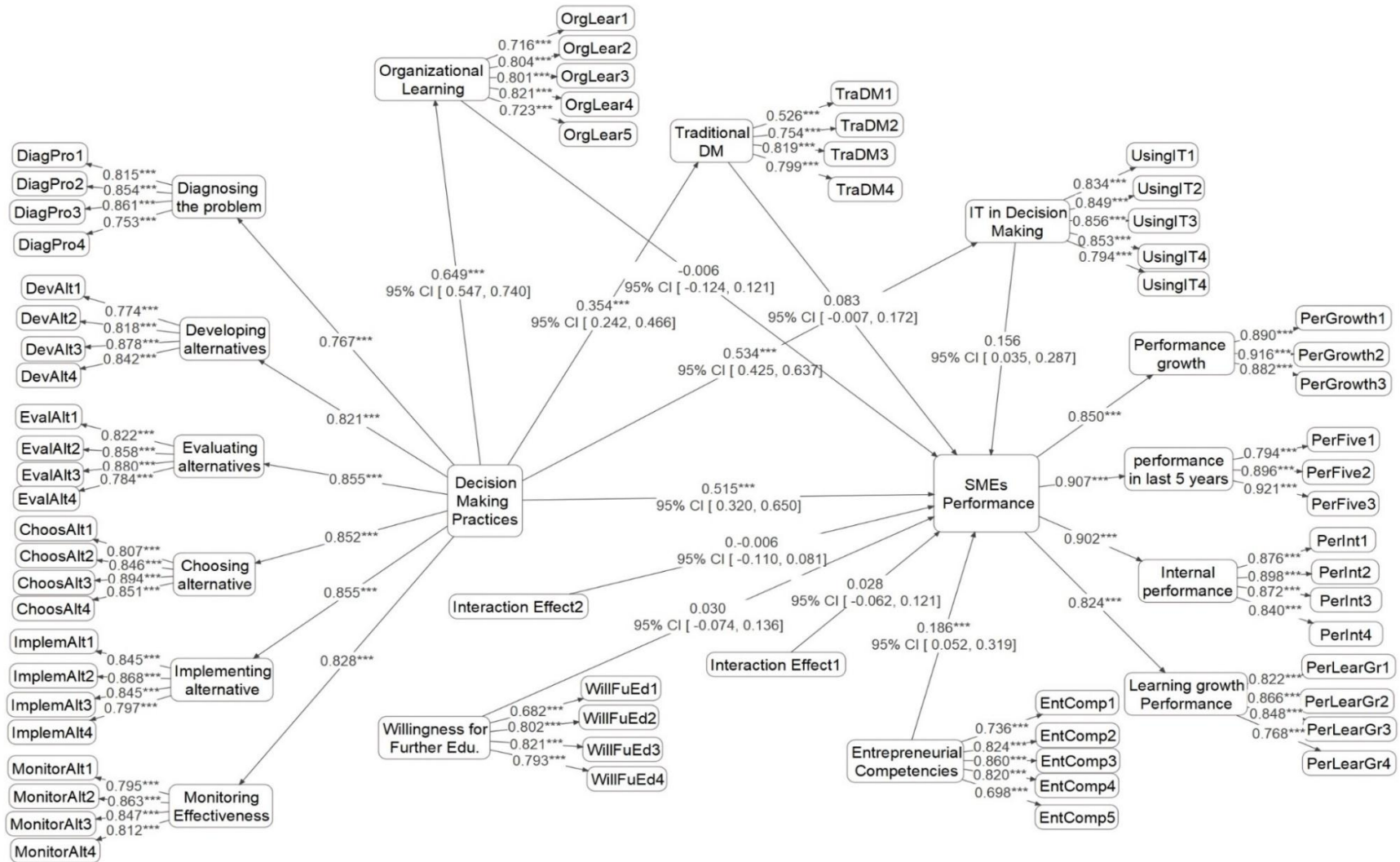
Source: primary data.

Note: **DMPS** = Decision Making Practices, **SMEsP** = SMEs Performance, **OL** = Organizational Learning, **TDMPs** = Traditional Decision Making Practices, **ITinDM** = information technology in Decision making, **ECs** = Entrepreneurial Competencies, **WFFTE** = Willingness For Further Training and Education.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

The decisions about the hypothesized statements (H5 to H10) in the decision making process model remains similar to the decision about the same hypotheses in the decision making practices model except one hypothesis, which is the eighth hypothesis, - *“There is no significant positive impact of using IT in decision making on the performance of manufacturing SMEs”* which was significant in the decision making practices model, and became insignificant in the decision making process model.

Figure 4-4: The decision making process model - higher order



Source: primary data analysis (SEMinR package).

4.8.2.2.3 Strategic practices model for decision making (SPMDM)

In the last model, the design is centred around considering strategic practices for decision making as the independent variable, while keeping the other variables as they are in the main model (the decision making practices model).

The table and figure below (Table 4-44) (Figure 4-5) reveal that the results of the strategic practices for decision making model are similar to those of the main model where significant relationships in the decision making practices model remained significant in the strategic practices model and the insignificant relationships remained insignificant. Hence the decision about the hypothesized statements (H5 – H10) in this model is similar to the decision in the decision making practices model.

This leads us towards the conclusion that among the three models investigated, only one relationship differed between the decision making practices model and the decision making process model, which is the relationship between using information technology in the decision making and the performance of manufacturing SMEs.

Table 4-44: Coefficients of the strategic practices model - higher order.

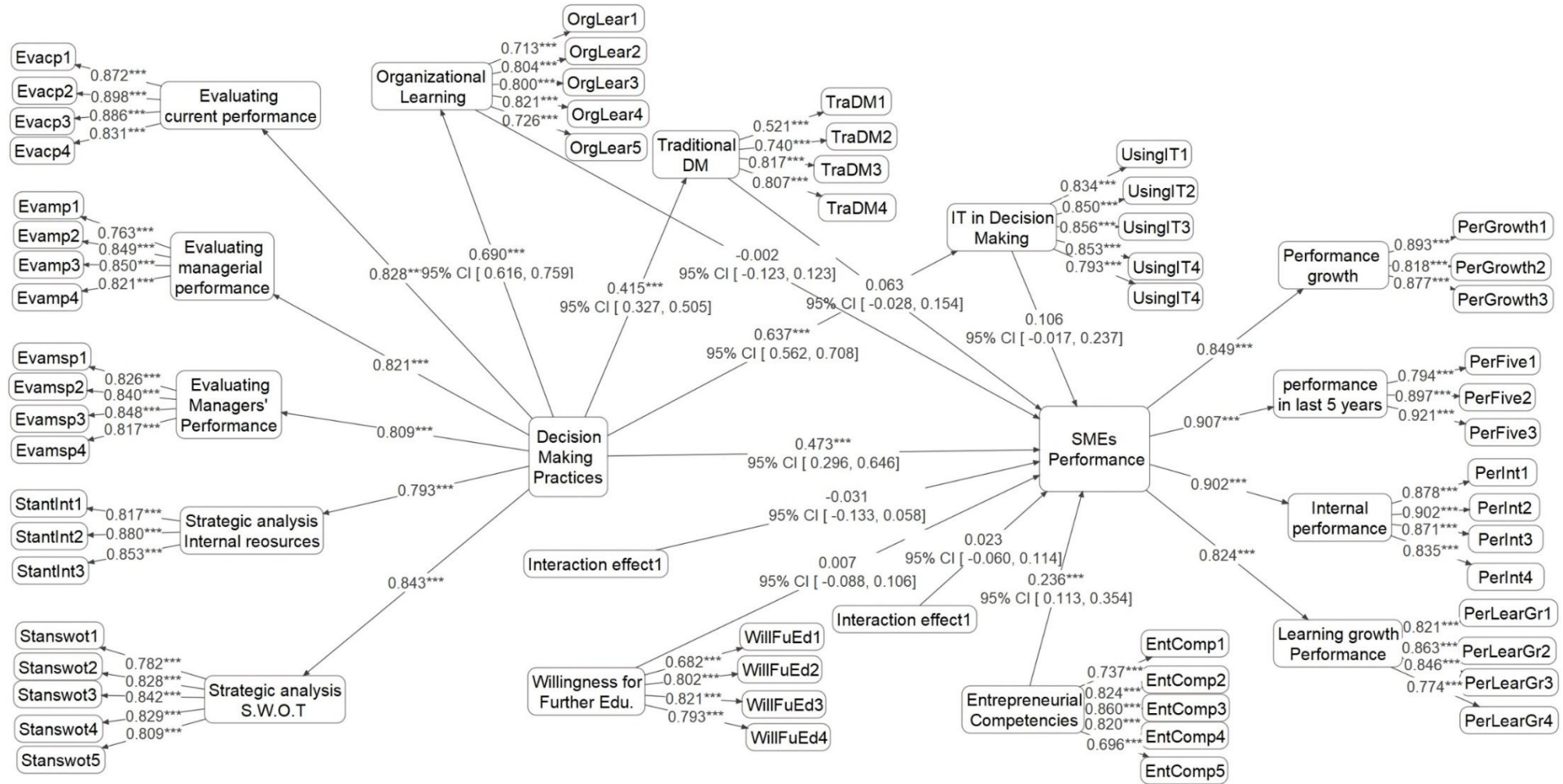
	Original Est.	Bootstrap Mean	T Stat.	P	2.5% CI	97.5% CI
DMPs -> OL	0.69	0.691	18.725	< 0.01	0.616	0.759
DMPs -> TDMPs	0.415	0.419	9.113	< 0.01	0.327	0.505
DMPs -> ITinDM	0.637	0.638	17.051	< 0.01	0.562	0.708
DMPs -> SMEsP	0.473	0.473	5.238	< 0.01	0.296	0.646
OL -> SMEsP	-0.002	0	-0.039	> 0.05	-0.123	0.123
TDMPs -> SMEsP	0.063	0.065	1.355	> 0.05	-0.028	0.154
ITinDM -> SMEsP	0.106	0.11	1.622	> 0.05	-0.017	0.237
ECs -> SMEsP	0.236	0.235	3.797	< 0.01	0.113	0.354
WFFTE -> SMEsP	0.007	0.007	0.15	> 0.05	-0.088	0.106
First interaction effect (ECs)	0.023	0.027	0.528	> 0.05	-0.06	0.114
Second interaction effect (WFFTE)	-0.031	-0.032	-0.643	> 0.05	-0.133	0.058

Source: primary data.

Note: DMPS = Decision Making Practices, SMEsP = SMEs Performance, OL = Organizational Learning, TDMPs = Traditional Decision Making Practices, IT_inDM = information technology in Decision making, ECs = Entrepreneurial Competencies, WFFTE = Willingness For Further Training and Education.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

Figure 4-5: The strategic practices model - higher order



Source: primary data analysis (SEMinR package).

4.8.2.3 Comparison of the three models:

After the presentation of the results of the three models consequently, the main path results can be compared in order to identify the differences in adopting the decision making practices model “the first model”, the decision making process “the second model” or the strategic practices adopted for decision making “the third model”. The goal is to compare its effectiveness in two main areas of comparison. The first area being the significance of the paths in the research model, and the second area of comparison being the variances explained in the dependent variable. The aim of this comparison is to identify what is the best option that can be obtained by applying which of the three models discussed above. The table below (Table 4-45) exhibits the results of the relationships investigated in the three models, where the estimate values are listed along with the decision of the relationship to be significant or not so significant.

Table 4-45: Comparison of coefficients of the three models.

Path	Model 1		Model 2		Model 3	
	Original Est.	Sig.?	Original Est.	Sig.?	Original Est.	Sig.?
DMPs -> OL	0.695	Yes	0.649	Yes	0.690	Yes
DMPs -> TDMPs	0.397	Yes	0.354	Yes	0.415	Yes
DMPs -> ITinDM	0.605	Yes	0.534	Yes	0.637	Yes
DMPs -> SMEsP	0.637	Yes	0.515	Yes	0.473	Yes
OL -> SMEsP	-0.035	No	-0.006	No	-0.002	No
TDMPs -> SMEsP	0.069	No	0.083	No	0.063	No
ITinDM -> SMEsP	0.103	No	0.156	Yes	0.106	No
ECs -> SMEsP	0.164	Yes	0.186	Yes	0.236	Yes
WFFTE -> SMEsP	0.02	No	0.03	No	0.007	No
First interaction effect (ECs)	0.038	No	0.028	No	0.023	No
Second interaction effect (WFFTE)	-0.022	No	-0.006	No	-0.031	No

Source: primary data.

Note: **DMPS** = Decision Making Practices, **SMEsP** = SMEs Performance, **OL** = Organizational Learning, **TDMPs** = Traditional Decision Making Practices, **ITinDM** = information technology in Decision making, **ECs** = Entrepreneurial Competencies, **WFFTE** = Willingness For Further Training and Education. **Sig.?** = “Is it significant?”.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

As mentioned earlier, when comparing the three models with respect to the amount of the impact of the main independent variable which is the decision making practices on the main dependent variable in the model which is, the performance of manufacturing SMEs, and the result unveils that when considering all the decision making practices as independent variable, the estimate of the impact is 63% ($\beta = 0.637$), while the same impact is 51% ($\beta = 0.515$) when using only the decision making process model, and when using the strategic practices model, the impact is observed to be 47% ($\beta = 0.473$).

This leads towards conclusion that the size of the impact of the decision making practices on the performance of manufacturing SMEs is found to be higher when using the decision making practices model “the first model” and it is found to have the least impact when using the strategic practices model “the third model”.

For further comparison among the three models, the percentage of the variance explained by the independent variable is used to identify the model that yield the higher variance explained in the performance of SMEs by the decision making practices.

The table below (Table 4-46) compares the three model by their ability to explain the variance on the dependent variables. Considering the main dependent variable in the model “SMEs performance”, it can be observed that the variance in SMEs performance is more explained by the independent variables in the main model “the decision making practice model” (Rsquared = 60.5%), and it is the least explained by the independent variables in the third model “the strategic practices model” (Rsquared = 56.8%). However, it is worth mentioning here that in the second model “the decision making process model”, the variance in the performance of SMEs is

almost similarly explained (Rsquared = 60.2%) as in the main model “the decision making practices model”.

Even though the table (Table 4-46) shows that in the third model i.e. “the strategic practices model”, there is more variance explained in the case of the dependent variables “traditional decision making” and “using information technology in decision making”, yet they are not considered as main dependent variables in the model, as they are adopted as mediating variables. Therefore, the only comparison that can be taken into consideration here is using the main dependent variable in the model which is “SMEs performance”.

Table 4-46: Comparison of variance explained (R^2) in the three models.

	SMEsP	OL	TDMPs	ITinDM
Model1	0.605	0.482	0.158	0.366
Model2	0.602	0.421	0.125	0.285
Model3	0.568	0.477	0.172	0.406

Source: primary data.

Note: SMEsP = SMEs Performance, OL = Organizational Learning, TDMPs = Traditional DM Style, ITinDM = information technology in decision making.

4.8.3 Assessment of the explanatory power of the model

Rsquared is used to identify the explanatory power of the research model, where it reveals the variance in the dependent variables that can be explained by the independent variables. The more variance explained in the dependent variable implies the better explanatory power of the research model.

In the table below (Table 4-47), the RSquared of the performance of manufacturing SMEs is 0.605 which indicates that 60% of the variance in the performance of SMEs is explained by the independent variables. This indicates that the model has a moderate explanatory power. In the case of organizational learning

and adopting information technology in decision making, the Rsquared is 0.482 and 0.336 respectively which indicate a weak to moderate variance explained by the independent variables. And finally, the weak variance explained is observed with tradition decision making as a dependent variable where only 15% of the variance is explained by decision making practices. It can be concluded that decision making practices explains more variance in the performance of manufacturing SMEs more than the variance in the other variables. Therefore, it can be stated that the research model has a moderately satisfactory explanatory power.

Table 4-47: Explanatory power of the research model - Rsquared.

	SMEsP	OL	TDMPs	ITinDM
Rsquared	0.605	0.482	0.158	0.366
AdjRsqr	0.599	0.481	0.155	0.365

Source: primary data.

Note: **SMEsP** = SMEs_Performance, **OL** = Organizational_Learning, **TDMPs** = Traditional DM Style, **ITinDM** = information technology in decision making.

Rsquared: is the amount of variance in the dependent variable explained by independent variables.

AdjRsqr: It takes into account the number of independent variables used for predicting the target variable

In addition to the Rsquared measure, the technique of blindfolding is applied which relies on deleting part of the data and then predicting it to identify the explanatory power of the model, this output is known as f-squared (f^2). The table below (Table 4-48) presents the effect size of the impact of decision making practices on the performance of manufacturing SMEs is 0.298 which is considered small to medium effect size. However, a very small effect size in the case of the impact of the other independent variables on the performance of manufacturing SMEs. A large effect size is observed in the impact of decision making practices on organizational learning ($f^2 = 0.932$) a medium effect size in the impact on adopting

information technology in decision making ($f^2 = 0.578$) and a small effect on traditional decision making practices ($f^2 = 0.187$).

Table 4-48: Explanatory power of the research model - f squared (Effect size).

Construct	OL	TDMPs	ITinDM	SMEsP
Decision Making Practices (DMPs)	0.932	0.187	0.578	0.298
Organizational learning (OL)	-	-	-	0.001
Traditional Decision making (TDMPs)	-	-	-	0.009
Information systems in decision making (ITinDM)	-	-	-	0.015
Entrepreneurial competencies (ECs)	-	-	-	0.03
Willingness for further education (WFFTE)	-	-	-	0.001

Source: primary data.

Note: SMEsP = SMEs_Performance, OL = Organizational_Learning, TDMPs = Traditional_DMStyle, ITinDM = information technology in decision making.

Effect size: According to Cohen's (1988) guidelines, $f^2 \geq 0.02$, $f^2 \geq 0.15$, and $f^2 \geq 0.35$ represent small, medium, and large effect sizes, respectively.

4.8.4 Assessment of the predictive power of the model

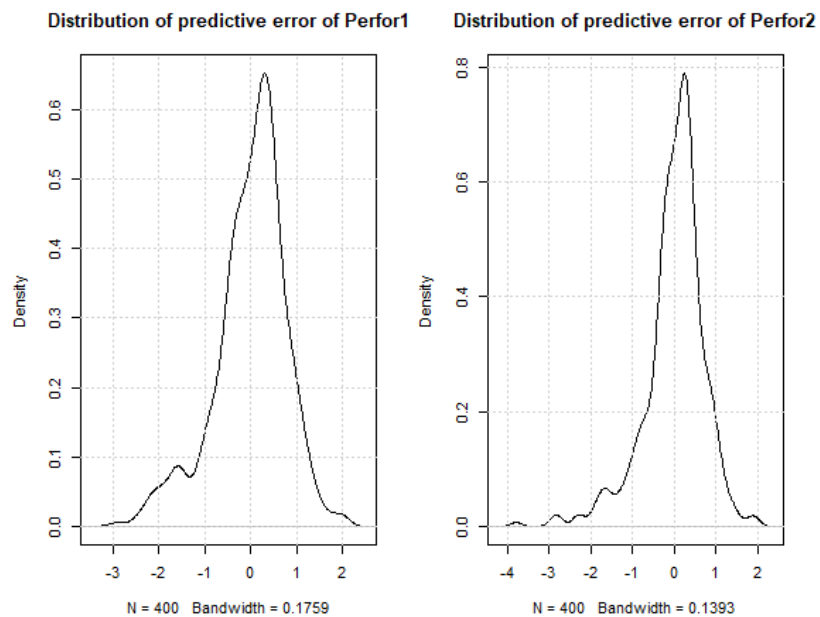
Even though Rsquared value indicate the explanatory power of the model, it is not necessary that it identifies the predictive power of the model. The reason being that R-squared indicates only the in-sample explanatory power rather than out-of-sample predictive power. The predictive power indicates the ability of the model to predict new observations. The PLS predict is a technique in the PLS algorithms which holds out part from the sample based on a k-fold cross validation, where k is the number of the sub-groups to which the total sample is divided equally. If the k is ten, then the total sample is divided into ten equal parts, and the calculation is then performed ten times, in each time one subsample is held out from the calculation. That is, in the first fold, the first subgroup is held, in the second fold, the second subgroup is held from the calculation and so on.

As mentioned in the methodology chapter, the assessment of the predictive power depends on the symmetrical distribution of the prediction errors. If they are

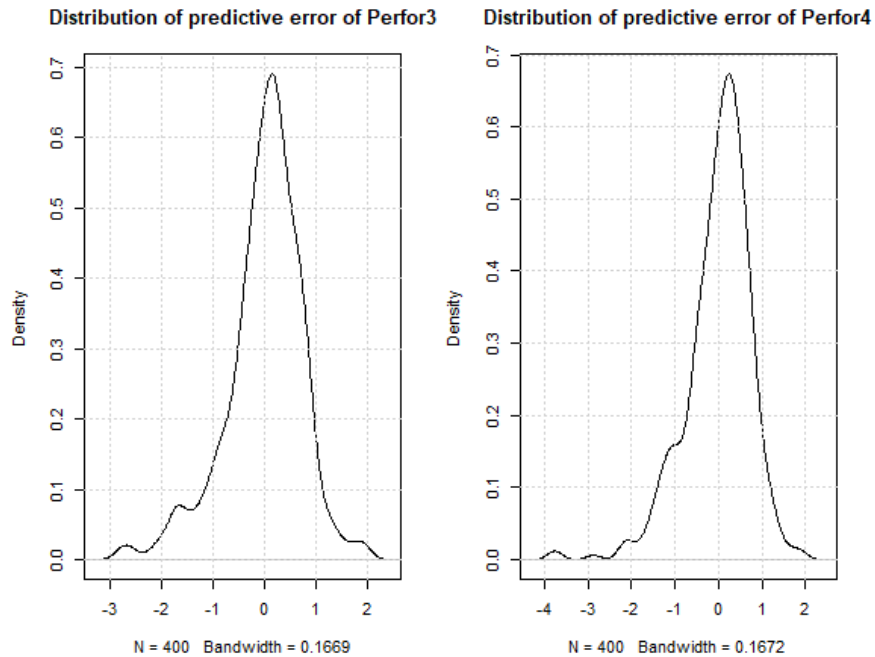
symmetrically distributed, the root mean square error (RMSE) is used, to compare the naïve linear regression model (LM) benchmark with the PLS-SEM model, in order to look for the lowest errors in the model. While if they are not symmetrically distributed, the mean absolute errors (MAE) are used to compare the two models.

The chart below (Figure 4-6) shows the distribution of the prediction errors of the dependent variable. The prediction errors seem to be mildly skewed to the right with a small left tail, they are considered rather symmetrical, which means the Mean Absolute Errors (MAEs) are used in the comparison to identify the predictive power of the model.

Figure 4-6: Symmetrical distribution of prediction errors.



Source: primary data analysis (SEMinR package).



Source: primary data analysis (SEMinR package).

The rule of thumb is that if PLS-SEM model has lower errors in all the indicators, the model is said to have a high predictive power, and a medium predictive power if it has lower errors in majority of the indicators, and a low predictive power if the errors are less in minority of the indicators, and the model has no predictive power if the PLS-SEM has lower errors in none of the indicators.

The table below (Table 4-49) shows the prediction errors of both PLS-SEM and LM models. Deducting the errors of PLS-SEM model from the errors of the LM model resulted in negative values, which indicates that the errors in the PLS-SEM model are lower than the errors in the LM model for all the indicators, which indicates that the model has a high predictive power.

Table 4-49: The predictive power of the research model.

Items	PLS MAE	LM MAE	PLSRMSE - LMRMSE
PG	0.781	0.788	-0.007
PI	0.734	0.742	-0.008
IP	0.739	0.741	-0.002
LGP	0.745	0.75	-0.005

Source: primary data.

4.9 Mediation analysis

The mediation analysis is the assessment of the role that the mediating variable plays in the relationship between two other variables. The output of mediation analysis could be partial mediation, full mediation or no mediation at all.

In this study, three variable are assessed to check their mediating role in the relationship between decision making practices and the performance of manufacturing SMEs. The first variable is, organizational learning – where the literature provides evidence that organizational learning mediates the relationship between decision making practices and SMEs performance, therefore the aim is to check the same role in the Yemeni context.

The second mediating variable is, adopting information technology in the decision making process. The literature presents evidence that it mediates the relationship between decision making practices and the performance of manufacturing SMEs, and hence the same is checked in the context of an underdeveloped economy such as Yemen.

The third mediating variable is, traditional decision making. The literature opines that, adhering to decision making practices implies avoiding the traditional methods of making a decision. Hence, a full mediation is expected for the adherence to

traditional style of making a decision in the relationship between decision making practice and the performance of manufacturing SMEs.

The steps to conduct mediation analysis is well explained in the methodology chapter. However, the steps are summarized and presented below;

- a) Assessing the direct effect without including the mediating variables.
- b) Assessing the indirect effect (which is the effect of the independent on the dependent variable through the mediators).
- c) Assessing the direct effect again but with the presence of the mediating variables.

Based on these three steps the mediation is assessed to identify if it exists as partial or full mediation or if it does not exist.

4.9.1 Direct effects

In the table below (Table 4-50), the direct effect of decision making practice on the performance of manufacturing SMEs is assessed without any inclusion of mediating variables. The table shows that the estimate is 0.758, which indicates that more adherence to decision making practices leads to better performance among manufacturing enterprises. The bootstrapped estimate of 0.760 confirms the consistency of the estimate. The t statistics ($t = 24.832$), the p value being less than 0.05, and the confidence intervals (2.5% CI = 0.696 and 97.5% CI = 0.815) indicate that the direct effect of decision making practices on the performance of manufacturing SMEs is statistically significant. This leads us to conclusion that there is a possibility to check mediation, hence the mediation assessment is moved to the second step.

Table 4-50: The direct effect without the mediator.

Path		Original Est.	Bootstrap Mean	p	T Stat.	2.5% CI	97.5% CI	
DMPs	->	SMEsP	0.758	0.76	< 0.01	24.832	0.696	0.815

Source: primary data.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

4.9.2 Indirect effects

In the second step of the mediation analysis, the indirect effects are assessed. The table below (Table 4-51) shows the indirect effects, that is, the impact of decision making practices on the performance of manufacturing SMEs through three mediating variables.

As shown in the table below (Table 4-51), the estimate of the impact of decision making practices on SMEs performance through organizational learning is – 0.006 which indicates there is no relationship between the two variables through organizational learning. The bootstrapped estimates is -0.004 indicating the same output. The t statistics (t = -0.388), the p value being higher than 0.05 and confidence intervals (2.5% CI = -0.037 and 97.5% CI = 0.030) indicate that there is no significant indirect effect of decision making practices through organizational learning on the performance of SMEs.

Similarly, the estimate of the impact of decision making practices on SMEs performance through adopting information technology in decision making is 0.062 which indicates there is a very low relationship between the two variables through adopting information technology in decision making. The bootstrapped estimate is 0.066, indicating the same output. The t statistics (t = 1.533), the p value being higher than 0.05 and confidence intervals (2.5% CI = -0.012 and 97.5% CI = 0.148)

indicate that there is no significant indirect effect of decision making practices by adopting information technology in decision making on SMEs performance.

Finally, the estimate of the impact of decision making practices on SMEs performance through adopting traditional decision making practices is 0.028 which indicates that there is a very low relationship between the two variables through adopting traditional decision making practices. The bootstrapped estimate is 0.028 indicating the same output. The t statistics ($t = 1.510$), the p value being higher than 0.05 and confidence intervals (2.5% CI = -0.008 and 97.5% CI = 0.064) indicate that there is no significant indirect effect of decision making practices through adopting traditional decision making practices on SMEs performance.

This leads us to the conclusion that there is no mediating role of organizational learning, adopting information technology in decision making, and the adoption of traditional decision making practices in the relationship between decision making practices and the performance of manufacturing SMEs in an underdeveloped economy like Yemen. This also implies that the impact of decision making practices is not significant through other variables which means it is a direct impact only.

Table 4-51: The indirect effects through the mediators.

Indirect path	Original Est.	Bootstrap Mean	p	T Stat.	2.5% CI	97.5% CI
Effect through Organizational Learning	-0.006	-0.004	> 0.05	-0.388	-0.037	0.030
Effect through IT in DM	0.062	0.066	> 0.05	1.533	-0.012	0.148
Effect through Traditional DM Style	0.028	0.028	> 0.05	1.510	-0.008	0.064

Source: primary data.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

4.9.3 Direct effect with the presence of mediators

Even though the indirect effects were found insignificant which indicates that there is no mediating role of the three variables (Organizational learning, adopting information technology in decision making and adopting traditional decision making practices), the direct effect is assessed with presence of mediators. The table below (Table 4-52) shows that the estimate of the impact of decision making practices on the performance of manufacturing SMEs in the presence of the three mediating variables is 0.637, which indicates that an increase in adhering to decision making practices leads to an increase in the performance of manufacturing SMEs. The bootstrapped estimate is 0.638 which shows the consistency of the estimate. The t statistics ($t = 10.204$), the p value being less than 0.05 and confidence intervals (2.5% CI = 0.515 and 97.5% CI = 0.759) indicate that the impact of decision making practices on the performance of manufacturing SMEs in the presence of the mediators is statistically significant.

Therefore, it can be concluded that there is no mediating role of organizational learning, adopting information technology in decision making and adopting traditional decision making practices in the relationship between the decision making practices and the performance of manufacturing SMEs. This also implies that the impact of decision making practices on the performance of manufacturing SMEs is “direct effect” only.

Based on this, it can be stated that the hypothesized statements (H11a, H11b, and H11c) are all supported since no mediating role is observed for the three variables in the relationship between decision making practices and the performance of

manufacturing SMEs. Hence, we fail to reject the three hypotheses (H11a, H11b, and H11c).

Table 4-52: The direct effect with the presence of the mediator.

Path	Original Est.	Bootstrap Mean	p	T Stat.	2.5% CI	97.5% CI
DMPs -> SMEsP	0.637	0.638	0.001	10.204	0.515	0.759

Source: primary data.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

4.10 Moderation analysis

As mentioned earlier in the methodology chapter, moderation analysis aims to identify how the relationship between decision making practices and the performance of manufacturing SMEs is impacted by entrepreneurial competencies and the willingness of managers for further education or training in management and entrepreneurship as moderating variables. The aim is to identify the difference in the relationship between decision making practices and SMEs performance based on the levels of entrepreneurial competencies and the willingness for further management/entrepreneurship education among the managers of manufacturing SMEs.

The table below (Table 4.53) shows that the estimate of the interaction effect of entrepreneurial competencies is -0.038 which indicates that there is barely any relationship between the interaction effect and the dependent variable. The t statistics ($t = 0.891$), the p value being higher than 0.05 and confidence intervals (2.5% CI = -0.043 and 97.5% CI = 0.125) indicate that the effect of the interaction effect on the performance of manufacturing SMEs is not statistically significant. Therefore, it can be concluded that there is no moderating role of entrepreneurial

competencies on the relationship between decision making practices and SMEs performance. In other words, whether there are low or high entrepreneurial competencies among managers in manufacturing SMEs, the impact of adhering to decision making practices remains the same.

As for the interaction effect of willingness of managers for further education or training in management/entrepreneurship, the table below (Table 4-53) shows that the estimate of the interaction effect is -0.022 which indicates almost an absence of any relationship between both variables. The t statistics ($t = -0.492$), the p value being higher than 0.05 and confidence intervals (2.5% CI = -0.492 and 97.5% CI = 0.057) indicates that the impact of the interaction effect is not statistically significant. This means that the relationship of decision making practices with manufacturing SMEs performance is not moderated by the willingness of the managers for further education or training in management/entrepreneurship. In other words, whether managers possess low or high willingness for further education or training in management/entrepreneurship, the impact of decision making practices on SMEs performance remains the same.

This leads to supporting the two hypothesized statements (H12a and H12b), as no moderating role is observed for the two moderating variables in the relationship between decision making practices and the performance of manufacturing SMEs, hence, we fail to reject the two hypotheses (H12 a and H12b).

Table 4-53: Th interaction effects of the moderators.

Path	Original Est.	Bootstrap Mean	p	T Stat.	2.5% CI	97.5% CI
Interaction effect of Entrepreneurial Competencies	0.038	0.04	0.001	0.891	-0.043	0.125
Interaction effect of willingness for further education and training	-0.022	-0.025	0.001	-0.492	-0.116	0.057

Source: primary data.

Note: The null hypothesis is unsupported when the value of probability (p) is below 0.05, or the value of (t) is greater than 1.96, or both confidence intervals (2.5% CI and 97.5%CI) do not include t zero value (both values must be positive), otherwise, it is considered supported.

4.11 Summary of hypothesis testing

4.11.1 DMPs adoption

The table below (Table 4-54) shows the result of testing the first hypothesis with respect to the extent and level of adopting decision making practices and the performance of SMEs.

Table 4-54: Summary of hypotheses testing (DMPs adoption)

No.	Hypothesis	decision
H1	Decision making practices are moderately adopted among managers and owners of manufacturing SMEs in Yemen	Partially Supported

Source: primary data.

4.11.2 Differences in adopting DMPs

Th table below (4-55) exhibits the results of testing the second main hypothesis about the variance in decision making practices adoption as well as the performance of SMEs according to the demographic characteristics of respondents/enterprises.

Table 4-55: Summary of hypotheses testing (differences in adopting DMPs and performance)

No.	Hypothesis	decision
H2	There are no significant differences in adopting decision making practices and performance among managers of Yemeni manufacturing SMEs when they are evaluated according to the demographics of managers and SMEs	Partially supported
H2a1	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to the establishment year.	Supported
H2a2	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to the Scope of operation.	Unsupported
H2a3	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to the manufacturing field.	Supported
H2a4	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to the employee count.	Fail to Supported
H2a5	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to ownership.	Unsupported
H2a6	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to the age of managers.	Unsupported
H2a7	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to the qualification of managers.	Supported
H2a8	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to the position of managers.	Unsupported
H2a9	There are no significant differences in adopting decision making practices among managers of Yemeni manufacturing SMEs when they are evaluated according to the experience of managers.	Supported
H2b1	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to the establishment year.	Supported
H2b2	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to the Scope of operation.	Unsupported
H2b3	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to the manufacturing field.	Supported
H2b4	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to the employee count.	Supported
H2b5	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to ownership.	Unsupported

No.	Hypothesis	decision
H2b6	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to the age of managers.	Supported
H2b7	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to the qualification of managers.	Supported
H2b8	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to the position of managers.	Unsupported
H2b9	There are no significant differences in the performance of Yemeni manufacturing SMEs when they are evaluated according to the experience of managers.	Unsupported

Source: primary data.

4.11.3 Impact on SMEs performance

The table below (Table 4-56) presents the results of testing the third and fourth hypothesis which are relating to the impact on SMEs performance caused by the independent variables in the research model.

Table 4-56: Summary of hypotheses testing (Impact of SMEsP)

No.	Hypothesis	decision
H3	There is a significant positive impact of the decision making process steps on the performance of manufacturing SMEs	Partially supported
H3a	There is no significant positive impact of diagnosing the problem on the performance of manufacturing SMEs	Unsupported
H3b	There is no significant positive impact of developing alternatives on the performance of manufacturing SMEs	Supported
H3c	There is no significant positive impact of evaluating alternatives on the performance of manufacturing SMEs	Supported
H3d	There is no significant positive impact of choosing best alternative on the performance of manufacturing SMEs	Unsupported
H3e	There is no significant positive impact of implementing the alternative on the performance of manufacturing SMEs	Unsupported
H3f	There is no significant positive impact of Monitoring the decision effectiveness on the performance of manufacturing SMEs	Unsupported
H4	There is no significant positive impact of the strategic practices of decision making on the performance of manufacturing SMEs.	Unsupported
H4a	There is no significant positive impact of evaluating current performance on the performance of manufacturing SMEs.	Unsupported

No.	Hypothesis	decision
H4b	There is no significant positive impact of evaluating managerial performance on the performance of manufacturing SMEs.	Unsupported
H4c	There is no significant positive impact of evaluating managers' performance on the performance of manufacturing SMEs.	Unsupported
H4d	There is no significant positive impact of strategic analysis of internal resources on the performance of manufacturing SMEs.	Unsupported
H4e	There is no significant positive impact strategic analysis S.W.O.T. on the performance of manufacturing SMEs.	Unsupported

Source: primary data.

Models comparison:

The table below (Table 4-57) shows the result of testing the hypotheses (5-10) along with a comparison of such hypotheses across the three run models.

Table 4-57: Comparing the results of the three models.

No.	Hypothesis	decision		
		Model1	Model2	Model3
H5	There is no significant positive impact of decision making practices on the performance of manufacturing SMEs.	Unsupported	Unsupported	Unsupported
H6	There is no significant positive impact of Organizational learning on the performance of manufacturing SMEs	Supported	Supported	Supported
H7	There is no significant negative impact of traditional decision making practices on the performance of manufacturing SMEs	Supported	Supported	Supported
H8	There is a significant positive impact of using IT in decision making on the performance of manufacturing SMEs	Supported	Unsupported	Supported
H9	There is no significant positive impact of entrepreneurial competencies of managers/owners on the performance of manufacturing SMEs	Unsupported	Unsupported	Unsupported
H10	There is no significant positive impact of willingness of managers towards further education/training in management on the performance of manufacturing SMEs	Supported	Supported	Supported

Source: primary data.

4.11.4 Mediation analysis

The following table (Table 4-58) shows the results of testing the eleventh hypothesis which is related to investigating the mediating role of the three mediating variables.

Table 4-58: Summary of hypotheses testing (Mediating analysis)

No.	Hypothesis	decision
H11a	There is no significant mediating role of traditional decision-making practices in the relationship between decision making practices and the performance of manufacturing SMEs.	Supported
H11b	There is no significant mediating role of organizational learning in the relationship between decision making practices and the performance of manufacturing SMEs.	Supported
H11c	There is no significant mediating role of technology use in Decision Making in the relationship between decision making practices and the performance of manufacturing SMEs.	Supported

Source: primary data.

4.11.5 Moderation analysis

The table below (Table 4-59) shows the result of investigating the last hypothesis (H12) which is related to investigating the moderating role of the tow moderators in the research model.

Table 4-59: Summary of hypotheses testing (Moderation analysis)

No.	Hypothesis	decision
H12a	There is no significant moderating role of entrepreneurial competencies among managers over the relationship between decision making practices and the performance of manufacturing SMEs.	Supported
H12b	There is no significant moderating role of perception towards further education among managers over the relationship between decision making practices and the performance of manufacturing SMEs.	Supported

Source: primary data.

4.12 Discussion

The study aimed at investigating the extent of adopting decision making practices among manufacturing small and medium enterprises in Yemen. The reason behind such investigation is the importance of managerial practices in general and decision making practices in particular, what maximizes such importance is the current conditions witnessed in the country – consisting of instability and lack of support and guidance towards facilitating business operations for manufacturing SMEs.

The sector of SMEs shouldered the biggest hit during the instability going on in the country, where enterprises were severely impacted by partial; or complete damage, business closure, or re-location of the business operations. Research indicates that SMEs severely suffered such obstacle during the current instability (Saleh & Manjunath, 2020f). This draws the focus towards the importance of decision making practices that can be imparted/adopted among small and medium enterprises, where they would participate in reducing/avoiding the impact of the challenges/obstacles relating to the instability and violent conflict going on in the country.

This study attempted to measure the extent of decision making practices adopted among manufacturing SMEs, in order to quantify how sufficient it is for SMEs to keep on making contributory decision with respect to business operations, or to specify the need for adhering to the sound and effective decision making practices.

By using standardized scales to measure the decision making practices, the result reveals that there is a low to moderate adoption of decision making among manufacturing SMEs. This is consistent with what has been reported in the literature about the status of management in general and decision making practices/process in

particular among the developing countries and least developed countries. Such low attitude/tendency towards adopting managerial practices in general and decision making practices in particular could stem from many factors that result from adopting less managerial practices among small and medium enterprises.

Lemos, & Scur, (2012) indicated that best management practices are spread in developed countries where less managerial practices are adopted among firms and companies in developing countries where assuming the link between firm management and productivity will lead to assuming that poor management practices, that can be a cause/result of lower development levels in many countries (Lemos & Scur, 2012).

African countries, for instance, are ranked in the bottom for adopting management practices, similarly, the same is applicable when considering underdeveloped economies. This does not necessarily mean that there are no better managed firms but the coexistence of badly managed firms drags the country average in the rank regarding management practices (Lemos & Scur, 2014). In addition to this, research indicates that it is problematic to apply western management theories in developing countries due to the complexity of national environmental forces (Shafter & Abdelmotleb, 2017).

However, when focusing on managers, research reveals that managers in the private sectors prefer to rely on analysis and adopting data driven decisions to support budget decisions without relying on bargaining, while managers in the public sector rely more on experience and bargaining without relying on analysis and data (Nutt, 2005).

The importance of human resource in an underdeveloped country such as Yemen is still in need of awareness and education to gain insights on the strategic role of

employees in the success or failure of the business strategy (Muharram, 2007). The Yemeni raising generation is described by the United Nations as the one lacking the necessary cognitive skills to engage in entrepreneurial undertakings (UNDP, 2011), and this is a major challenge/obstacle faced by enterprises (Al-Maqaleh, 2012).

In the general context, the workforce in Yemen (one-third of the labour force) have secondary or tertiary educational attainment. Qualification mismatch has affected the main job of majority (83%) of working population. About half of all employed individuals in the country are employees or work for others, and around 42.4 percent are either own-account or contributing family workers (ILO, 2015).

Moreover, Yemen has been in the tail of the human development index (HDI) as it was ranked 160 during 2013 and declined to become the 178th during 2018, to end up in the category of “very low development”, due to the active war events in the country (UNDP, 2013; 2018).

The educational level of employees in the departments of human resource management is also very low in terms of qualification, specialization which is considered better in the private sector (Al-Jaadabi, 2012). Enterprises in developing countries have "Inadequately educated workforce" which is one of the issues faced by enterprises in Yemen, it is further reported that workforce lack the required skills, which necessitates more training on the job (World Bank, 2015).

The educational outcomes in Yemen are not well prepared for the job market which creates a gap between the education system and the needs of employers; despite the fact that, higher education kept growing in Yemen during the last decade but not in a way to serve the job market (Toki & Qadhi, 2015). University graduates have weak points as per the aspects of scientific majors, English language and

computer which could force employers to re-train them or put them in mismatching jobs, plus they may invite foreign employees (Kolaib, 2002).

Such factors may be associated with lacking the knowledge about the importance of the adopting sound and effective managerial practices in general and decision making practices in particular for the purpose of boosting the performance of enterprises leading to their resurgence as major contributors in the economy of Yemen. Further, boosting the possibility of adopting better and sound decision making practices among manufacturing enterprises can be contributory through establishing strategies that aim to educate owners and managers of manufacturing SMEs about the competitive advantages that could be achieved by adhering to sound and effective managerial practices.

Establishing an authority that is directly related to supervising and guiding small and medium enterprises, where, providing such support and guidance can facilitate the possibility of developing the performance of manufacturing SMEs through maintaining a conducive business environment and providing sufficient incentive, and protection for SMEs to function, and compete for the chances of achieving competitive advantages and economic development in the business sector.

When investigating the relationship of decision making practices with other variables in the research study, the results revealed that decision making practices are highly related to the performance of manufacturing SMEs (which is the main focus of this study). Further, decision making practices are found to be moderately and positively correlated with entrepreneurial competencies of managers/owners, organizational learning, using information technology in decision making, and the willingness of managers and owners for pursuing further education or training in management and entrepreneurship. Moreover, the decision making practices are

found to have a low relationship with the traditional decision making style, which is logical, as the tradition decision making does not involve sound and effective decision making practices.

As for the assessment of the causal relationship of the performance of manufacturing SMEs with the other dependent variables is concerned, it is observed that decision making practices and entrepreneurial competencies of managers have a significant impact on SMEs performance. This indicates that the increase or improvement in the adoption of decision making practices leads to an increase in the performance of SMEs. Further, if the managers/owners have more entrepreneurial competencies, their enterprises tend to have better performance.

This is consistent with previous literatures where decision making practices have been studied and investigated to have a significant and positive impact on SMEs performance in developed and developing countries.

However, organizational learning is not found as a significant influential factor on the performance of manufacturing SMEs. This is inconsistent with the previous research that exhibits a significant role of organizational learning in improving the performance and innovation of SMEs (Tian, et al., 202; Gomes & Wojahn, 2017).

Organizational learning contributes significantly towards enhancing the innovation capability among SMEs (Salim & Sulaiman, 2011) and entrepreneurial orientation among SMEs (Altinay, et al., 2016). However, the role of organizational learning in developing the performance of SMEs being insignificant has also been reported in different contexts in the literature (Gomes & Wojahn, 2017). The traditional decision making style has no significant impact on SMEs performance. This is logical as adopting sound and effective decision making practices are supposed to replace the traditional way of making decisions. Simon, (1960) states

that traditional decision making involves making decision by habit, adopting the rule of thumb, making decision by intuition and judgement, where no scientific or modern process is followed for the purpose of having an effective decision.

Using information technology in the decision making is not found to be significantly influencing the performance of manufacturing SMEs. This differs from the results drawn in the decision making literature as decisions tend to become more intuitive and prone to biases when using more systematic technology (Parasuraman & Manzey, 2010). Further, information technology significantly plays a role in improving the effectiveness of decisions, which also contributes to the improvement of the reported performance of manufacturing small and medium enterprises (Molloy & Schwenk, 1995).

Lacking the access to information technology is a significant factor hindering the improvement of decisions, and hence, the performance of SMEs. However, accessing information technology but lacking their proper use, for the purpose of improving the business performance is another significant factor challenging the development of business performance.

Finally, the willingness of managers towards further education and training in management and entrepreneurship is not significantly relevant to the performance of manufacturing SMEs. This is inconsistent with previous research as it is reported that better performance of SMEs is associated with managers who have higher willingness for further education and training (Jayawarna, et al., 2007; Cruz, et al., 2009; Karadag, 2017).

This creates the need for employing training and education for the practical development of management practices, where, managers seek further training in

order to contribute to their enterprises achieving competitive advantage and significant growth.

In another aspect, the three variables of organizational learning, using information technology in decision making and traditional decision making practices have been investigated with respect to their mediating role in the relationship of decision making practices with performance of manufacturing SMEs. Results show that these variables do not play any role in mediating such relationship.

This is inconsistent with the previous research as organizational learning is proven to be influential factor on organizational performance (Idowu, 2013), further, it mediates the relationship between organizational performance and variables such as leadership style (Rehman, et al., 2019), and human resource management practices (Hooi & Ngui, 2014), as well as other types of variables (Wang, et al., 2015). However, in other contexts, this is consistent with previous research works, which has been reported to have insignificant impact on organizational performance among small and medium enterprises (Gomes & Wojahn, 2017).

In the case of the role of information technology, it is inconsistent with previous research where information technology mediates the impact on SMEs performance with high correlation with decision making (Zaqout, et al., 2018). While in the case of traditional decision making, a full mediation was expected because while adopting sound and effective decision making practices, the traditional practices are avoided due to less effectiveness with respect to developing the performance of SMEs. Even though the traditional decision making is commonly adopted in Arab

societies (Ali, 1993), it does not mediate the impact of decision making practices on the SMEs performance.

This can be attributed to, the low level of adhering to the sound and effective decision making practices among SMEs, in an underdeveloped country like Yemen. Further, functioning in an underdeveloped business environment implies lacking access to information technology and the possibility of encouraging organizational learning. This exhibits the absence of the impact of organizational learning and using information technology in decision making, as organization learning and adopting information technology require more resources for the enterprises to be employed for the purpose of boosting the performance and achievement of competitive advantage.

When considering the moderation analysis, the role of entrepreneurial competencies and the willingness of managers towards further education and training is assessed to identify how these two variables moderate the impact of decision making practices on the performance of manufacturing SMEs. The result reveals that the interaction effects of these two variables are insignificant, which indicates that there is no moderating role of both variables in the relationship of decision making practices and the performance of manufacturing SMEs. It is inconsistent with results of previous research works, where entrepreneurial competencies have significant influence on SMEs performance (Mitchelmore & Rowley, 2010; Ahmad, et al., 2010; Aliyu, 2017; Abaho, et al., 2016). It is also inconsistent with previous research in the case of willingness of managers for further education and training, where better performance of SMEs is associated with managers who have higher willingness for further education and training (Jayawarna, et al., 2007; Cruz, et al., 2009; Karadag, 2017).

Chapter Five: Findings, Suggestions and Conclusion

5.1 *Findings of the study*

This section presents the major findings reached by the study in relevance to the Yemeni context. The findings are organized based on the demographic characteristics of enterprises and managers, the analysis of responses, the analysis of variance in the decision making practices as well as the performance of manufacturing SMEs in Yemen and finally, the hypothesis testing set for the study.

First objective: To explore the extent of adopting decision making practices among small and medium manufacturing enterprises in Yemen.

- It is found that there is a low extent of practising the diagnosis of problems for better decision making (Mean = 5.33), which implies lower attention being paid towards the importance of diagnosing and analysing the problems and their symptoms that create the need for a sound and effective decision.
- It is observed that the practice of developing alternatives is not widely practiced among manufacturing SMEs where it is moderately adopted by managers (Mean = 5.35), which may hinder the decision making process by leading to making less effective decisions.
- It is found that evaluating the available alternative solutions to a problem is moderately practiced by managers and owners of manufacturing SMEs (Mean = 5.28), where the effectiveness of the alternative is the most evaluated component and formulating the expected outcome is the least evaluated component.

- Choosing the most suitable alternative for decision making is practiced at a low to moderate level among managers of manufacturing SMEs in Yemen (Mean = 5.36), where the most practiced component is exchanging thoughts and ideas in the process of selecting the most appropriate alternative while taking the various points of view of the team members is the least practiced component.
- It is observed that the implementation of the proposed solution in the decision making process is moderately adopted among managers of manufacturing SMEs in Yemen (Mean = 5.26), where seeking experts' opinion with respect to implementing the solution is the most adopted practice, while presenting the required procedures for implementing the decisions is the least practiced component.
- It is observed that monitoring the decision implementation and its effectiveness is not widely adopted by managers of manufacturing SMEs in Yemen (Mean = 5.14), where collecting feedback about the decision implementation is the most practiced among other components, and relying on specific criteria to measure the successful implementation of the decision is the least practiced component.
- The strategic practice of evaluating the current performance is moderately adopted and followed by managers of manufacturing SMEs in Yemen (Mean = 5.40), where evaluating the results of the current performance is the least practiced component and evaluating the success in accomplishing the strategic goal of the enterprise is the most practiced component.
- It can be stated that evaluating the managerial performance among manufacturing SMEs included in this study is low to moderate in practice (Mean = 5.33), where possessing an evaluation form for the managerial performance evaluation is the least practiced component and treating the evaluation of managerial performance as a priority in the agenda of the enterprise is the most practiced component.

- It is also found the strategic practice of evaluating the performance of managers is adopted at the low to moderate level among manufacturing SMEs in Yemen (Mean = 5.12), where creating changes in the membership of the board of directors based on efficiency is the least adopted component and working towards attracting executives based on their efficiency is the most practiced component.
- Regular evaluation of internal resources is not largely adopted among manufacturing SMEs in Yemen (Mean = 5.33), where the regular evaluation of skills, knowledge and functional expertise of human resources is the least practiced component among manufacturing SMEs, while ensuring the regular evaluation of financial resources is the largely practiced component.
- It is found that there is a low level of the strategic analysis of strengths, weaknesses, opportunities and threats among manufacturing SMEs in Yemen (Mean = 5.15), where such analysis is not a large priority of enterprises and, however, attention is moderately paid to evaluate strength, weakness, opportunities and threats of the enterprises regularly.
- There is low growth in the performance of manufacturing SMEs in Yemen (Mean = 4.94), where the number of permanent employees does not increase, and satisfaction of their customers slowly grows, and similar improvement is observed in achieving positive growth.
- When asking managers to rate the general performance of enterprises during the last five years, it is found that there is a low level of performance improvement among manufacturing SMEs (Mean = 5.06), where low growth is associated with the increase in customers, sales and the improvement of general performance.

- It is revealed that there is a low level of improvement in the internal performance among manufacturing SMEs (Mean = 5.07), where a low rate of improvement is observed in reducing defective products and improving the technology used in operations among manufacturing enterprises.
- Manufacturing SMEs score a low level of the performance of learning growth in the enterprises (Mean = 4.96) where a very low performance is observed with respect to improvement of employees' happiness and loyalty, gathering information about customers, reducing the employee turnover, increasing the number of suggestions.
- Organizational learning is moderately adopted and practiced among manufacturing SMEs in Yemen (Mean = 5.34), where the most practiced component is basing the improvement on the ability to learn among employees and the least practiced component is the encouragement of the enterprises for employees to communicate with the external environment.
- There is a very low practice of traditional decision making where the decision making process is not followed among manufacturing SMEs in Yemen (Mean = 4.43), where the most adopted practice is avoiding the decision if it is avoidable, and the least adopted practice is considering the self convince enough to make the decision instead of convincing the team members with the importance and effectiveness of the decision.
- It is found that adopting and utilizing information systems in the decision making is very low (Mean = 5.05), where the least adopted practice is considering information technology tools as influential in the decision making process, and the most adopted practice is considering information technology tools and systems helpful in improving the decision making process among enterprises.

- It is observed that there is a low to moderate level of entrepreneurial competencies among managers of manufacturing SMEs in underdeveloped economies such as Yemen (Mean = 5.36), where the most possessed competence is orienting plans to be flexible with the needs and requirements of the enterprises and the least possessed competence is dedicating the time and efforts towards the assignments regardless of how other conditions are observed in the process.
- It is also observed that there is a low to moderate tendency for pursuing further training and education in the field of management and entrepreneurship in order to develop the managerial and entrepreneurial abilities among managers in manufacturing SMEs in an underdeveloped economy like Yemen (Mean = 5.25).
- When investigating the demographic variables, it is observed that the majority of sampled enterprises are medium enterprises that employ more than sixty workers (32.5%), 45.5% of SMEs were established during 2001 – 2010, which makes them around two decades old. 88.5% are functioning in the domestic level market. 28.8% of manufacturing SMEs in Yemen majorly engage in food processing activities.
- When investigating the characteristics of managers, only 10% of manufacturing SMEs have female managers and owners. Young managers among manufacturing SMEs are not observed to be common in the Yemeni context. Most respondents (36.75%) have the position of general managers. Possessing a bachelor's degree is the most common qualification among managers (58.3%). 48.3% of enterprises are run by managers who possess experience of five to ten years. A moderate section of the sampled managers (36.5%) possess ownership in the manufacturing SMEs they are running.

Objective 2: To explore the differences in adopting/applying decision making practices among manufacturing SMEs when evaluated according to their demographic characteristics.

- Adopting DMPs among manufacturing SMEs differs when enterprises are evaluated according to the scope of operation ($p < 0.05$), while it is the same when they are evaluated in terms of other demographic characteristics such as period of establishment, manufacturing field, and size of enterprise ($p > 0.05$).
- Managers of manufacturing SMEs in Yemen adopt similar DMPs when evaluating them based on their qualification and experience ($p > 0.05$), while their practices differ certainly when it is based on their ownership, age, and position ($p < 0.05$).
- Evaluating the performance of manufacturing SMEs in Yemen according to the enterprises' characteristics, only the scope of operation is found to influence in differentiating the performance among the different scopes of operations ($p < 0.05$), while no difference in performance is observed based on the other characteristics; which are, year of establishment, manufacturing field, and the number of employees ($p > 0.05$).
- The performance of manufacturing SMEs in Yemen is not influenced by the experience and qualification ($p > 0.05$), rather significantly influenced by the nature of stake or ownership, position and the age of managers ($p < 0.05$).

Objective 3: To identify the impact of the decision-making practices on the performance of manufacturing SMEs

- It is found that the decision making practices are significantly influencing the performance of manufacturing SMEs ($\beta = 0.637$, Bootstrapped $\beta = 0.638$, and $p < 0.01$), which means that the increase in the adoption of decision making practices results in improved performance among manufacturing SMEs.
- It is observed that organizational learning is not significantly influencing the performance of manufacturing SMEs in Yemen ($\beta = -0.035$, Bootstrapped $\beta = -0.030$, and $p > 0.05$), which means that the increase in organizational learning does not necessarily lead to an improvement in the performance of manufacturing SMEs.
- The performance of manufacturing SMEs is observed not to be significantly influenced by the traditional decision making practices ($\beta = 0.069$, Bootstrapped $\beta = 0.070$, and $p > 0.05$), which means that the current adoption or neglect of the traditional decision making practices is not reflected on the performance of manufacturing SMEs in Yemen.
- Adopting information technology is not found to be an influential factor on the performance of manufacturing SMEs in the context of Yemen ($\beta = 0.103$, Bootstrapped $\beta = 0.108$, and $p > 0.05$), which means that enterprises can not enhance their performance by their current adoption of information technology systems in the decision making process.
- It is found that the entrepreneurial competencies of managers/owners have a significant influence on the performance of manufacturing SMEs ($\beta = 0.164$, Bootstrapped $\beta = 0.164$, and $p > 0.05$) which indicates that the increase in the

entrepreneurial competencies possessed by managers/owners of manufacturing SMEs leads to an improvement in their performance.

- It is observed that the willingness of managers for further education or training in entrepreneurship and management is not an influential factor in the performance of manufacturing enterprises ($\beta = 0.020$, Bootstrapped $\beta = 0.020$, and $p > 0.05$) which means that the change in the willingness of managers towards further training or education in management and entrepreneurship does not necessarily lead to a change in the performance of manufacturing SMEs.
- It is observed that the decision making practices adopted by manufacturing SMEs impact organizational learning in enterprises ($\beta = 0.695$, Bootstrapped $\beta = 0.696$, and $p < 0.01$), this indicates that the increase in the adoption of sound and effective decision making practices leads to an increase in the level of organizational learning in manufacturing SMEs.
- The decision making practices are found as influential factors in the traditional decision making among manufacturing SMEs ($\beta = 0.397$, Bootstrapped $\beta = 0.401$, and $p < 0.01$), which means that adopting more decision making practices leads to more traditional making practices, which is a finding that is against the expected outcome set for the role of the decision making.
- The adoption of information technology systems in the process of decision making is influenced by the decision making practices ($\beta = 0.605$, Bootstrapped $\beta = 0.607$, and $p < 0.01$), which means that an increase in the adoption of decision making practices leads to an increase in the adoption of information technology in the decision making process.

Objective 4: To identify the mediating role of traditional decision-making practices, organizational learning and information technology use in Decision Making in the relationship between decision making practices and the performance of manufacturing SMEs.

- It is observed that organizational learning does not mediate the relationship between decision making practices and the performance of manufacturing SMEs ($\beta = -0.006$, Bootstrapped $\beta = -0.004$, and $p > 0.05$), which means the impact of decision making practices on the performance of manufacturing SMEs is a direct effect only.
- It is noted that decision making practices have no indirect impact on SMEs performance through organizational learning.
- Adopting information technology in decision making, similarly, does not mediate the relationship between decision making practices and the performance of manufacturing SMEs ($\beta = 0.062$, Bootstrapped $\beta = 0.066$, and $p > 0.05$), which means the impact of decision making practices on the performance of manufacturing SMEs is a direct effect only and not indirectly through the adoption of information technology systems in decision making.
- It is noted that decision making practices have no indirect impact on SMEs performance through adopting information technology in decision making.
- The traditional decision making practices, similarly, do not mediate the relationship between decision making practices and the performance of manufacturing SMEs ($\beta = 0.028$, Bootstrapped $\beta = 0.028$, and $p > 0.05$), which means the impact of decision making practices on the performance of manufacturing SMEs is a direct effect only and not indirectly through adopting

traditional decision making practices that result in neglecting the proper, sound, and effective decision making practices.

- It is noted that decision making practices have no indirect impact on SMEs performance through traditional decision making practices.

Objective 5: To explore the moderating role of entrepreneurial competencies and managers' perception towards further education in the relationship between decision making practices and the performance of Manufacturing SMEs.

- It is found that the entrepreneurial competencies do not moderate the relationship between the decision making practices and the performance of manufacturing SMEs ($\beta = 0.038$, Bootstrapped $\beta = 0.040$, and $p > 0.01$), which means that the relationship of decision making practices with manufacturing SMEs performance is not affected by the change in the entrepreneurial competencies among managers/owners running and managing such enterprises.
- It is observed that possessing higher (or lower) entrepreneurial competencies among managers and owners of manufacturing SMEs is found independent from the effect of decision making particles on SMEs performance.
- The willingness of managers/owners for further education or training in entrepreneurship and management does not moderate the relationship between the decision making practices and the performance of manufacturing SMEs ($\beta = -0.022$, Bootstrapped $\beta = -0.25$, and $p > 0.05$), which means that the relationship of decision making practices with manufacturing SMEs performance is not affected by the change in the willingness of

managers/owners for further training and education in management and entrepreneurship.

- It is observed that possessing higher (or lower) willingness towards additional training and education in entrepreneurship and management among managers and owners of manufacturing SMEs is found independent from the effect of decision making practices on SMEs performance.

5.2 Suggestions of the study

Based on the findings and discussion realized in this study, a series of suggestions are drawn to realize improvement in the adoption of decision making practices as well as the performance of manufacturing small and medium enterprises.

- Owners and managers of manufacturing SMEs should pay more attention to the role of early investigating and diagnosing the problems that require solutions, which can lead to better and more effective decisions as well as avoiding any consequences that may occur due to making late decisions.
- Manufacturing SMEs in Yemen need to widen the use and adoption of the practices of developing alternative solutions for the problems diagnosed in the enterprises, as this practice leads to facilitating the possibility of choosing the most appropriate solution among the proposed alternatives.
- Managers/owners of manufacturing SMEs need to pay more attention to the practice of analyzing and evaluating the available and suggested alternatives as this practice leads to identifying the merits and demerits of each alternative

which in the end leads to easing the identification of which alternative can be selected among others based on its characteristics.

- When choosing the solution to a specific problem, managers/owners need to consider the characteristics of such alternatives, which include, the consequences, effectiveness and the cost of implementation, after comparing them with the other available alternatives.
- For better implementation of the decision made, managers/owners of manufacturing SMEs need to consider adopting detailed procedures and strategies to ensure the effectiveness and efficiency of the decision implementation to realize the goals set behind implementing such decisions.
- Monitoring the implementation of a decision should be widely adopted and practiced by manufacturing SMEs where criteria should be applied in such practice, collecting feedback and ensuring that the implementation of the decision was carried out as planned so as to consider the diagnosed problem as solved by achieving the effectiveness and efficiency of the implemented decision.
- Comprehensive and regular evaluation of the current performance should be widely adopted among manufacturing SMEs in Yemen, where such evaluation can lead to continuous follow-up with the improvement and enhancement required in the general performance of enterprises.
- Similarly, manufacturing SMEs should widely adopt the practice of regularly evaluating the managerial performance of the departments of the enterprises, which indicates the need to follow specific procedures and evaluation forms to ensure an effective evaluation of the managerial performance and hence improvement in the general performance of enterprises.

- Further, the performance of managers should be continuously and regularly evaluated among manufacturing SMEs which ensures their remarkable contribution to the development of the decision making and hence the development of the general performance of the enterprises.
- Internal resources of manufacturing SMEs should be regularly evaluated to ensure the ability of the enterprises to meet their internal requirement and commitment and hence be able to meet the need of customers and the market as well.
- Strategic analysis of the strengths, weaknesses, opportunities and threats should be adopted and practiced by manufacturing SMEs which ensures the ability of enterprises to function sustainably, in the long run, to realize their goals and achieve competitive advantage as well as contribute to the economic development in the country.
- Further measures should be paid attention to among manufacturing enterprises to ensure the development of their performance, such as, the satisfaction of their customers, increasing sales, attracting new customers, and increasing the number of full-time employees in the enterprises.
- Manufacturing SMEs should set criteria and strategies that aim to develop their contribution and performance during the next five years and further evaluate the criteria and strategies implemented during the last five years to ensure that the business activities are heading towards development in the long and short run.
- Further attention must be paid to developing the internal performance of manufacturing enterprises which may include adopting new techniques and methods in the business operations, adopting new technology, reducing

defective products etc. to ensure that the enterprises are able to expand in the future due to developed and prosperous internal performance.

- Manufacturing SMEs should make efforts and dedicate resources for the learning growth among their employees to maximize the chances of performance development due to continuous learning growth among human resources in the enterprise.
- Extra efforts and resources are required to be dedicated to the development of organizational learning among manufacturing enterprises which may lead to enhancing the chances of growth, innovation, and performance of manufacturing enterprises through employing innovative methods to enhance the performance.
- Managers/owners of manufacturing enterprises should limit their adoption and use of traditional decision making practices, which includes avoiding consulting the team member about the decision to be made and attempting to avoid making decisions when there is a chance they can be avoided, as such practices can lead to disadvantages observed in the performance of manufacturing enterprises.
- Managers and owners of small and medium enterprises in Yemen should work towards employing and adopting information technology systems in the process of decision making, which eases and facilitates the possibility of reaching effective decisions, which in turn, leads to enhancing the performance of manufacturing enterprises.
- It is suggested that managers and owners of small and medium enterprises try to develop their entrepreneurial skills and competencies, which makes them more innovative in running their businesses in a way to realize their goals and achieve competitive advantages.

- Similarly, owners/managers in manufacturing SMEs should seek further training and education related to entrepreneurship and management, which makes them better performers managerially in order to push the business performance in their enterprises towards further expansion and development.
- Since the least number of enterprises were established during 2011 – 2020, attention should be paid to the opportunities that facilitate the establishment of young start-ups. Such attention can be reflected in supporting the microfinance activities that enable individuals to have access to the required funds to establish their start-ups.
- Manufacturing enterprises should add to their agenda to function in the international market by seeking export of their products and services, where their chances of internationalization increase and hence improving their economic contribution to the inclusive development of the economy.
- Focusing on a trending and fast developing field could boost the performance and growth of manufacturing enterprises being a major component in the economy which contributes to the development of the country's GDP and hence economic development.
- Empowering women with respect to establishing, running and managing small and medium enterprises which can take place through hiring talented female managers, supporting women entrepreneurs in establishing their businesses and empowering females to engage and undertake entrepreneurial activities.
- Since the majority of entrepreneurs are found in the age group of 41 – 50 years, focusing the support and sponsorship is suggested towards young entrepreneurs,

which increases their dedication and passion towards founding or establishing their businesses.

- Sponsoring awareness programs with respect to the need for taking educational courses and training programs about management and entrepreneurship increases the managerial and entrepreneurial competencies among managers/owners of manufacturing small and medium enterprises in Yemen.
- Assigning the position of management and decision making positions in manufacturing enterprises should be done to managers who have sufficient experience to ensure the efficiency of the decision making process, which may lead to a fruitful outcome in the enterprises.
- Owning a part of the enterprises should not be the reason for managing the enterprises, as experience and effective management is the main goal, where owning a part of the enterprises is secondary. Hence, individuals should manage the enterprises because they are qualified rather than because they own part of the enterprise.
- It is suggested that decision making practices should be further employed to a large extent among managers/owners of small and medium enterprises to enhance the managerial as well as the general performance of manufacturing SMEs in Yemen.
- It is suggested for managers and owners of small and medium manufacturing enterprises to dedicate efforts towards developing the role of organizational learning by encouraging the participation of employees in proposing innovative methods and business ideas into the strategies of the enterprises.

- It is required to encourage the activities of internationalization among manufacturing SMEs that function in the national scope of operations so as to have better chances to participate in international activities.
- It is suggested that orientation programs should be dedicated to the importance of experience in the process of running and managing business activities among manufacturing enterprises.
- It is suggested that employees should participate in decision making process by presenting their suggestions and innovative solution to the problems encountered among manufacturing SMEs.
- Imparting organizational learning among employees can contribute to better participation in decision making in manufacturing SMEs.
- Manufacturing SMEs should build a learning culture to foster knowledge among employees and managers, which can promote the decision making process and its impact on SMEs performance.
- Managers and owners should adopt training programs to impart knowledge and promote organizational learning among employees in the enterprise.
- Avoiding traditional practices in making decisions promotes the opportunities to adhere to sound and effective decision making practices, which contributes to enhancing SMEs performance.
- Supporting the adoption of information technology in the decision making practices leads to facilitating making data-driven decisions which promotes the chances of growth and expansion of operation among SMEs.
- It is suggested that government should support and facilitate the adoption of information technology in the corporate sector, more particularly in small firms

where their chances of achieving competitive advantage can be achieved by utilizing information technology.

- Involving the decision making with managers who possess higher entrepreneurial competencies can boost the effectiveness and contribution of decision making among manufacturing SMEs.
- Engaging managers and owners in workshops that enrich their knowledge with respect to entrepreneurial and managerial development would contribute to improving their ability to put their knowledge into practice while making decision to promote the survival and performance of SMEs.

5.3 Conclusion

Small and medium enterprises still need to pay further heed to adopting the decision making practices which facilitates their opportunities of making sound and effective decisions. The low level of adherence to adopting decision making practices is not found to be contributory towards enhancing the performance of manufacturing enterprises. More adherence to decision making practices leads to achieving significant advantages with respect to the performance of manufacturing SMEs; since the study outcome evidenced that the decision making practices, when largely adopted, lead to achieving around 60% of the improvement in the performance growth. The importance of adherence to such practices arises from the fact that small and medium enterprises are functioning in an unstable and unpredictable business environment. The United Nations reported that around 27% of small and medium enterprises in Yemen ended up closing their business due to relocating their business on account of the ongoing war in the country. Hence, making sound and effective decisions must rely on specific processes rather than traditional practices.

Experience alone, regardless of being an important factor, is not sufficient enough to make effective decisions without jeopardizing the business performance of an organization. Therefore, information technology, scientific process, and data are used to facilitate the process of making effective decisions that positively and efficiently impact the performance of firms and companies, be it developed, developed, or any underdeveloped countries like Yemen.

Small and medium enterprises in underdeveloped economies can achieve competitive advantages and development of their performance when they adhere to

sound and effective management practices in general and decision making practices in particular. Such practices allow them to efficiently manage their resources to realize their objective with respect to improving their business performance which is reflected in the creation of jobs and generation of income, realizing inclusive development and economic welfare in the society.

Traditional decisions making is still adopted among manufacturing SMEs in Yemen, where the decision making process sometimes is not followed as practices such as developing alternative solutions and evaluating available alternatives are not widely adopted and are not significantly contributing to the development of the performance of the enterprises.

Organizational learning is not widely oriented in manufacturing; even if it is oriented to a moderate level, it is not contributing to the enhancement of the performance of the enterprises. Organizational learning is supposed to play a significant role in improving the performance of firms and companies in developing economies.

The extent of adopting information technology in the process of decision making among manufacturing SMEs is very limited. Dedicating further efforts towards adopting information technology systems in the decision making process can facilitate the possibility of making more and more effective decisions when they are based on a systematic process, data as well as experience of the decision makers.

Entrepreneurial competencies are commonly possessed by managers of manufacturing SMEs in Yemen; however, managers are required to utilize such competencies in favour of running their business activities to achieve expansion, growth and development in the manufacturing sector. Finally, Managers and owners of manufacturing SMEs are supposed to follow and seek further training regarding

trends and developments in the managerial and entrepreneurial fields so that they can utilize such knowledge and capabilities in running their enterprises successfully and focus towards achieving competitive advantages and realizing their objectives; and hence, achieving economic development and resurgence in the manufacturing sector becomes very essential and more inhabitable.

5.4 Scope for further research

Further research can focus on the following aspects:

- 1) Qualitative investigation of decision making and its role and challenges with respect to business performance in Yemen.
- 2) Investigating industry-wise decision making and exploring its characteristics that affect its impact on business performance.
- 3) Conducting a comparative study investigating decision making among female managers in underdeveloped economies where the survival of business is crucially relevant to the decision making adopted by them.
- 4) Investigating decision making in the service sector and comparing the outcome with the manufacturing sector.

5.5 Study Limitations

The limitations of this study include the following:

- 1) The study followed a non-probability sampling. Therefore, generalizing the result is challenging.
- 2) The study was limited to two cities in Yemen that host more than 40% of manufacturing SMEs, hence, investigating a wider range of the population of manufacturing SMEs may yield different results.
- 3) As the study is considered as exploratory study, followed quantitative methods, hence adopting the mixed methodology of research where qualitative research would support the results of the quantitative approach followed in this study.

5.6 References

- Aamer, A. M. (2015). Manufacturing in Yemen: challenges and obstacles. *Journal of Academic Research in Economics (JARE)*, 7(1), 119-142.
- Abaho, E., Sylvia, A., Ntayi, J. M., & Kisubi, M. K. (2016). Firm capabilities, entrepreneurial competency and performance of Ugandan SMEs, <http://www.zbw.eu/econis-archiv/handle/11159/3229>
- Abdulhabeeb, N. (1985). Lights on the beloved Aden, Yemen Democratic, Aden, Yemen.
- Abernathy, W. B. (2011). An analysis of the effects of selected management practices on organizational productivity and performance. *Performance Improvement*, 50(6), 39-47.
- Aboueldahab, N. (2019). Reclaiming Yemen: The Role of the Yemeni Professional Diaspora, Brookings Doha Center Analysis Paper, Doha, Qatar.
- Abraham, S. E., Karns, L. A., Shaw, K., & Mena, M. A. (2001). Managerial competencies and the managerial performance appraisal process. *Journal of Management Development*. Vol. 20 No. 10, pp. 842-852.
- Abubakar, A. M., Elrehail, H., Alatailat, M. A., & Elçi, A. (2019). Knowledge management, decision-making style and organizational performance. *Journal of Innovation & Knowledge*, 4(2), 104-114.
- Abutaleb, H. (1994). Yemen Unification: studies on the transmission process from the split into unity, Center for Arab Unity Studies, Beirut , Lebanon.
- ACCA, (2018). How vision and strategy helps small businesses succeed: Governance needs of SMEs, The Association of Chartered Certified Accountants, United Kingdom.
- Adizes, I. (1971). Industrial democracy: Yugoslav style. In: Edfelt, R. B. (2009). *Global comparative management: A functional approach*. Sage.
- Agarwal, R., & Green, R. (2011). The role of education and skills in Australian management practice and productivity. *Fostering Enterprise: The Innovation and Skills Nexus—Research Readings, Adelaide, National Centre for Vocational Education Research (NCVER)*, 79-102.
- Agarwal, R., Brown, P. J., Green, R., Randhawa, K., & Tan, H. (2014). Management practices of Australian manufacturing firms: why are some firms more innovative?. *International Journal of Production Research*, 52(21), 6496-6517.
- Agarwal, R., Green, R., Brown, P. J., Tan, H., & Randhawa, K. (2013). Determinants of quality management practices: an empirical study of New Zealand manufacturing firms. *International Journal of Production Economics*, 142(1), 130-145.
- Aguinis, H. (2014). Performance management, 3rd edition, Pearson Education Limited.
- Ahmad, N. H., Halim, H. A., & Zainal, S. R. M. (2010). Is entrepreneurial competency the silver bullet for SME success in a developing nation. *International Business Management*, 4(2), 67-75.
- Ahmed, H., M., S., (2005), Performance management evaluation in industrial sector in the republic of Yemen, unpublished Ph.D thesis, BAMU.
- Aiedh, Abdullateef Musleh Mohammed. (2010). Management role in the success of Islamic Banks in Yemen. *Journal of Social Studies*, Vol 31. Pp 53-105.

- Aikins, D., & Addy, M. (2021). *Decision-making practices of construction firms in Accra Ghana* (Doctoral dissertation). Kwame Nkrumah University of Science and Technology, Ghana.
- Al Jassim, W. H. A. (2014). *An investigation of the strategic decision making process in SMEs* (Doctoral dissertation). Brunel University, London.
- Alacreu-Crespo, A., Fuentes, M. C., Abad-Tortosa, D., Cano-Lopez, I., González, E., & Serrano, M. Á. (2019). Spanish validation of General Decision-Making Style scale: Sex invariance, sex differences and relationships with personality and coping styles. *Judgment and Decision Making*, 14(6), 739.
- Alaraby, (2014). The private sector owns 98% of the industrial firms in Yemen, retrieved from: <https://www.alaraby.co.uk/amp//economy/2014/4/1/-من-98-يمتلك-القطاع-الخاص-الصناعية-في-اليمن> (Accessed: 28/8/2019).
- Alaraby, (2016). Was the Ottoman Governing an invasion?, retrieved from: <https://www.alaraby.co.uk/opinion/2016/9/21-هل-كان-الحكم-العثماني-استعمارا->
- Alaraby, (2017). Traders extorting the poors in Yemen, retrieved from: <https://alarabi.com/Read/13166> (Accessed: 11/1/2018)
- Al-Attas, W. A. S. (2017). Strategic analysis in small and medium enterprises in Yemen, *Recherches économiques et managériales*, Vol. 21, p. 211-234 <http://revues.univ-biskra.dz/index.php/rem/article/view/3845>
- Alawadhi, H.M. (2003). *The Yemeni Encyclopedialike*, Third volume, Alafeef publishing, Sanaa, Yemen.
- Albelbasee, M.A.M., (2016). *Methods for developing decision making methods for safety crisis management in Palestine*, Masters' thesis, AlAqsa University.
- Albu, N., & Albu, C. (2003). *Instruments for performance management*. Economic Printing House.
- Al-Dawsari, N. (2012). *Tribal governance and stability in Yemen* (Vol. 24). Washington: Carnegie Endowment for International Peace. https://carnegieendowment.org/files/yemen_tribal_governance.pdf
- Aldhaen, E. S. (2017). *Study of the strategic decision making process in higher education institutions* (Doctoral dissertation, Brunel University London).
- Algomhariah, (2008). The Yemeni consumer is away from local products, retrieved from: <http://algomhariah.net/newsweekarticle.php?sid=75437> (Accessed: 11/2/2018)
- Alhaddad, R. (2010). Small enterprises .. the failed solution, retrieved from: <http://www.alwasat-ye.net/?ac=3&no=32089> (Accessed 21/1/2018).
- Alhammedi, A., Shahadan, F., Berma, M., & Ramlee, S. (2013). The determinants of small enterprises growth performance in manufacture and service sectors in Yemen. *Journal of Academic Research in Economics*, 5(1). Pp. 103-127.
- Alhawary, M. (2002). The tendencies of the private sector along with the second five year plan 2001-2005, challenges of transformation and requirement of development, *Economic Dirasat*, Vol. 3 (2), pp. 71-79.
- Alhimyari, F. (2014). Ramadan .. A season of dumping Yemeni markets. Retrieved from: https://marebpress.net/news_details.php?lng=arabic&sid=100743 (Accessed: 25/8/2018)
- Ali, A. (1989). A comparative study of managerial beliefs about work in the Arab states. *Advances in international comparative management*, 4, 95-112.

- Ali, A. J. (1993). Decision-making style, individualism, and attitudes toward risk of Arab executives. *International Studies of Management & Organization*, 23(3), 53-73.
- Ali, A. J. (1995). Cultural discontinuity and Arab management thought. *International Studies of Management & Organization*, 25(3), 7-30.
- Ali. K. N. (2006). Management and educational supervision, Dar El Shorouk publications, Amman, Jordan.
- Aliriani, K. (2013). Role of SMEs in the Economy: The Case of Yemen, proceeding of: Yemen: Challenges for the Future, International Conference, London, January 11&12, 2013.
- Al-Iryani, K., (2015). Role of SMEs in the Economy: The Case of Yemen. In Yemen: challenges for the future, London.
- Al-Iryani, L., De Janvry, A., & Sadoulet, E. (2013). *Delivering good aid in hard places: The Yemen social fund for development approach* (No. 2013/080). WIDER Working Paper.
- Al-Iryani, L., de Janvry, A., & Sadoulet, E. (2015). The Yemen Social Fund for Development: An effective community-based approach amid political instability. *International Peacekeeping*, 22(4), 321-336.
- Aliyu, M. S. (2017). Entrepreneurial Competencies and the Performance of Small and Medium Enterprises (SMEs) in Zaria Local Government Area of Kaduna State. *International Journal of Entrepreneurial Development, Education and Science Research*, 4(2), 116-138.
- Al-Jaadabi, A. M. A. (2012). The study of human resource management practices followed by selected public and private sector industries in Yemen, unpublished Ph.D thesis.
- Al-Jabari, M. M. H., & Mohammad, H. (2011). Exploring the nature of human resources management practices at family businesses in Palestine. *International Business and Management*, 3(2), 30-39.
- Aljawhary, A. (1982). Sociology of management, Concept and cases, Dar Almaaref publications, Cairo.
- Aljazeera, (2010). Counterfeit commodities invade the Yemeni markets. <https://www.aljazeera.net/news/ebusiness/2010/9/20/السلع-المغشوشة-تغزو-الأسواق-اليمنية> (Accessed: 11/01/2018).
- Aljazeera, (2010). Dumping threatens Yemeni markets, retrieved from: <https://www.aljazeera.net/news/ebusiness/2010/10/14/الإغراق-يهدد-الصناعات-الحرفية-باليمن> (Accessed: 12/1/2018).
- Aljazeera, (2010). Small and medium Enterprises, retrieved from: <https://www.aljazeera.net/programs/economyandpeople/2010/10/13/المشروعات-الصغيرة-والمتوسطة> (Accessed:7/8/2018)
- Al-Kasasbeh, M. M., (2016). Possibility of Applying Arabian Management Theory, *International Journal of Business and Management*; Vol. 11(10) pp. 270- 281. <http://dx.doi.org/10.5539/ijbm.v11n10p270>
- Al-Maqaleh, A. (2012). Small Enterprises in Yemen, Master's dissertation, Queen Arwa university, Yemen, cited in: Aliriani, K. (2013). Role of SMEs in the Economy: The Case of Yemen, proceeding of: Yemen: Challenges for the Future, International Conference, London, January 11&12, 2013.
- Almarhadhy, S. (2000). The impact of internal environment on the ability of competitive organizations, unpublished work, Sanaa, Yemen.

- Almarhadhy, S. (2002). Strategic options for Yemeni products: Analytical study for the Yemeni Non-oil industrial sector, unpublished research, Sanaa, Yemen.
- Al-Matari, E. M., Al-Swidi, A. K., & Fadzil, F. H. B. (2014). The measurements of firm performance's dimensions. *Asian Journal of Finance & Accounting*, 6(1), 24.
- AlMazrouei, H., Zacca, R., Bilney, C., & Antoine, G. (2016). Expatriate managers decision-making practices within the UAE: a qualitative study. *International Journal of Organizational Analysis*. Vol. 24(5), pp. 856-882
- Almutawakkel, Y. (2000). The competitiveness in the Yemeni industrial sector, UNPUBLISHED WORK, SANAA, YEMEN
- Alnedhari, M. (2009). Nature of small and smaller enterprises in Taiz Governorate, cited in: Alsabai, S. A. A. (2011). Small enterprises in Yemen and the funding role of MFIs, *Modern Administrative Journal*, V6 pp. 35-68.
- Alqadasi, A. G. (2008). The extent of applying marketing practices in SMEs in Yemen, Master dissertation, Aden University, Yemen.
- Alqatabri, M. D. (2011). The role of monetary policy in stabilization and economic development, Dar Ghidaa for Publishing & Distribution, Egypt.
- AlQershi, N., Abas, Z. B., & Mokhtar, S. S. M. (2018). Strategic Innovation and its Impact on Manufacturing SME Performance in Yemen. Proceedings of the 2nd Conference on Technology & Operations Management (2ndCTOM) Universiti Utara Malaysia, Kedah, Malaysia, February 26-27, 2018 <http://repo.uum.edu.my/24207/> (Accessed July 12, 2018)
- Al-Rasheed, A. M. (2001). Features of Traditional Arab Management and Organization in the Jordan Business Environment. *Journal of Transnational Management Development*, 6(1-2), 27-53.
- Alsanafi, A. (2000). The environment of industrial investment in Yemen: Nature and future trends, UNPUBLISHED WORK, SANAA, YEMEN.
- Alshami, A. (2000). Globalization and its impact on business organizations, UNPUBLISHED WORK, SANAA, YEMEN.
- Althawrah, (2013). The commercial war in Yemen.. who's benefit?, retrieved from: <https://althawra-news.net/news47961.html> (Accessed: 3/2/2018).
- Althawrah, (2013). The lack of ideas and abilities lead to SMEs failure, retrieved from: <https://althawra-news.net/news58448.html> (Accessed: 19/8/2019).
- Altheeb, A. J. (2009) The Yemen's revival during the Ottoman Empire, Retrieved from: <http://aleshteraky.com/archive/articles.php?id=1134>
- Altinay, L., Madanoglu, M., De Vita, G., Arasli, H., & Ekinci, Y. (2016). The interface between organizational learning capability, entrepreneurial orientation, and SME growth. *Journal of Small Business Management*, 54(3), 871-891.
- Alvarez-Torres, F. J., Lopez-Torres, G. C., & Schiuma, G. (2019). Linking entrepreneurial orientation to SMEs' performance. *Management Decision*. Vol. 57(12), pp. 3364-3386.
- Alyousif, A., Naoum, S., Atkinson, A., & Robinson, H. (2010, September). National culture influence on management practices in the construction industry of United Arab Emirates. In *Proceeding on 26th Annual ARCOM Conference* (pp. 6-8).

- Amason, A. C., & Schweiger, D. M. (1994). Resolving the paradox of conflict, strategic decision making, and organizational performance. *International journal of conflict management*. Vol. 5 No. 3, pp. 239-253
- Anggadwita, G., & Mustafid, Q. Y. (2014). Identification of factors influencing the performance of small medium enterprises (SMEs). *Procedia-Social and Behavioral Sciences*, 115, 415-423
- Arab Administrative Development Organization, (2002). Yemen experiment in Administrative Development, in: Experiments in reform and administrative development in the Arab World, Arab Administrative Development Organization ARDO retrieved from: <http://unpan1.un.org/intradoc/groups/public/documents/ARADO/UNPAN014081.pdf>
- Armstrong, G. (2005). Managing Performance through People—the Challenge for Tomorrow’s Organization, in: Cooper, C. L. (Ed.). *Leadership and management in the 21st century: business challenges of the future*. Oxford University Press.
- Armstrong, M., & Baron, A. (2006). Performance management: Key strategies and practical guidelines. Kogan Page Limited.
- Ates, A., Garengo, P., Cocca, P., & Bititci, U. (2013). The development of SME managerial practice for effective performance management. *Journal of small business and enterprise development*, 20(1), 28-54.
- Attiyah, H., (1993). Roots of organization and management problems in Arab countries: Cultural or otherwise?, In Proceedings of the First Arab Management Conference. Bradford University, July 6-8, UK, 223-246.
- Becker, J. M., Ringle, C. M., & Sarstedt, M. (2018). Estimating moderating effects in PLS-SEM and PLSc-SEM: Interaction term generation* data treatment. *Journal of Applied Structural Equation Modeling*, 2(2), 1-21.
- Becker, J.-M., Ringle, C.M., Sarstedt, M. and Völckner, F. (2015), “How collinearity affects mixture regression results”, *Marketing Letters*, Vol. 26 No. 4, pp. 643-659.
- BEIS, (2019). Nudging firms to improve productivity: rapid literature review, Department for Business, Energy & Industrial Strategy, BEIS Research Paper number: 2019/17.
- Bender, S., Bloom, N., Card, D., Van Reenen, J., & Wolter, S. (2018). Management practices, workforce selection, and productivity. *Journal of Labor Economics*, 36(S1), S371-S409.
- Benowitz, E. (2001). *Cliffsquickreview Principles of management*. Houghton Mifflin Harcourt.
- Blader, S., Gartenberg, C. M., & Prat, A. (2016). The contingent effect of management practices. *Columbia Business School Research Paper*, (15-48). Paper No. 15-48, Retrieved from https://repository.upenn.edu/mgmt_papers/273/
- Bloom, N., & Van Reenen, J. (2007). Measuring and explaining management practices across firms and countries. *The quarterly journal of Economics*, 122(4), 1351-1408.
- Bloom, N., & Van Reenen, J. (2010). Why do management practices differ across firms and countries?. *Journal of economic perspectives*, 24(1), 203-24.
- Bloom, N., Brynjolfsson, E., Foster, L., Jarmin, R., Patnaik, M., Saporta-Eksten, I., & Van Reenen, J. (2019). What drives differences in management practices?. *American Economic Review*, 109(5), 1648-83.

- Bloom, N., Eifert, B., Mahajan, A., McKenzie, D., & Roberts, J. (2013). Does management matter? Evidence from India. *The Quarterly Journal of Economics*, 128(1), 1-51.
- Bloom, N., Genakos, C., Sadun, R., & Van Reenen, J. (2012). Management practices across firms and countries. *Academy of Management Perspectives*, 26(1), 12-33.
- Bloom, N., Lemos, R., Qi, M., Sadun, R., & Van Reenen, J. (2011). Constraints on developing UK management practices. *BIS Research Paper*, 58.
- Bloom, N., Lemos, R., Sadun, R., Scur, D., & Van Reenen, J. (2014). JEEA-FBBVA Lecture 2013: The new empirical economics of management. *Journal of the European Economic Association*, 12(4), 835-876.
- Bloom, N., Propper, C., Seiler, S., & Van Reenen, J. (2015). The impact of competition on management quality: evidence from public hospitals. *The Review of Economic Studies*, 82(2), 457-489.
- Bloom, N., Sadun, R., & Van Reenen, J. (2016). *Management as a Technology?* (No. w22327). National Bureau of Economic Research. <https://www.nber.org/papers/w22327.pdf> (Accessed 13/11/2018)
- Bowman, E. H., Singh, H., & Thomas, H. (2002). The domain of strategic management: history and evolution. *Handbook of strategy and management*, 31-51.
- Brim, O. G. (1962). *Personality and decision processes: Studies in the social psychology of thinking* (Vol. 2). Stanford University Press.
- Brito, L. A. L., & Sauan, P. K. (2016). Management practices as capabilities leading to superior performance. *BAR-Brazilian Administration Review*, 13(3), 1-21.
- Browne, M. (1993), *Organisational decision-making and information*, Norwood, NJ: Ablex.
- Bryson, A., & Forth, J. (2018). The impact of management practices on SME performance. *National Institute of Economic and Social Research*, (488).
- Burgoyne, J., Hirsh, W., & Williams, S. (2004). *The Development of Management and Leadership Capability and its Contribution to Performance: The evidence, the prospects and the research need*. Research Report No 560, Department for Education and Skills, Lancaster University, London.
- Burke, R. J., & Cooper, C. L. (Eds.). (2003). *Leading in turbulent times: Managing in the new world of work*. Blackwell Publishing.
- Campos, H. M., Parellada, F. S., Valenzuela, F. A. A., & Rubio, A. M. (2015). Strategic decision-making speed in new technology based firms. *RAI Revista de Administração e Inovação*, 12(2), 130-152.
- Campos, H. M., Rubio, A. M., Valenzuela, F. A. A., & Ato, G. H. (2014). Strategic Decision Making and Firms in Growth Stage. *Global Journal of Management And Business Research*. Vol.14 (4), 1-9.
- Cannella Jr, A. A., & Monroe, M. J. (1997). Contrasting perspectives on strategic leaders: Toward a more realistic view of top managers. *Journal of management*, 23(3), 213-237.
- Cappelli, P. (2008). Talent management for the twenty-first century, *Harvard Business Review*, Vol.86(3).
- Carpenter, M., & Sanders, G. (2014). *Strategic Management: Pearson New International Edition: Concepts and Cases*. Second edition, Pearson Higher Ed.

- Carrera, M. (2019). *Management decision-making practices within small and medium-sized petroleum companies in Africa: An exploratory case study* (Doctoral dissertation, University of Phoenix), Arizona, USA.
- Carrión, G. C., Nitzl, C., & Roldán, J. L. (2017). Mediation analyses in partial least squares structural equation modeling: Guidelines and empirical examples. In *Partial least squares path modeling* (pp. 173-195). Springer, Cham.
- Caton, S. C. (2013). Yemen, Middle east in Focus, ABC-CLIO.
- Cegarra-Navarro, J. G., Jiménez, D. J., & Martínez-Conesa, E. Á. (2007). Implementing e-business through organizational learning: An empirical investigation in SMEs. *International Journal of Information Management*, 27(3), 173-186.
- Cepeda-Carrion, G., Cegarra-Navarro, J. G., & Cillo, V. (2019). Tips to use partial least squares structural equation modelling (PLS-SEM) in knowledge management. *Journal of Knowledge Management*. Vol. 23(1), pp. 67-89
- Chamorro-Premuzic, T. (2015). Ace the assessment. *Harvard Business Review*, 93(7/8), 118-121.
- Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research*, 14(2), 189-217.
- Chin, W., Cheah, J. H., Liu, Y., Ting, H., Lim, X. J., & Cham, T. H. (2020). Demystifying the role of causal-predictive modeling using partial least squares structural equation modeling in information systems research. *Industrial Management & Data Systems*. Vol. 120 (12), pp. 2161-2209
- Cho, Y. (2015, August). Developing strategic decision making process for product and service planning. In 2015 Portland International Conference on Management of Engineering and Technology (PICMET) (pp. 433-446). IEEE.
- Chuah, K. B., & Law, K. M. (2020). What Is Organizational Learning?. In *Project Action Learning (PAL) Guidebook: Practical Learning in Organizations* (pp. 3-14). Springer, Cham.
- Chung, K. H., Rogers, R. C., Lubatkin, M., & Owers, J. E. (1987). Do insiders make better CEOs than outsiders?. *Academy of Management Perspectives*, 1(4), 325-331.
- Comprehensive Industrial Survey, (1996), Results of the first comprehensive industrial survey, Central Statistics Organizations, Sanaa, Yemen.
- Cordesman, A. H. (2017). *The War in Yemen: Hard Choices in a Hard War*, Center for Strategic & International Studies.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of applied psychology*, 78(1), 98.
- Creswell, J. W., & Creswell, J. D. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Cruz, N. M., Escudero, A. I. R., Barahona, J. H., & Leitao, F. S. (2009). The effect of entrepreneurship education programmes on satisfaction with innovation behaviour and performance. *Journal of European Industrial Training*. Vol. 33(3), pp. 198-214.
- CSO, (1989). Statistical bocket book, People democratic Republic of Yemen, Central Statistical Organization, Aden.
- CSO, (2003). Statistical Year Book for 2003, Central Statistical Organization, Sanaa
- CSO, (2005). Statistical Year Book, Central Statistical Organization, Yemen.

- CSO, (2006). Statistical Year Book 2006, Central Statistical Organization, Yemen.
- CSO, (2009). Statistical Year Book 2009, Central Statistical Organization, Yemen.
- CSO, (2010). Statistical Year Book for 2010, Central Statistical Organization, Sanaa
- CSO, (2012). Statistical Year Book 2012, Central Statistical Organization, Yemen.
- CSO, (2013). *Statistical Report of the Industrial Survey for the Year 2010*. Central Statistical Organization of Yemen, Sana'a, Yemen.
- CSO, (2015). Statistical Year Book 2015, Central Statistical Organization, Yemen.
- CSO, (2017). Statistical Year Book 2017, Central Statistical Organization, Yemen.
- Cyert, R.M. and March, J.G. (1962). *A Behavioural Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ.
- Dada, O., & Fogg, H. (2016). Organizational learning, entrepreneurial orientation, and the role of university engagement in SMEs. *International Small Business Journal*, 34(1), 86-104.
- Davies, S. D. (2005). The Twenty-First Century Manager Book: Working on (and on and on . . .), in: Cooper, C. L. (Ed.). *Leadership and management in the 21st century: business challenges of the future*. Oxford University Press.
- Davis, B. (2015). *Best practices in the field of performance management: A Delphi study*. (Doctoral dissertation, The University of the Rockies).
- De Vries, M. F. K. (1993). The dynamics of family controlled firms: The good and the bad news. *Organizational dynamics*, 21(3), 59-71.
- De Waal, A., & Frijns, M. (2016). The influence of the UAE context on management practice in UAE business. *International Journal of Islamic and Middle Eastern Finance and Management*, 9(2), 236-253.
- Dean Jr, J. W., & Sharfman, M. P. (1996). Does decision process matter? A study of strategic decision-making effectiveness. *Academy of management journal*, 39(2), 368-392.
- Deligianni, I., Dimitratos, P., Petrou, A., & Aharoni, Y. (2016). Entrepreneurial orientation and international performance: The moderating effect of decision-making rationality. *Journal of Small Business Management*, 54(2), 462-480.
- Di Fiore, A. & Souza, M. (2021). Are Peer Reviews the Future of Performance Evaluations?, Harvard Business Review Case Services
- Dijkstra, T. K., & Henseler, J. (2015). Consistent partial least squares path modeling. *MIS quarterly*, 39(2), 297-316.
- Dimmock, S., & Gerken, W. C. (2018). Research : How One Bad Employee Can Corrupt a Whole Team, Harvard Business Review.
- Dobson, P. W., Starkey, K., & Richards, J. (2004). *Strategic management: issues and cases*. Blackwell Publishing.
- Donaldson, L. (2002). Damned by our own theories: Contradictions between theories and management education. *Academy of Management Learning & Education*, 1(1), 96-106.
- Drucker, P. F. (1954). *The Practice Of Management* Harper & Row. New York.
- Drucker, P. F. (1967). *The effective decision*. Harvard University. Graduate school of business administration..
- DuBrin, A. J. (2012). *Essentials of management*. South-Western College, Cengage Learning, USA.

- Dutot, V. (2017). Exploring the double influence of CEOs' management style on the development of SMEs' corporate reputation. *Journal of Small Business & Entrepreneurship*, 29(5), 351-374.
- Duygulu, E., Ozeren, E., İşildar, P., & Appolloni, A. (2016). The sustainable strategy for small and medium sized enterprises: The relationship between mission statements and performance. *Sustainability*, 8(7), 698.
- Eggers, W. D., & Macmillan, P. (2013). *The solution revolution: How business, government, and social enterprises are teaming up to solve society's toughest problems*. Harvard Business Press.
- Elbanna, S., & Child, J. (2007). The influence of decision, environmental and firm characteristics on the rationality of strategic decision- making. *Journal of Management Studies*, 44(4), 561-591.
- Elbanna, S., & Child, J. (2007a). Influences on strategic decision effectiveness: Development and test of an integrative model. *Strategic Management Journal*, 28(4), 431-453.
- Elbing A. (1978). *Behavioural Decisions in Organisations*, 2nd edn, Scoot, Foresman and company, London.
- Eniola, A. A., & Entebang, H. (2016). Financial literacy and SME firm performance. *International Journal of Research Studies in Management*, 5(1), 31-43.
- Etzioni, A. (2001). Humble Decision Making in Harvard Business review on Decision Making. *HBS Publishing Corporation, Boston*.
- Fatima, T., & Bilal, A. R. (2019). Achieving SME performance through individual entrepreneurial orientation: An active social networking perspective. *Journal of Entrepreneurship in Emerging Economies*. Vol. 12(3), pp. 399-411.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior research methods*, 41(4), 1149-1160.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods*, 39(2), 175-191.
- Ferreira, A. B. (n.d.). The role of Emotional Intelligence and the relationship between Leadership Styles, Decision Making styles and Organizational Performance: A Review, <https://cutt.us/iUs1W>
- Forbes, D. P. (2007). Reconsidering the strategic implications of decision comprehensiveness. *Academy of Management Review*, 32(2), 361-376.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
- Forth, J., & Bryson, A. (2019). Management practices and SME performance. *Scottish Journal of Political Economy*. Early view, <https://doi.org/10.1111/sjpe.12209>
- Foster, L., Haltiwanger, J., & Syverson, C. (2008). Reallocation, firm turnover, and efficiency: Selection on productivity or profitability?. *American Economic Review*, 98(1), 394-425.

- Fredrickson, J. W. (1984). The comprehensiveness of strategic decision processes: Extension, observations, future directions. *Academy of Management journal*, 27(3), 445-466.
- Fredrickson, J. W. (1986). The strategic decision process and organizational structure. *Academy of management review*, 11(2), 280-297.
- Friends of Yemen, (2010). WG on Justice and Rule of Law, *Final Report* (2010) , Cited in: Al-Zwaini, L. (2012). *The rule of law in Yemen: Prospects and challenges*. Hague Institute for the Internationalisation of Law, HiiL. institutional opacity <https://www.hiil.org/wp-content/uploads/2018/09/Rule-of-Law-in-Yemen.pdf>
- Gandhi, M., & Vasudevan, H. (2019). Green Supply Chain Management Practices and Its Impact on Business Performance. In *Proceedings of International Conference on Intelligent Manufacturing and Automation* (pp. 601-611). Springer, Singapore.
- Garcia-Morales, V. J., Lloréns-Montes, F. J., & Verdu-Jover, A. J. (2007). Influence of personal mastery on organizational performance through organizational learning and innovation in large firms and SMEs. *Technovation*, 27(9), 547-568.
- Geessinck, B. (2014). *Exploring entrepreneurial strategic decision making and imagination* (Master's thesis, University of Twente). Enschede, Netherlands.
- Geisser, S. (1974). A Predictive Approach to the Random Effects Model, *Biometrika*, 61(1): 101-107.
- General Investment Authority. (2006) . Why investing in Yemen?. <http://investinyemen.org/mcontent.php?p=3&langid=1&pageid=3> (Accessed on 13/01/2018).
- Ghanem, M. (2018). The Small and Micro Enterprise Service (SMEPS): Bridging the Void, retrieved from: <https://almadaniyamag.com/2018/05/22/2018-5-22-the-small-and-micro-enterprise-service-bridging-the-void/> (Accessed: 31/8/2019)
- Ghoshal, S. (2005). Bad management theories are destroying good management practices. *Academy of Management learning & education*, 4(1), 75-91.
- Gibcus, P., Vermeulen, P. A., & de Jong, J. P. (2004). Strategic decision-making in small firms: towards a typology of entrepreneurial decision-makers. URL: <https://repository.uibn.ru.nl/handle/2066/157339>
- Ginter, P. M., Duncan, W. J., & Swayne, L. E. (2018). *The strategic management of health care organizations*. John Wiley & Sons.
- Goler, L., Gale, J., & Grant, A. (2016). Let's not kill performance evaluations yet. *Harvard Business Review*, 94(11), 90-94.
- Goll, I., & Rasheed, A. M. (1997). Rational decision- making and firm performance: the moderating role of the environment. *Strategic management journal*, 18(7), 583-591.
- Gomes, G., & Wojahn, R. M. (2017). Organizational learning capability, innovation and performance: study in small and medium-sized enterprises (SMES). *Revista de Administração (São Paulo)*, 52(2), 163-175.
- Gomezelj, D. O., & Kušce, I. (2013). The influence of personal and environmental factors on entrepreneurs' performance. *Kybernetes*. Vol. 42(6), pp. 906-927
- Gooding, V. (2005). What will Tomorrow's Organization/ Company look like over the Next Couple of Decades?, in: Cooper, C. L. (Ed.). *Leadership and management in the 21st century: business challenges of the future*. Oxford University Press.
- Gopaul, R. (2019). *An assessment of strategic decision-making processes in small and micro enterprises in the services sector in South Africa* (Doctoral dissertation). Durban University of Technology, Durban, South Africa.

- Gopaul, R., & Rampersad, R. (2020). An assessment of strategic decision-making processes among small and micro enterprises in South Africa. *Acta Commercii*, 20(1), 1-10.
- Grebmer, K. V., Bernstein, J., Patterson, F., Wiemers, M., Cheilleachair, R. N., Foley, C., ... Fritschel, H. (2019). Global Hunger Index: The Challenge of Hunger and Climate Change, Welthungerhilfe and Concern Worldwide.
- Green, J. P., Tonidandel, S., & Cortina, J. M. (2016). Getting through the gate: Statistical and methodological issues raised in the reviewing process. *Organizational Research Methods*, 19(3), 402-432.
- Griffin, R. (2016). *Fundamentals of management*. Cengage Learning.
- Grote, D., & Grote, R. C. (2011). *How to be good at performance appraisals: Simple, effective, done right*. Harvard Business Press.
- Grote, R. C. (2002). *The performance appraisal question and answer book: A survival guide for managers*. AMACOM/American Management Association.
- Guo, R. (2018). Strategic decision-making logics, entrepreneurial capability and opportunity exploitation in high-tech new ventures. *Journal of Business Economics and Management*, 19(2), 235-252.
- Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110.
- Hair, J. F., Astrachan, C. B., Moisescu, O. I., Radomir, L., Sarstedt, M., Vaithilingam, S., & Ringle, C. M. (2020a). Executing and interpreting applications of PLS-SEM: Updates for family business researchers. *Journal of Family Business Strategy*, 100392.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*. Vol. 31 (1), pp. 2-24.
- Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2017), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, Sage, Thousand Oaks, CA.
- Hair, J.J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006), *Multivariate Data Analysis*, 6th ed., Pearson Prentice Hall, Englewood Cliffs, NJ.
- Hambrick, D. C. (1994). What if the academy actually mattered?. *Academy of Management Review*, 19(1), 11-16.
- Hamel, G. (2006). The why, what, and how of management innovation. *Harvard business review*, 84(2), 72.
- Hamel, G. (2008). *The future of management*. Harvard Business Review Press.
- Hamel, G., & Prahalad, C. K. (1994). Competing for the future. *Harvard business review*, 72(4), 122-128.
- Hamidi, H. (2021). Decision-Making Processes Used by Malaysian Managers of Small and Medium-Sized Enterprises When Deciding Their Participation in Government-Sponsored Training Programs. *Global Business & Management Research*, 13(2).
- Hamish McRae, H. (2005). *Leading Human Capital and the Global Economy*, in: *Leadership and management in the 21st century: business challenges of the future*. Oxford University Press.

- Hammond, J. S., Keeney, R. L., & Raiffa, H. (1998). The hidden traps in decision making. *Harvard business review*, 76(5), 47-58.
- Harris, R. (1998). Introduction to decision making. Available at: <https://www.virtualsalt.com/introduction-to-decision-making-part-1/>
- Harrison, E. F. (1993). Interdisciplinary models of decision making. *Management Decision*. Vol. 31 No. 8, pp. 27-33.
- Harrison, E. F. (1996). A process perspective on strategic decision making. *Management decision*. Vol. 34(1), pp. 46-53.
- Harvard Business Review, (2015) Surmounting 21st-century business challenges: how leading entrepreneurs are thriving. *EY Entrepreneur of the Year Report*, Harvard Business School Publishing: Boston, USA.
- Hassan, M. R. (1970). The General theory of administrative reform: evidence from Arab Republic from Yemen, Doctoral dissertation, Law School, Cairo University.
- Heller, H. (2011). The Industrial Revolution: Marxist Perspectives. In *The Birth of Capitalism: A 21st Century Perspective* (pp. 176-214). London: Pluto Press. doi:10.2307/j.ctt183p671.10
- Henseler, J., & Chin, W. W. (2010). A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling. *Structural equation modeling*, 17(1), 82-109.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43(1), 115-135.
- Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological measurement*, 66(3), 393-416.
- Herlinawati, E., Ahman, E., & Machmud, A. (2019). The Effect of Entrepreneurial Orientation on SMEs Business Performance in Indonesia. *Journal of Entrepreneurship Education*, 22(5), 1-15.
- Hill, C. W., Jones, G. R., & Schilling, M. A. (2020). *Strategic management: Theory & cases: An integrated approach*. Cengage Learning.
- Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2007). *Strategic management: Competitiveness and globalization (Concepts and Cases)*. Thomson South-Western, USA.
- Hogan, R., & Kaiser, R. B. (2005). What we know about leadership. *Review of general psychology*, 9(2), 169-180.
- Hogan, R., Curphy, G. J., & Hogan, J. (1994). What we know about leadership: Effectiveness and personality. *American psychologist*, 49(6), 493.
- Hooi, L. W., & Ngui, K. S. (2014). Enhancing organizational performance of Malaysian SMEs: The role of HRM and organizational learning capability. *International Journal of Manpower*. Vol. 35 (7), pp. 973-995.
- HSAG, (2002). The future of national industry in light of globalization and liberalization of international trade, regional conference, Development of national industries and consumer protection in light of globalization, Sanaa, Yemen.
- Hsieh, C. T., & Klenow, P. J. (2009). Misallocation and manufacturing TFP in China and India. *The Quarterly journal of economics*, 124(4), 1403-1448.

- Huang, X. (2009). Strategic decision making in Chinese SMEs. *Chinese Management Studies*. Vol. 3 (2), pp. 87-101.
- Hunt, J. W. (1982). Developing middle managers in shrinking organisations. *Journal of Management Development*. Vol. 1(2), pp. 10 – 22.
- Hussain, I., Si, S., Xie, X. M., & Wang, L. (2010). Comparative study on impact of internal and external CFFs on SMEs. *Journal of Small Business & Entrepreneurship*, 23(4), 637-648.
- Ibidunni, A. S., Atolagbe, T. M., OBI, J. N., Olokundun, A. M., Oke, A. O., Amaihian, A. B., ... & Obaoye, D. (2018). Moderating effect of entrepreneurial orientation on entrepreneurial competencies and performance of agro-based SMEs. *International Journal of Entrepreneurship*, 22(1), 1-9.
- Idowu, A. (2013). Organizational learning, innovativeness and financial performance of small and medium enterprises (SMEs) in Nigeria. *European Journal of Business and management*, 5(2), 179-186.
- Igmena. (2009). The heavily crippled internet infrastructure in yemen, <https://www.igmena.org/the-heavily-crippled-internet-infrastructure-in-yemen>, (Accessed on 13/01/2018).
- ILO, (2016). *Yemen damage and needs assessment: Crisis impact on employment and labour market*. International Labour Organization.
- ILO, (2018). *Small and medium-sized enterprises damage assessment: Yemen*. International Labour Organisation, Regional Office for Arab States.
- ILO, (2019). *ILO Small and Medium-sized Enterprises (SMEs) Damage Assessment*, International labour Organization, Regional Office for Arab States.
- ILO. (2015). *Yemen Labour Force Survey 2013-14*. International Labour Organisation. Regional Office for Arab States https://www.ilo.org/beirut/publications/WCMS_419016/lang-en/index.htm (Accessed 13/01/2018).
- Inkinen, H. T., Kianto, A., & Vanhala, M. (2015). Knowledge management practices and innovation performance in Finland. *Baltic Journal of Management*, 10(4), 432-455.
- Ivancevich, J. M., Konopaske, R. & Matteson, M. T. (2014). *Organizational behavior and management*, 10th ed, McGraw-Hill, New York.
- Jakobsen, M., & Jensen, R. (2015). Common method bias in public management studies. *International Public Management Journal*, 18(1), 3-30.
- Janis, L.L. (1972). *Victims of groupthink*, Boston: Houghton Mifflin.
- Janssens, M. (1994). Evaluating international managers' performance: parent company standards as control mechanism. *International Journal of Human Resource Management*, 5(4), 853-873.
- Jarrar, D., & Abu Bahaa, K. (2014). The Relationship between the Dynamics of Strategic Decision Making and the Performance of Ramallah Based NGOs, *Journal of Al-Quds Open University for Administrative & Economic Research*, Vol. 1(1), pp. 15-54.
- Jayawarna, D., Macpherson, A., & Wilson, A. (2007). Training commitment and performance in manufacturing SMEs: Incidence, intensity and approaches. *Journal of small business and enterprise development*. Vol. 14(2), pp. 321-338.
- Jocumsen, G. (2004). How do small business managers make strategic marketing decisions? A model of process. *European journal of marketing*. Vol. 38 (5), pp. 659-674.

- Jones, M. C., & Rothwell, W. J. (Eds.). (2017). *Evaluating organization development: How to ensure and sustain the successful transformation*. CRC Press.
- Jumaan, N. (2000). Yemen managerial environment: Challenges and remedies, UNPUBLISHED WORK, SANAA, YEMEN
- Karabulut, A. T. (2015). Effects of innovation strategy on firm performance: a study conducted on manufacturing firms in Turkey. *Procedia-Social and Behavioral Sciences*, 195, 1338-1347.
- Karadag, H. (2017). The impact of industry, firm age and education level on financial management performance in small and medium-sized enterprises (SMEs). *Journal of Entrepreneurship in emerging economies*. Vol. 9(3), pp. 300-314.
- Karaevli, A., & Zajac, E. J. (2012, June 19th). When Is an Outsider CEO a Good Choice?, *MIT Sloan Management Review*, Online publication, Accessed: 12/2/2020.
- Keast, S., & Towler, M. (2009). *Rational decision-making for managers: An introduction*. Hoboken, NJ: John Wiley & Sons.
- Kelly, T. (2016). The importance of investing in infrastructure for SMEs, retrieved from: <https://www.telegraph.co.uk/business/sme-home/importance-of-infrastructure-for-smes/> (Accessed: 29/8/2019).
- Khurana, R. (2010). *From higher aims to hired hands: The social transformation of American business schools and the unfulfilled promise of management as a profession*. Princeton University Press.
- Kirkley, W. W. (2016). Creating ventures: decision factors in new venture creation. *Asia Pacific Journal of Innovation and Entrepreneurship*. Vol. 10 (1), pp. 151 - 167
- Kirkwood, C. W. (1997). *Strategic decision making*. Duxbury Press.
- Klingebiel, R., & De Meyer, A. (2013). Becoming aware of the unknown: Decision making during the implementation of a strategic initiative. *Organization Science*, 24(1), 133-153.
- Kock, N. (2017). Common method bias: a full collinearity assessment method for PLS-SEM. In *Partial least squares path modeling* (pp. 245-257). Springer, Cham.
- Köksalan, M. M., Wallenius, J., & Zionts, S. (2011). *Multiple criteria decision making: from early history to the 21st century*. World Scientific.
- Kolaib, M. (2002), The role of Hadhramout University in human resource development, Master Dissertation, UST Khartoom.
- KoTLer, P. H. (2003). *A Framework for Marketing Management*—Prentice Hall. *New Jersey*.
- Kotter, J. P. (2013). Management is (still) not leadership. *Harvard Business Review*, 9.
- Kraemer-Eis, H., Gvetadze, S., Lang, F., & Torfs, W. (2017). *European Small Business Finance Outlook: June 2017* (No. 2017/43). EIF working paper. https://www.eif.org/news_centre/publications/eif_wp_43.pdf
- Küttim, M., Kallaste, M., Venesaar, U., & Kiis, A. (2014). Entrepreneurship education at university level and students' entrepreneurial intentions. *Procedia-Social and Behavioral Sciences*, 110, 658-668.
- Kyndt, E., & Baert, H. (2015). Entrepreneurial competencies: Assessment and predictive value for entrepreneurship. *Journal of Vocational Behavior*, 90, 13-25.
- Ladzani, W. M., & Van Vuuren, J. J. (2002). Entrepreneurship training for emerging SMEs in South Africa. *Journal of small business management*, 40(2), 154-161.
- Lawler III, E. E., & Porter, L. W. (1967). Antecedent attitudes of effective managerial performance. *Organizational behavior and human performance*, 2(2), 122-142.

- Le Texier, T. (2013). The first systematized uses of the term “management” in the eighteenth and nineteenth centuries. *Journal of Management History*, 19(2), 189-224.
- Leavitt, H. J. (1989). Educating our MBAs: On teaching what we haven't taught. *California Management Review*, 31(3), 38-50.
- Lebas, M., & Euske, K. (2002). A conceptual and operational delineation of performance. *Business performance measurement: Theory and practice*, 65-79.
- Lees, S. (1992). Ten faces of management development. *Management education and development*, 23(2), 89-105.
- Lemos, R., & Scur, D. (2012). Could poor management be holding back development. Working paper, International Growth Centre. <https://www.theigc.org/wp-content/uploads/2014/10/Lemos-Scur-2012-Working-Paper.pdf> (accessed on 17/05/2019).
- Lemos, R., & Scur, D. (2014). Management Practices in Manufacturing in Mozambique. *London School of Economics and University of Oxford*.
- Levinson, H. (1984). *Appraisal of what performance?*. Harvard Business Review Case Services.
- Lippitt, G. (1982). Management development as the key to organisation renewal. *Journal of Management Development*. Vol. 1(2), pp. 34 - 40
- Long, D., Wang, H., & Wang, P. (2021). Built to Sustain: The Effect of Entrepreneurial Decision-Making Logic on New Venture Sustainability. *Sustainability*, 13(4), 2170.
- Lukić, J. (2014). The impact of information and communication technology on decision making process in the big data era. *Megatrend revija*, 11(2), 221-234.
- Lunenburg, F. C. (2010, September). THE DECISION MAKING PROCESS. In *National Forum of Educational Administration & Supervision Journal* (Vol. 27, No. 4).
- Mabenge, B. K., Ngorora-Madzimure, G. P. K., & Makanyeza, C. (2020). Dimensions of innovation and their effects on the performance of small and medium enterprises: the moderating role of firm's age and size. *Journal of Small Business & Entrepreneurship*, 1-25.
- Mack, K. E., Crawford, M. A., & Reed, M. C. (2004). *Decision making for improved performance*. Health Administration Press.
- MacKenzie, S. B., & Podsakoff, P. M. (2012). Common method bias in marketing: Causes, mechanisms, and procedural remedies. *Journal of retailing*, 88(4), 542-555.
- Maghribi, M. M. B. (2016). *Assets of managements and organizations*. Dar Aljenan Publications and distribution, Amman, Jordan.
- MAHESH, J. (2015). 'Indian' Management Practices in the IT Sector-An Empirical Investigation (Doctoral dissertation, BITS).
- Makanyeza, C., & Dzvuke, G. (2015). The influence of innovation on the performance of small and medium enterprises in Zimbabwe. *Journal of African Business*, 16(1-2), 198-214.
- Malini, G. (2013). SMEs employ close to 40% of India's workforce, but contribute only 17% to GDP, retrieved from: <https://economictimes.indiatimes.com/small-biz/policy-trends/smes-employ-close-to-40-of-indias-workforce-but-contribute-only-17-to-gdp/articleshow/20496337.cms?from=mdr> (Accessed: 23/8/2019).

- Mangaleswaran, T. (2015). A Study on Management Practices of Selected SMEs in Hambantota District, Sri Lanka, *European Journal of Business and Management*. Vol. 7 (25) pp. 11-15.
- Manley, S. C., Hair, J. F., Williams, R. I., & McDowell, W. C. (2020). Essential new PLS-SEM analysis methods for your entrepreneurship analytical toolbox. *International Entrepreneurship and Management Journal*, 1-21. DOI: 10.1007/s11365-020-00687-6
- Mann, L. (1982). Flinders decision making questionnaire II. *Bedford Park, South Australia: Flinders University of South Australia*.
- Mann, L., Burnett, P., Radford, M., & Ford, S. (1997). The Melbourne Decision Making Questionnaire: An instrument for measuring patterns for coping with decisional conflict. *Journal of Behavioral Decision Making*, 10(1), 1-19.
- Marček, D., Fraňo, M., & Marček, M. (2011). Managerial Decision-making: Measuring and Manifestations of Risks and the Possibilities of their Reducing. *Journal of Economics*, 59(4), 392-411.
- March, J. S., & Simon, H. A. (1958). *HA (1958) Organizations*. Wiley, *New York*.
- Margerison, C. (1982). How to avoid failure and gain success in management development. *Journal of Management Development*. Vol. 1(3), pp. 3 – 19.
- Martin, R. L., & Golsby-smith, T. (2017). Management is Much More than a Science: The Limits of Data-Driven Decision Making, *Harvard Business Review*, Vol. 95 (5), 128–35.
- McGrath, R. G. (2013). *The end of competitive advantage: How to keep your strategy moving as fast as your business*. Harvard Business Review Press.
- McKenzie, D., & Woodruff, C. (2015). *Business practices in small firms in developing countries*. The World Bank.
- Mehr, S. Y., & Omran, A. (2014). FACTORS CONTRIBUTE TO PROJECT SUCCESS IN IRANIAN CONSTRUCTION INDUSTRY. *Journal of Academic Research in Economics*, 6(3). PP. 361-379.
- Meyrick, J. (2006). What is good qualitative research? A first step towards a comprehensive approach to judging rigour/quality. *Journal of health psychology*, 11(5), 799-808.
- Michna, A. (2009). The relationship between organizational learning and SME performance in Poland. *Journal of European industrial training*, Vol. 33 (4), pp. 356-370.
- Mintzberg, H., & Gosling, J. (2002). Educating managers beyond borders. *Academy of Management Learning & Education*, 1(1), 64-76.
- Mintzberg, H., Raisinghani, D., & Theoret, A. (1976). The structure of "unstructured" decision processes. *Administrative science quarterly*, 246-275.
- MIT (n.d.). Definition of small and medium enterprises. Available at: <https://www.moit.gov.ye/moit/ar/win-general-admin-small-industries> -
- Mitchelmore, S., & Rowley, J. (2010). Entrepreneurial competencies: a literature review and development agenda. *International journal of entrepreneurial Behavior & Research*, Vol. 16(2), pp. 92-111.
- Mohamad, A., Zainuddin, Y., Alam, N., & Kendall, G. (2017). Does decentralized decision making increase company performance through its Information Technology infrastructure investment?. *International Journal of Accounting Information Systems*, 27, 1-15.

- Mol, M. J., & Birkinshaw, J. (2009). The sources of management innovation: When firms introduce new management practices. *Journal of business research*, 62(12), 1269-1280.
- Molloy, S., & Schwenk, C. R. (1995). The effects of information technology on strategic decision making. *Journal of Management Studies*, 32(3), 283-311.
- Muharram M. (2007), *Human Resource Management and its practices in private sector a comparative study based on Pune (India) and Sanaa (Yemen) between 1998 and 2003*, Doctoral Dissertation, University of Pune.
- Musid, J. M. A. (2013). The role of small business in tackling unemployment in Yemen, cited in: Althawrah, (2013) the role of small business in tackling unemployment in Yemen, retrieved from: <http://althawrah.ye/archives/65306> (accessed: 19/8/2019).
- Mutemi, B. M., Maina, R., & Wanyoike, D. N. (2014). Strategic management practices and performance of small scale enterprises in Kitui Town. *International Journal of Science Commerce and Humanities*, 2(4), 249-259.
- Nasser, A. (2018). Private sector Engagement in Post-conflict Yemen, Sana'a Center for Strategic Studies, Yemen.
- National Information Center, (2009), Evaluation report about the industrial sector, Sanaa, Yemen.
- Neely, A., Gregory, M., & Platts, K. (1995). Performance measurement system design: a literature review and research agenda. *International journal of operations & production management*. Vol. 15 (4), pp. 80-116.
- Neely, A., Mills, J., Platts, K., Richards, H., Gregory, M., Bourne, M., & Kennerley, M. (2000). Performance measurement system design: developing and testing a process-based approach. *International journal of operations & production management*. Vol. 20(10), pp. 1119-1145
- Nehete, R. S., Narkhede, B. E., & Mahajan, S. K. (2011). Investigation of entrepreneurial skills for better performance of manufacturing SMEs. *International Journal of Engineering Science and Technology*, 3(7), 5515-5525.
- Ng, H. S., & Kee, D. M. H. (2018). The core competence of successful owner-managed SMEs. *Management Decision*. Vol. 56(1), pp. 252-272
- Nicaragua. (2019, August 21). CIA: *The World Factbook*. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/ym.html>
- Nickels, W. G., McHugh, J. M., & McHugh, S. M. (2016). *Understanding Business 11th ed.* McGraw-Hill Irwin: New York, NY.
- Niculescu, M. (2005). Diagnostic global strategic: vol. II: Diagnostic financiar. *Bucuresti: Editura*.
- Nisbet, R. A. (1969). *Social change and history: Aspects of the western theory of development*. New York: Oxford University Press.
- Njoroge, C. W., & Gathungu, J. M. (2013). The effect of entrepreneurial education and training on development of small and medium size enterprises in Githunguri District-Kenya. *International Journal of Education and research*, 1(8), 1-22.
- Nudurupati, S. S., Bititci, U. S., Kumar, V., & Chan, F. T. (2011). State of the art literature review on performance measurement. *Computers & Industrial Engineering*, 60(2), 279-290.
- Nunnally, J.C. (1978), *Psychometric Theory*, McGraw-Hill, New York, NY.

- Nusair, A. Y. A., & Osman, M. H. M. (2016). An Empirical Study of the Effect of Strategic Planning on Yemeni SME Performance. *Int. J. of Adv. Res.* 4 (8). 455, 463.
- Nusair, A. Y. A., & Osman, M. H. M. (2016). An Empirical Study of the Effect of Strategic Planning on Yemeni SME Performance. *Int. J. of Adv. Res.* 4 (8). 455, 463.
- Nutt, P. C. (2005). Comparing public and private sector decision-making practices. *Journal of Public Administration Research and Theory*, 16(2), 289-318.
- Nutt, P. C. (2006). Comparing public and private sector decision-making practices. *Journal of Public Administration Research and Theory*, 16(2), 289-318.
- Obeidat, B. Y., Shannak, R. O., Masa'deh, R. E. M. D. T., & Al-Jarrah, I. (2012). Toward better understanding for Arabian culture: Implications based on Hofstede's cultural model. *European Journal of Social Sciences*, 28(4), 512-522.
- Obokoh, L. O., & Goldman, G. (2016). Infrastructure deficiency and the performance of small-and medium-sized enterprises in Nigeria's Liberalised Economy. *Acta Commercii*, 16(1), 1-10.
- Obonyo, G. O., Okeyo, D. O., & Kambona, O. O. (2018). Effect of Management Practices on Actual ICT Application in Kenyan Hotels: A PLS-SEM Approach. *International Journal of Hospitality & Tourism Administration*, 19(2), 142-166.
- OECD (2010), *Innovation in Skills Development in SMEs Highlights*, Paris: Centre for Entrepreneurship, SMEs and Local Development, Organisation for Economic Co-operation and Development.
- O'Maker, R. M. (2014). *Quality management practices of small and medium enterprise contractors in the Gauteng low income residential sector* (Doctoral dissertation, University of Johannesburg). <https://ujcontent.uj.ac.za/vital/access/manager/Repository/uj:14131>
- Omerzel, D. G., & Antončič, B. (2008). Critical entrepreneur knowledge dimensions for the SME performance. *Industrial Management & Data Systems*. Vol. 108(9), pp. 1182-1199.
- Othamn, D. (2000). Future of Yemeni industry in light of regional and global trends, *Journal of economics and commerce College*, Vol. 17(3).
- Ou, A. Y., Waldman, D. A., & Peterson, S. J. (2018). Do humble CEOs matter? An examination of CEO humility and firm outcomes. *Journal of Management*, 44(3), 1147-1173.
- Oyewobi, L. O., Windapo, A., & Rotimi, J. O. B. (2016). Relationship between decision-making style, competitive strategies and organisational performance among construction organisations. *Journal of Engineering, Design and Technology*. Vol. 14(4), pp. 713-738.
- Pansiri, J., & Temtime, Z. T. (2008). Assessing managerial skills in SMEs for capacity building. *Journal of management development*. Vol. 27(2), pp. 251-260.
- Papamichail, K. N., & Rajaram, V. (2007). A framework for assessing best practice in decision making. In *International DSI Conference 2007 & APDSI Conference*.
- Parasuraman, R., & Manzey, D. H. (2010). Complacency and bias in human use of automation: An attentional integration. *Human factors*, 52(3), 381-410.
- Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice*. Sage publications.

- Pfeffer, J. (2005). Understanding the role of power in decision making, In: Shafritz, J.M., Ott, J.S. and Jang, Y.S. (Eds), *Classics of Organization Theory*, Thomson, London, pp. 290-303.
- Pfeffer, J. (2005a). Why Do Bad Management Theories Persist? A Comment on Ghoshal, *Academy of Management Learning & Education*, Vol. 4(1), pp. 96-100.
- Pfeffer, J., & Fong, C. T. (2002). The end of business schools? Less success than meets the eye. *Academy of management learning & education*, 1(1), 78-95.
- Picone, P. M., Dagnino, G. B., & Minà, A. (2014). The origin of failure: A multidisciplinary appraisal of the hubris hypothesis and proposed research agenda. *Academy of Management Perspectives*, 28(4), 447-468.
- Pindur, W., Rogers, S. E., & Kim, P. S. (1995). The history of management: a global perspective. *Journal of management history*, Vol. 1(1), pp. 59-77
- Porter, L. W., & McKibbin, L. E. (1988). *Management Education and Development: Drift or Thrust into the 21st Century?*. McGraw-Hill Book Company.
- PSDP.(2011). *National Micro, Small & Medium Sized Enterprise Development Strategy for Yemen – 2011-2021*, Private Sector Development Project (PSDP), Yemen.
- Putti, J. M., Koontz, H., & Weihrich, H. (1998). *Essentials of Management: An Asian Perspective*. McGraw-Hill Book Company.
- Qarshi, A. (2013), Investment in Human Capital from a Financial perspective, *Alandalus journal for social and applied sciences*, Vol. 5 (10), pp, 468-490.
- Ramosaj, B. (2005). Bazat e menaxhmentit. *Prishtinë–Universiteti Iliria*.
- Ramosaj, S. B. (2016). The Measurement, Evaluation, and Performance of Managers and Employees in Kosovo's Enterprises. *ILIRIA International Review*, 5(2), 9-26.
- Rashid, F. A. (2000, July), Management and development of human resource in Yemen.. Reality and challenges, *The Economic Journal*, PP 40-43.
- Rashid, O.M.A. (2007). The contribution of Islamic banks in Yemen to financing small and medium enterprises, Master's Dissertation, The Arab Academy for Management, Banking and Financial Sciences, Sana'a, Yemen.
- Rehman, R. R., Khalid, A., & Khan, M. (2012). Impact of employee decision making styles on organizational performance: in the moderating role of emotional intelligence. *World Applied Sciences Journal*, 17(10), 1308-1315.
- Rehman, S. U., Bhatti, A., & Chaudhry, N. I. (2019). Mediating effect of innovative culture and organizational learning between leadership styles at third-order and organizational performance in Malaysian SMEs. *Journal of Global Entrepreneurship Research*, 9(1), 1-24.
- Rigdon, E. E. (2014). Rethinking partial least squares path modeling: breaking chains and forging ahead. *Long Range Planning*, 47(3), 161-167
- Rigdon, E. E., Sarstedt, M., & Ringle, C. M. (2017). On comparing results from CB-SEM and PLS-SEM: Five perspectives and five recommendations. *Marketing: ZFP–Journal of Research and Management*, 39(3), 4-16.
- Robbins, S. P., & Coulter, M. (2018). *Management 14E*. Pearson, New York.
- Robbins, S. P., Coulter, M., & DeCenzo, D. A. (2017). *Fundamentals of management*. Pearson Higher Ed.
- Robert Baum, J., & Wally, S. (2003). Strategic decision speed and firm performance. *Strategic management journal*, 24(11), 1107-1129.

- Roberto, M. A. (2004). Strategic decision-making processes: Beyond the efficiency-consensus trade-off. *Group & Organization Management*, 29(6), 625-658.
- Robertson, P. L. (2003). The role of training and skilled labour in the success of SMEs in developing economies. *Education+ Training*, 45(8/9), 461-473.
- Rosli, M. M., & Sidek, S. (2013). The Impact of innovation on the performance of small and medium manufacturing enterprises: Evidence from Malaysia. *Journal of Innovation Management in Small & Medium Enterprises*, Vol. 2013, pp. 1-16.
- Rothaermel, F. T. (2015). *Strategic management, 2nd edition*, McGraw-Hill Education.
- Ruky, A. S. (2002). *Sistem manajemen kinerja*. Gramedia Pustaka Utama.
- Sadler, P. (2003). *Strategic management*. Kogan Page Limited, UK.
- Saleh, M. A. K., & Manjunath, K. R. (2020). Small and Medium Enterprises in Yemen: Aiming for resurgence while facing managerial obstacles, *Shodh Sanchar Bulletin*, Vol. 10 (40), pages. 6-12.
- Saleh, M. A. K., & Manjunath, K. R. (2020a). Small and medium enterprises in Yemen: Navigating through additional obstacles during Covid-19, *11th International Conference on Shifting Paradigm in Business, Economy and Society: Vision 2050*, Pacific University.
- Saleh, M. A. K., & Manjunath, K. R. (2020b). Review of Historical and Temporary Challenges Facing Small and Medium Enterprises in Yemen. *International Journal of Trend in Scientific Research and Development*, 4(3), 752-764.
- Saleh, M. A. K., & Manjunath, K. R. (2020c). Moving towards Digitalization in Small and Medium Enterprises in Least Developed Countries, Review of the case of Yemen. *International Journal for Modern Trends in Science and Technology*, vol. 6(8), 233-239.
- Saleh, M. A. K., & Manjunath, K. R. (2020d). Exploring Essential Enterprising Skills among Youth in Least Developed Countries: Empirical Insight from Yemen, *PIMT Journal of Research*, Vol. 13(1).
- Saleh, M. A. K., & Manjunath, K. R. (2020e). Small and Medium Enterprises in Yemen: A Financial aspect investigation, *International EUROASIA Congress on Scientific Researches and Recent Trends-7*, Baku Euroasian University, Azerbaijan, pages 408-416.
- Saleh, M. A. K., & Manjunath, K. R. (2020f). Enterprising under political and economic instability in Least Developing Countries: challenges and prospects—case study of Yemen. *Business Trends: Issues and Implications*, 23-30.
- Saleh, M. A. K., & Manjunath, K. R. (2021). Embracing Entrepreneurial change: Enterprising in Yemen compared with other least developed countries. *Journal of Advanced Research in Economics and Administrative Sciences*, 2(4), 1-22.
- Saleh, M. A. K., & Manjunath, K. R. (2021a). Entrepreneurship Perception among the Youth, Perspective from Yemen, Manuscript submitted for publication
- Saleh, M. A. K., & Manjunath, K. R. (2021b). Embracing Entrepreneurial change: Enterprising in Yemen compared with other least developed countries. Manuscript submitted for publication.
- Saleh, M. A. K., & Manjunath, K. R. (2021c). Barriers of the Digitalization process among Yemeni Enterprises: Empirical Investigation, Manuscript submitted for publication.

- Saleh, M. A. K., Manjunath, K. R., & Qaied, M. M. M. (2021). Factors influencing SMEs' performance in Yemen as an underdeveloped economy: Confirmatory factor analysis approach, Manuscript submitted for publication.
- Saleh, M. A. K., Rajappa, M. K., & Qaied, M. M. M. (2022). Factors influencing survival of business ventures in an underdeveloped economy: the case of Yemen. *International Journal of Management and Enterprise Development*, 21(1), 97-131.
- Salim, I. M., & Sulaiman, M. (2011). Organizational learning, innovation and performance: A study of Malaysian small and medium sized enterprises. *International Journal of Business and Management*, 6(12), 118.
- Santos, J. B., & Brito, L. A. L. (2012). Toward a subjective measurement model for firm performance. *BAR-Brazilian Administration Review*, 9(SPE), 95-117.
- Sanz de Acedo Lizarraga, M. L., Sanz de Acedo Baquedano, M. T., Soria Oliver, M., & Closas, A. (2009). Development and validation of a decision-making questionnaire. *British Journal of Guidance & Counselling*, 37(3), 357-373.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education.
- Schaffer, R. H. (2017). All Management Is Change Management. *Harvard Business Review*, (10).
- Schermerhorn, J. R. (2013). *Management*. 12th ed. John Wiley & Sons.
- Schneider, S., & Leyer, M. (2019). Me or information technology? Adoption of artificial intelligence in the delegation of personal strategic decisions. *Managerial and Decision Economics*, 40(3), 223-231.
- Schoenfeld, A. H. (2010). *How we think: A theory of goal-oriented decision making and its educational applications*. Routledge.
- Schrenk, L. P. (1969). Aiding the decision maker—A decision process model. *Ergonomics*, 12(4), 543-557.
- Scott, S. G., & Bruce, R. A. (1995). Decision-making style: The development and assessment of a new measure. *Educational and psychological measurement*, 55(5), 818-831.
- Sekaran, U. (2002). *Research methods for business: A skill building approach* (4th ed.). New York: John Wiley & Sons Inc.
- Sekaran, U., & Bougie, R. (2010). *Research Methods for Business: A Skill Building Approach*. West Sussex: John Wiley and Sons Ltd.
- Sence, P. M. (1994). *The fifth discipline*. Doubleday.
- Sewandono RE (2021) The Mediating Role of Effective Strategic Decision Making in the relationship between Intellectual Capital and Information System Capability effect on Financial Performance. *Int J Account Res* 9:200.
- SFD, (2017). Annual report 2017, Social Fund for Development, Sanaa, Yemen. https://www.sfd-yemen.org/uploads/issues/En_SFD_V04-20190318-185258.pdf
- Shafter, M. E. A., & Abdelmotleb, F. A. (2017). "Features of Management in Developing Countries." *American Journal of Engineering Research (AJER)*, Vol. 6 (10), pp. 346–355.
- Shamsan, N. (2004). Yemen experiment in reform and updating public administration, proceedings of The second Arab forum for updating public sector in the Arab World, retrieved from: <https://www.yemen-nic.info/files/workers/expert/yemen.pdf>

- Sharma, N. (2014). *The DBS handbook of management*, DBS Imprints, Delhi.
- Shebli, M. A. (2018). *The contemporary trends and concepts in management*, Alyazori Publishing house, Amman, Jordan.
- Shinde, S. V. (2018). *Functions Of Management*. Laxmi Book Publications, Solapur.
- Shirindza, M. (2015). *Understanding factors that enable and inhibit strategic decision making effectiveness* (Doctoral dissertation, University of Pretoria).
- Shmueli, G., & Koppius, O. R. (2011). Predictive analytics in information systems research. *MIS quarterly*, 553-572.
- Shmueli, G., Ray, S., Estrada, J. M. V., & Chatla, S. B. (2016). The elephant in the room: Predictive performance of PLS models. *Journal of Business Research*, 69(10), 4552-4564.
- Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*. Vol. 53(1), pp. 2322-2347.
- Simon, H. A. (1977). *The New Science of Management Decision* (rev. ed.) Prentice–Hall. Englewood Cliffs, NJ
- Simon, H. A. (1982). *Models of bounded rationality. 2. Behavioral economics and business organization*. MIT Press. Cambridge, MA.
- Simon, H.A. 1960. *The New Science of Management Decision*, revised edition. Prentice-Hall, Englewood Cliffs, NJ.
- Simons, R. (2005). *Levers of organization design: How managers use accountability systems for greater performance and commitment*. Harvard Business Press.
- SMEPS, (2016). Yemen Business Climate Survey: December 2016, Small and Micro Enterprise Service (SMEPS), <https://smeps.org.ye/smepsweb/wp-content/uploads/2018/02/Nov-2015.pdf?5c620f&5c620f>
- Sonet, B. C. (2010). *Regional influences on decision making practices of Chinese managers in the North and South of China* (Doctoral dissertation, Capella University), Minnesota, USA.
- Spicer, D. P., & Sadler-Smith, E. (2005). An examination of the general decision making style questionnaire in two UK samples. *Journal of Managerial Psychology*. Vol. 20(2), pp. 137-149
- Sridharan, U. V., Dickes, L., & Caines, W. R. (2002). The social impact of business failure: Enron. *Mid-American Journal of Business*, 17(2), 11-21.
- Stephen, I. A., Ayodele, O. M., & Oluremi, O. A. (2017). Enhancing the performance of agro-based SMES: The role of entrepreneurship competencies. *Covenant Journal of Entrepreneurship*, 1(1), 44-51.
- Stone, M. (1974). Cross-Validatory Choice and Assessment of Statistical Predictions, *Journal of the Royal Statistical Society*, 36(2): pp 111-147.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research techniques* (pp. 1-312). Thousand oaks, CA: Sage publications.
- Sull, D. N. (1999). *Why good companies go bad*. Harvard Business Review. 77(4):42-8, 50-2, 183.
- Suprihanto, J. (2000), *Performance Assessment and Development of Human Resources*, BPFE, Yogyakarta.
- Sutton, R. I. (2009). How to Be a Good Boss in a Bad Economy, Harvard Business review, June 2009.

- Taticchi, P., Tonelli, F., & Cagnazzo, L. (2010). Performance measurement and management: a literature review and a research agenda. *Measuring business excellence*. Vol. 14(1), pp.4-18.
- Tereso, A., Ribeiro, P., Fernandes, G., Loureiro, I., & Ferreira, M. (2019). Project Management Practices in Private Organizations. *Project Management Journal*, 50(1), 6-22.
- Terry, P. (1979). Management development. *Industrial and Commercial Training*. Vol. 11(10), pp. 423-426.
- Thatcher, M. (1996). The big challenge facing small firms. *People Management*, 25, 20-25.
- The system by which a company, authority or property that is owned by a man goes to his oldest son after his death
- Thompson, J. L., & Martin, F. (2005). *Strategic management: awareness and change*, 5th edition. Thomson Learning.
- Tian, H., Dogbe, C. S. K., Pomegbe, W. W. K., Sarsah, S. A., & Otoo, C. O. A. (2020). Organizational learning ambidexterity and openness, as determinants of SMEs' innovation performance. *European Journal of Innovation Management*. Vol. 24 (2), pp. 414-438
- Tijn, H. B. (2019). Entrepreneurial competencies : the influence of entrepreneurial competencies on the degree of social entrepreneurship among entrepreneurs in the Netherlands, Masters' Thesis, University of Twente, The Netherlands. <http://purl.utwente.nl/essays/77486>
- Toki, A. & Qadhi, A. (2015), Trends in labor market of Yemen, *Alandalus journal for social and applied sciences*, Vol.13 (10), pp, 84 - 120.
- Tomé, E. (2003). Bad Management and its Consequences in a Problematic European Union Member (Portugal). *J. UCS*, 9(12), 1519.
- Turyahebwa, A., Sunday, A., & Ssekajugo, D. (2013). Financial management practices and business performance of small and medium enterprises in western Uganda. *African Journal of Business Management*. Vol. 7(38), pp. 3875-3885.
- Twesige, D., Gasheja, F., & Barayendema, J. (2020). Tax Incentives and Growth of SMEs in Rwanda: A Case Study of Small and Medium Enterprises in Nyarugenge District. In *Rwandan Economy at the Crossroads of Development* (pp. 231-247). Springer, Singapore.
- U.S. Small Business Administration, (2018). United States Small Business Profile, 2018, retrieved from: <https://www.sba.gov/sites/default/files/advocacy/2018-Small-Business-Profiles-US.pdf> (Accessed: 23/8/2019).
- UNCTAD, (2001). Growing Micro and Small Enterprises In LDCs The “missing middle” in LDCs: why micro and small enterprises are not growing, United Nations Digital Library, <https://digitallibrary.un.org/record/452413>
- UNDP & SMEPS (2015). *Rapid business survey: impact of the Yemen crisis on private sector activity*, United Nations Development Programme, Small Micro Enterprise Promotion Service (SMEPS), Sana'a.
- UNDP, (2011). Arab knowledge report 2010/2011: Preparing future generations for the knowledge society. Al Ghurair Printing & Publishing House L.L.C, Dubai, UAE, <https://www.undp.org/content/dam/rbas/report/AKR2010-2011-Eng-Full-Report.pdf>

- UNDP, (2013). *Human Development Report 2013. The Rise of the South: Human Progress in a Diverse World*. United Nations, New York <http://hdr.undp.org/en/2013-report>
- UNDP, (2018). *Human Development Indices and Indicators 2018 Statistical Update*, United Nations, New York, http://hdr.undp.org/sites/default/files/2018_human_development_statistical_update.pdf
- UNDP, (2019). *Human Development Report 2019, Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century*, United Nations Development Programme, NY.
- UNDP. (2011). *Arab knowledge report 2010/2011: Preparing future generations for the knowledge society*. Al Ghurair Printing & Publishing House L.L.C, Dubai, UAE, <https://www.undp.org/content/dam/rbas/report/AKR2010-2011-Eng-Full-Report.pdf>
- Useem, M. (2006). How well-run boards make decisions. *Harvard Business Review*, 84(11), 130.
- VanderWeele, T., & Vansteelandt, S. (2014). Mediation analysis with multiple mediators. *Epidemiologic methods*, 2(1), 95-115.
- Wagner III, J. A. (1994). Participation's effects on performance and satisfaction: A reconsideration of research evidence. *Academy of management Review*, 19(2), 312-330.
- Wang, C., Walker, E., & Redmond, J. (2007). Explaining the lack of strategic planning in SMEs: The importance of owner motivation, *International Journal of Organisational Behaviour*, Volume 12 (1), 1-16
- Wang, K. Y., Hermens, A., Huang, K. P., & Chelliah, J. (2015). Entrepreneurial orientation and organizational learning on SMEs' innovation. *International Journal of Organizational Innovation*. Vol. 7(4), pp. 71-81.
- Wang, K. Y., Hermens, A., Huang, K. P., & Chelliah, J. (2015). Entrepreneurial orientation and organizational learning on SMEs' innovation. *International Journal of Organizational Innovation*. Vol. 7(4), pp. 71-81.
- Welsh, D. H., & Raven, P. (2006). Family business in the Middle East: An exploratory study of retail management in Kuwait and Lebanon. *Family Business Review*, 19(1), 29-48.
- Westhead, P., & Storey, D. (1996). Management training and small firm performance: why is the link so weak?. *International Small Business Journal*, 14(4), 13-24.
- Wheelen, T. L., Hunger, J. D., Hoffman, A. N., & Bamford, C. E. (2015). *Strategic management and business policy Globalization, Innovation, and Sustainability*, Pearson Education Limited, England.
- Witte, E., Joost, N., & Thimm, A. L. (1972). Field research on complex decision-making processes-the phase theorem. *International Studies of Management & Organization*, 2(2), 156-182.
- Wong, C., Marshall, J. N., Alderman, N., & Thwaites, A. (1997). Management training in small and medium-sized enterprises: methodological and conceptual issues. *The International Journal of Human Resource Management*, 8(1), 44-65.
- Wook Yoo, J., Lemak, D. J., & Choi, Y. (2006). Principles of management and competitive strategies: using Fayol to implement Porter. *Journal of Management History*, 12(4), 352-368.
- World Bank Group, (2013), *Enterprise Surveys: YEMEN - 2013*, retrieved from <https://www.enterprisesurveys.org/~media/GIAWB/EnterpriseSurveys/Documents/Profiles/English/Yemen-2013.pdf>

- World Bank, (2000). *World development indicators 2000*. World Development Indicators. Washington, D.C., The World Bank. <http://documents.worldbank.org/curated/en/462341468766204683/World-development-indicators-2000> (Accessed on 13/01/2018).
- World Bank, (2010). *Yemen - Education status report : challenges and opportunities (English)*. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/266781468154495152/Yemen-Education-status-report-challenges-and-opportunities>.
- World Bank, (2012). *Yemen - Enterprise Revitalization and Employment Pilot Project*, Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/391691468168267344/Yemen-Enterprise-Revitalization-and-Employment-Pilot-Project>
- World Bank, (2013). *Yemen - Enterprise Revitalization and Employment Pilot Project (Arabic)*, World Bank Group Washington, D.C.
- World Bank, (2015). *Yemen, Republic of - Unlocking the potential for economic growth (English)*. Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/673781467997642839/Yemen-Republic-of-Unlocking-the-potential-for-economic-growth>
- World Bank, (2017). *Private Sector Readiness to Contribute to Reconstruction & Recovery in Yemen*, Yemen Policy Note 3, World Bank Group, Washington, D.C.
- World Bank, (2018). *Yemen Food Imports: A focus on Critical Challenges and Priority Interventions*, retrieved from: <https://www.worldbank.org/en/country/yemen/publication/securing-imports-of-essential-food-commodities-to-yemen> (Accessed: 226/8/2019).
- World Bank, (2019). *Yemen Bringing Back Business Project: Risky Business-Impact of Conflict on Private Enterprises*. World Bank Group, Washington, DC <http://hdl.handle.net/10986/32048> .
- World Bank, (2019a). *Doing business 2020, economy profile, Republic of Yemen*, The World Bank, Washington, DC.
- Wu, D. (2009). Measuring performance in small and medium enterprises in the information & communication technology industries. RMIT University Thesis
- Xu, W. (2010). *The effects of emotions on strategic decision-making: A China-US cross-cultural experimental study*. Old Dominion University. Virginia, USA.
- Yanli, X., Yingjun, F., & Chenguann, Z. (2009, December). Managerial Performance Evaluation-Based on an Example Analysis. In *2009 International Forum on Computer Science-Technology and Applications* (Vol. 3, pp. 337-340). IEEE.
- Yemeni Industrialists Association, (2000). Obstacles of the growth of industrial sectors and their remedies, working paper, Yemeni Industrialists Association , Sanaa, Yemen.
- Yousef, D. A. (1998). Predictors of decision- making styles in a non- western country. *Leadership & Organization Development Journal*.
- Yucesoy, B., & Barabási, A. L. (2016). Untangling performance from success. *EPJ Data Science*, 5(1), 1-10.
- Zaqout, I. S., Abu-Naser, S. S., El Talla, S. A., & Al Shobaki, M. J. (2018). Information Technology used and it's Impact on the Participation of Administrative Staff in Decision-Making in Palestinian Universities. *International Journal of Academic Multidisciplinary Research*, Vol. 2 (8), pp. 7-26.
- Zhu, Q., Qu, Y., Geng, Y., & Fujita, T. (2017). A comparison of regulatory awareness and green supply chain management practices among Chinese and Japanese manufacturers. *Business Strategy and the Environment*, 26(1), 18-30.

Zulfqar, A., Valcke, M., Devos, G., Tuytens, M., & Shahzad, A. (2016). Leadership and decision-making practices in public versus private universities in Pakistan. *Asia Pacific Education Review*, 17(1), 147-159.

Executive Summary

This study was initiated based on reviewing the available literature relating to management practices (MPs) and its role in developing the business performance in the manufacturing sector. The basic review unveils the cruciality of management practice and its adoption in the development and growth of business performance in developed, developing countries. However, a scant amount of literature is observed related to the role of such management practices in improving business performance in underdeveloped economies.

Hence, the main aim of the current study was to identify the role of management practices in providing resurgence to the manufacturing sector in Yemen, based on which, the scope is identified to be the decision making practices and their role in improving the performance of manufacturing SMEs who work in the food processing, home appliance and construction fields in Yemen as an underdeveloped economies.

The study is a cross sectional study employing an exploratory research design. It adopted the decision behaviour theory and the process oriented decision making. The literature is consulted to identify and measure the relevant variables forming the research model. A research questionnaire was developed, refereed and distributed to a sample of 42 individuals for conducting the pilot study, correction and changes were incorporated. The final research questionnaire was distributed to managers and owners of manufacturing SMEs following a nonprobability convenient sampling method. The total sample of the study is 400 responses.

The study used IBM SPSS 26th version, Microsoft Excel 2019 and SEMinR package (version 2.3.0) in Rstudio (2021-09-20) to conduct the data screening and data analysis.

The findings of the study unveil a low to moderate extent of adopting decision making practices as well as strategic practices related to decision making; a low level of performance among manufacturing SMEs. Organizational learning is

moderately practiced along with a very low level of adopting and utilizing information systems in decision making. Entrepreneurial competencies as well as tendency for further training and education are moderately common among managers of manufacturing SMEs in Yemen.

The findings further indicate that decision making practices and business performance differ among manufacturing SMEs when they are evaluated according their scope of operations, ownership by managers, age and position of managers/owners.

Manufacturing SMEs Performance in Yemen is significantly influenced by Decision making practices, entrepreneurial competencies , while it is not significantly influenced by Organizational learning, traditional DMPs, information technology systems in DM, and Willingness of managers for further education or training. There is no mediating role of organizational learning, adopting information technology in DM, and traditional DMPs in the relationship between DMPs and SMEs Performance. There is no moderating role of entrepreneurial competencies and the willingness of managers/owners for further education or training in the effect of DMPs on SMEs performance.

The study discussed the results and findings and offered valuable suggestions based on the research outcomes. The study significantly adds to the available literature by being the first study to investigate the role of decision making practices in improving the business performance among manufacturing SMEs in an underdeveloped country. This contribution is more particular to the scant literature about decision making practices in the Arabic world in general and in the Yemeni context in particular.

5.7 Appendices

Appendix (01)

(Cross loadings of the zero order model)

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
DIAGPRO1	0.810	0.556	0.507	0.496	0.496	0.435	0.467	0.474	0.534	0.523	0.506	0.424	0.284	0.360	0.448	0.338	0.512
DIAGPRO2	0.855	0.451	0.424	0.442	0.436	0.404	0.392	0.413	0.446	0.490	0.511	0.402	0.293	0.392	0.378	0.310	0.431
DIAGPRO3	0.860	0.506	0.518	0.486	0.442	0.421	0.441	0.474	0.491	0.545	0.545	0.425	0.309	0.399	0.381	0.332	0.490
DIAGPRO4	0.757	0.449	0.497	0.427	0.434	0.411	0.389	0.462	0.459	0.541	0.505	0.467	0.272	0.406	0.385	0.337	0.468
DEVALT1	0.470	0.775	0.497	0.507	0.420	0.476	0.434	0.449	0.374	0.448	0.554	0.443	0.241	0.318	0.421	0.390	0.467
DEVALT2	0.498	0.818	0.558	0.527	0.421	0.432	0.439	0.412	0.345	0.473	0.515	0.380	0.219	0.308	0.417	0.314	0.434
DEVALT3	0.508	0.877	0.591	0.531	0.514	0.538	0.494	0.421	0.446	0.477	0.523	0.422	0.194	0.323	0.418	0.321	0.466
DEVALT4	0.506	0.841	0.682	0.561	0.525	0.531	0.476	0.459	0.479	0.479	0.538	0.466	0.237	0.366	0.463	0.303	0.515
EVALALT1	0.463	0.670	0.821	0.533	0.525	0.526	0.499	0.439	0.421	0.461	0.508	0.490	0.253	0.307	0.483	0.334	0.481
EVALALT2	0.520	0.580	0.859	0.532	0.542	0.527	0.490	0.414	0.398	0.491	0.555	0.477	0.262	0.379	0.424	0.333	0.478
EVALALT3	0.525	0.568	0.881	0.618	0.597	0.545	0.530	0.428	0.417	0.525	0.512	0.559	0.245	0.344	0.493	0.376	0.508
EVALALT4	0.479	0.549	0.782	0.627	0.518	0.466	0.409	0.443	0.405	0.537	0.491	0.500	0.204	0.323	0.510	0.396	0.490
CHOOSALT1	0.449	0.511	0.598	0.804	0.589	0.551	0.395	0.407	0.448	0.524	0.504	0.373	0.254	0.298	0.462	0.279	0.530
CHOOSALT2	0.466	0.572	0.547	0.847	0.588	0.541	0.439	0.433	0.418	0.532	0.515	0.397	0.243	0.353	0.484	0.333	0.510
CHOOSALT3	0.501	0.538	0.592	0.894	0.610	0.519	0.402	0.453	0.393	0.576	0.503	0.461	0.253	0.329	0.507	0.345	0.560
CHOOSALT4	0.500	0.564	0.612	0.852	0.650	0.552	0.452	0.515	0.421	0.568	0.514	0.447	0.234	0.358	0.488	0.383	0.550
IMPLEMALT1	0.475	0.478	0.577	0.671	0.841	0.593	0.471	0.488	0.431	0.539	0.556	0.410	0.206	0.399	0.447	0.401	0.585
IMPLEMALT2	0.424	0.468	0.548	0.643	0.866	0.584	0.498	0.492	0.422	0.496	0.503	0.468	0.233	0.397	0.478	0.428	0.569
IMPLEMALT3	0.462	0.448	0.552	0.548	0.848	0.614	0.506	0.472	0.471	0.510	0.499	0.466	0.288	0.380	0.457	0.434	0.526
IMPLEMALT4	0.488	0.517	0.515	0.544	0.801	0.695	0.512	0.501	0.449	0.486	0.520	0.509	0.237	0.390	0.437	0.339	0.540
MONITORALT1	0.441	0.468	0.498	0.487	0.619	0.799	0.548	0.507	0.461	0.484	0.548	0.497	0.263	0.457	0.439	0.360	0.526
MONITORALT2	0.422	0.539	0.532	0.581	0.664	0.863	0.516	0.490	0.496	0.516	0.544	0.441	0.195	0.429	0.412	0.339	0.526

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
MONITORALT3	0.377	0.467	0.475	0.484	0.564	0.845	0.505	0.456	0.493	0.439	0.555	0.389	0.214	0.398	0.358	0.352	0.511
MONITORALT4	0.444	0.512	0.540	0.554	0.607	0.810	0.506	0.500	0.485	0.458	0.542	0.416	0.245	0.405	0.452	0.342	0.533
EVACP1	0.430	0.497	0.524	0.417	0.520	0.544	0.872	0.554	0.457	0.431	0.497	0.549	0.336	0.477	0.471	0.423	0.493
EVACP2	0.457	0.500	0.499	0.431	0.516	0.561	0.899	0.561	0.524	0.477	0.510	0.563	0.343	0.484	0.493	0.403	0.503
EVACP3	0.472	0.471	0.521	0.436	0.513	0.544	0.885	0.614	0.551	0.404	0.501	0.571	0.282	0.516	0.485	0.403	0.537
EVACP4	0.437	0.475	0.467	0.448	0.518	0.540	0.831	0.616	0.547	0.458	0.542	0.528	0.289	0.510	0.487	0.476	0.483
EVAMP1	0.453	0.443	0.404	0.413	0.425	0.446	0.581	0.758	0.462	0.419	0.416	0.433	0.216	0.324	0.421	0.320	0.493
EVAMP2	0.440	0.427	0.429	0.434	0.507	0.496	0.535	0.852	0.500	0.430	0.453	0.489	0.290	0.467	0.486	0.402	0.523
EVAMP3	0.440	0.455	0.441	0.459	0.461	0.485	0.563	0.849	0.477	0.418	0.471	0.447	0.219	0.396	0.420	0.331	0.505
EVAMP4	0.498	0.412	0.417	0.446	0.513	0.511	0.536	0.823	0.610	0.411	0.480	0.439	0.291	0.436	0.436	0.385	0.493
EVAMSP1	0.461	0.421	0.416	0.393	0.474	0.539	0.497	0.583	0.825	0.474	0.543	0.392	0.275	0.461	0.361	0.330	0.515
EVAMSP2	0.430	0.379	0.376	0.354	0.453	0.499	0.476	0.512	0.841	0.409	0.475	0.402	0.205	0.431	0.325	0.322	0.453
EVAMSP3	0.546	0.384	0.404	0.402	0.413	0.440	0.489	0.506	0.848	0.408	0.453	0.386	0.300	0.379	0.368	0.325	0.482
EVAMSP4	0.526	0.478	0.436	0.492	0.418	0.461	0.523	0.476	0.817	0.464	0.488	0.448	0.225	0.371	0.425	0.284	0.485
STANINTRES1	0.522	0.482	0.493	0.517	0.496	0.464	0.377	0.383	0.404	0.818	0.509	0.523	0.302	0.381	0.436	0.400	0.460
STANINTRES2	0.519	0.478	0.522	0.562	0.508	0.494	0.415	0.459	0.459	0.880	0.599	0.468	0.314	0.416	0.441	0.325	0.462
STANINTRES3	0.590	0.486	0.520	0.572	0.538	0.503	0.499	0.460	0.482	0.852	0.695	0.476	0.320	0.432	0.463	0.401	0.478
STANSWOT1	0.539	0.466	0.518	0.518	0.523	0.515	0.503	0.455	0.479	0.650	0.785	0.507	0.375	0.453	0.426	0.408	0.515
STANSWOT2	0.541	0.530	0.522	0.510	0.497	0.544	0.487	0.492	0.491	0.571	0.829	0.495	0.332	0.447	0.415	0.376	0.515
STANSWOT3	0.486	0.542	0.488	0.481	0.522	0.548	0.478	0.431	0.470	0.536	0.840	0.423	0.233	0.450	0.413	0.412	0.503
STANSWOT4	0.523	0.535	0.524	0.479	0.531	0.555	0.500	0.462	0.497	0.581	0.828	0.463	0.252	0.485	0.449	0.375	0.511
STANSWOT5	0.481	0.565	0.465	0.451	0.454	0.539	0.425	0.419	0.470	0.544	0.807	0.414	0.226	0.438	0.375	0.389	0.464
Performane_Groeth	0.472	0.466	0.484	0.578	0.554	0.521	0.471	0.530	0.457	0.448	0.519	0.475	0.329	0.440	0.470	0.360	0.851
Performance_Fiveyears	0.507	0.565	0.529	0.538	0.548	0.515	0.527	0.551	0.468	0.464	0.528	0.498	0.364	0.475	0.566	0.456	0.906
Internal_Performance	0.523	0.510	0.512	0.548	0.612	0.573	0.545	0.553	0.537	0.498	0.565	0.506	0.311	0.487	0.524	0.457	0.901
Learning_Groeth	0.518	0.446	0.513	0.543	0.589	0.593	0.470	0.501	0.563	0.502	0.528	0.487	0.353	0.460	0.547	0.444	0.825
ORGLAR1	0.417	0.436	0.424	0.389	0.388	0.441	0.503	0.394	0.353	0.424	0.423	0.712	0.420	0.373	0.470	0.408	0.407
ORGLAR2	0.388	0.343	0.439	0.351	0.391	0.399	0.445	0.416	0.369	0.426	0.392	0.804	0.376	0.377	0.522	0.464	0.404
ORGLAR3	0.387	0.346	0.476	0.343	0.426	0.334	0.431	0.415	0.332	0.432	0.387	0.803	0.301	0.380	0.492	0.494	0.383
ORGLAR4	0.440	0.445	0.526	0.422	0.466	0.399	0.518	0.457	0.396	0.456	0.500	0.822	0.301	0.471	0.503	0.537	0.476

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ORGLR5	0.390	0.425	0.468	0.399	0.454	0.459	0.539	0.440	0.426	0.478	0.469	0.723	0.287	0.583	0.408	0.405	0.495
TRADMS1	0.196	0.171	0.137	0.159	0.108	0.061	0.140	0.160	0.134	0.206	0.134	0.215	0.532	0.161	0.259	0.273	0.137
TRADMS2	0.192	0.147	0.180	0.162	0.176	0.130	0.137	0.158	0.088	0.231	0.146	0.208	0.748	0.131	0.267	0.237	0.179
TRADMS3	0.209	0.158	0.166	0.145	0.178	0.184	0.234	0.192	0.182	0.205	0.220	0.262	0.818	0.216	0.281	0.226	0.252
TRADMS4	0.357	0.265	0.293	0.306	0.297	0.316	0.398	0.321	0.351	0.363	0.391	0.457	0.800	0.415	0.320	0.332	0.427
USINGIT1	0.443	0.363	0.373	0.325	0.401	0.439	0.539	0.422	0.451	0.404	0.459	0.535	0.308	0.835	0.382	0.387	0.461
USINGIT2	0.355	0.265	0.269	0.309	0.375	0.410	0.447	0.379	0.362	0.373	0.441	0.447	0.305	0.852	0.344	0.358	0.418
USINGIT3	0.399	0.306	0.323	0.297	0.387	0.423	0.475	0.420	0.417	0.356	0.437	0.453	0.280	0.857	0.319	0.414	0.451
USINGIT4	0.379	0.350	0.337	0.344	0.408	0.437	0.483	0.445	0.411	0.418	0.476	0.490	0.297	0.852	0.399	0.443	0.457
USINGIT5	0.407	0.377	0.386	0.370	0.382	0.428	0.436	0.413	0.422	0.464	0.514	0.465	0.338	0.790	0.372	0.347	0.449
ENTRCOMP1	0.447	0.422	0.516	0.492	0.478	0.446	0.453	0.421	0.351	0.508	0.457	0.506	0.271	0.355	0.736	0.525	0.491
ENTRCOMP2	0.356	0.401	0.466	0.465	0.372	0.350	0.425	0.379	0.348	0.461	0.387	0.507	0.298	0.303	0.824	0.447	0.467
ENTRCOMP3	0.393	0.447	0.438	0.493	0.482	0.394	0.453	0.478	0.375	0.397	0.438	0.480	0.311	0.401	0.860	0.579	0.525
ENTRCOMP4	0.437	0.461	0.485	0.458	0.440	0.448	0.498	0.469	0.391	0.367	0.418	0.515	0.313	0.351	0.820	0.502	0.521
ENTRCOMP5	0.250	0.296	0.322	0.318	0.350	0.334	0.339	0.360	0.272	0.338	0.287	0.425	0.358	0.295	0.696	0.571	0.357
WILLFUED1	0.220	0.208	0.222	0.240	0.288	0.237	0.262	0.310	0.216	0.255	0.277	0.394	0.316	0.310	0.485	0.681	0.298
WILLFUED2	0.328	0.387	0.367	0.321	0.418	0.340	0.420	0.377	0.329	0.354	0.388	0.493	0.259	0.355	0.599	0.802	0.392
WILLFUED3	0.318	0.327	0.350	0.295	0.363	0.368	0.426	0.357	0.319	0.353	0.402	0.500	0.288	0.418	0.448	0.821	0.381
WILLFUED4	0.360	0.306	0.373	0.356	0.397	0.346	0.388	0.323	0.301	0.391	0.404	0.463	0.305	0.362	0.519	0.794	0.442

1	Diagnosing Problems
2	Developing Alternatives
3	Evaluating Alternatives
4	Choosing Alternative
5	Implementing Alternative
6	Monitoring effectiveness
7	Evaluating Current Performance

8	Evaluating Managerial Performance
9	Evaluating Managers Performance
10	Strategic Analysis Resources
11	Strategic Analysis SWOT
12	Organizational Learning
13	Traditional Decision making practices
14	IT in Decision making
15	Entrepreneurial Competences
16	Willingness For further training and Education
17	SMEs Performance

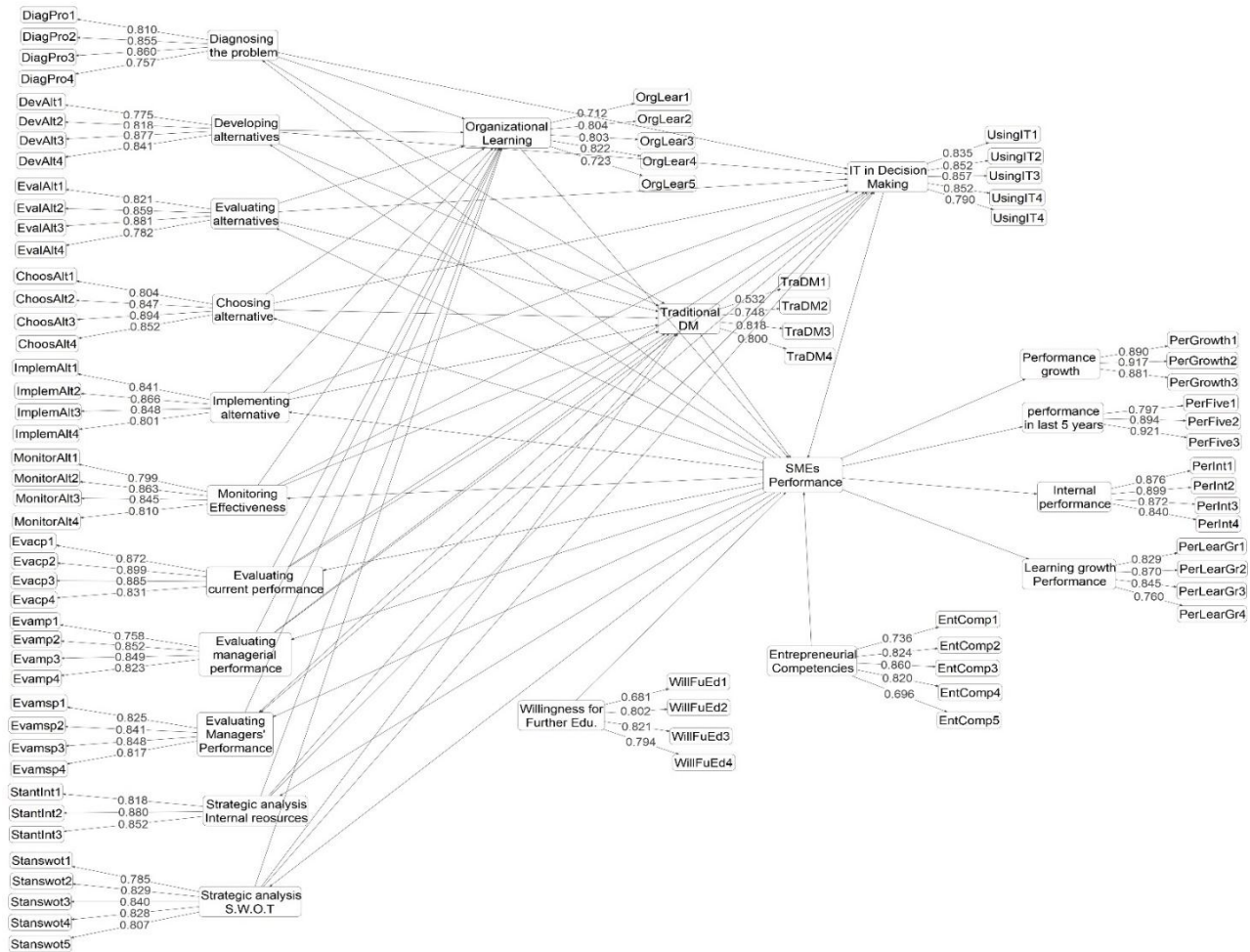
Variables names

Cross loadings of the Higher order model

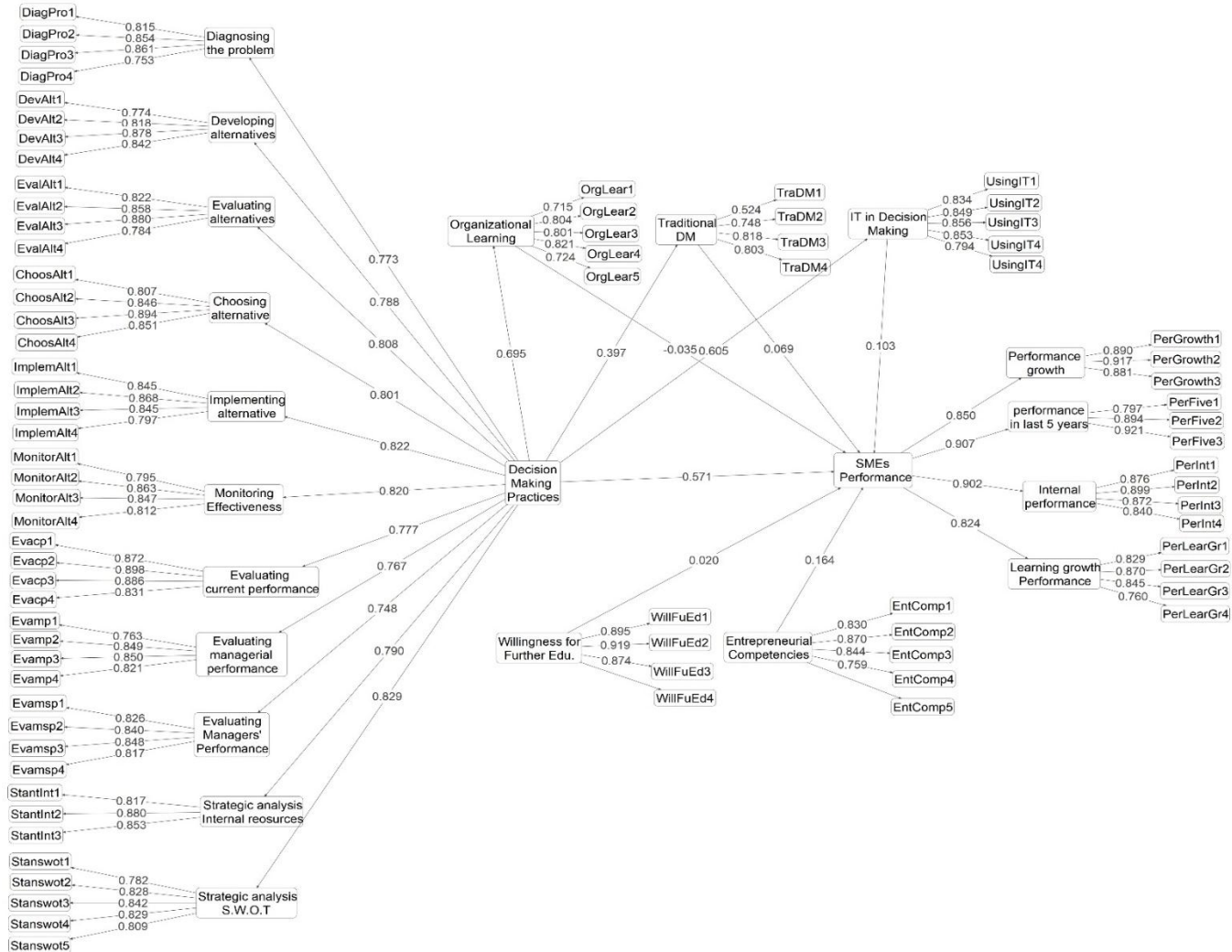
	DecisionMP s	Organizational Learning	Traditional DMStyle	IT inDM	Entrepreneurial Competences	Willingness ForEducation	SMEs Performance
Diagnosing Problems	0.773	0.524	0.353	0.475	0.486	0.402	0.581
Developing Alternatives	0.788	0.520	0.269	0.399	0.520	0.400	0.571
Evaluating Alternatives	0.808	0.606	0.288	0.405	0.571	0.430	0.585
Choosing Alternative	0.801	0.496	0.289	0.394	0.571	0.395	0.632
Implementing Alternative	0.822	0.552	0.287	0.467	0.542	0.477	0.662
Monitoring effectiveness	0.820	0.528	0.278	0.511	0.502	0.420	0.632
Evaluating Current Performance	0.777	0.635	0.358	0.570	0.555	0.488	0.579
Evaluating Managerial Performance	0.767	0.552	0.311	0.497	0.538	0.439	0.613
Evaluating Managers Performance	0.748	0.489	0.302	0.494	0.445	0.379	0.582
Strategic Analysis Resources	0.790	0.576	0.367	0.483	0.526	0.442	0.549

Strategic Analysis SWOT	0.829	0.566	0.350	0.557	0.509	0.479	0.614
Performance Growth	0.631	0.475	0.329	0.440	0.470	0.360	0.850
Performance Five years	0.658	0.499	0.365	0.476	0.566	0.456	0.907
Internal Performance	0.686	0.506	0.311	0.487	0.524	0.457	0.902
Learning Growth	0.661	0.488	0.354	0.460	0.547	0.444	0.824
ORGLER1	0.527	0.715	0.421	0.374	0.470	0.408	0.407
ORGLER2	0.501	0.804	0.377	0.377	0.522	0.464	0.404
ORGLER3	0.495	0.801	0.301	0.380	0.492	0.494	0.383
ORGLER4	0.577	0.821	0.301	0.471	0.503	0.537	0.476
ORGLER5	0.569	0.724	0.286	0.583	0.408	0.405	0.495
TRADMS1	0.183	0.215	0.524	0.161	0.259	0.273	0.137
TRADMS2	0.200	0.208	0.748	0.131	0.267	0.237	0.178
TRADMS3	0.239	0.263	0.818	0.216	0.281	0.226	0.252
TRADMS4	0.421	0.458	0.803	0.416	0.320	0.332	0.428
USINGIT1	0.532	0.535	0.307	0.834	0.382	0.387	0.461
USINGIT2	0.460	0.447	0.305	0.849	0.344	0.358	0.418
USINGIT3	0.489	0.454	0.280	0.856	0.319	0.414	0.451
USINGIT4	0.517	0.491	0.296	0.853	0.399	0.443	0.457
USINGIT5	0.529	0.465	0.338	0.794	0.372	0.347	0.450
ENTRCOMP1	0.572	0.506	0.271	0.355	0.736	0.525	0.491
ENTRCOMP2	0.506	0.507	0.297	0.303	0.824	0.447	0.467
ENTRCOMP3	0.549	0.480	0.310	0.401	0.860	0.579	0.526
ENTRCOMP4	0.559	0.516	0.313	0.351	0.820	0.502	0.521
ENTRCOMP5	0.398	0.425	0.358	0.295	0.696	0.571	0.358
WILLFUED1	0.315	0.393	0.316	0.310	0.485	0.681	0.298
WILLFUED2	0.463	0.493	0.258	0.355	0.599	0.802	0.392
WILLFUED3	0.446	0.500	0.287	0.418	0.448	0.821	0.381
WILLFUED4	0.453	0.463	0.304	0.363	0.519	0.794	0.442

Appendix (02)



The measurement model in a zero order level.



The measurement model in its higher order level.

Appendix (03)

NO.

Management Practices for providing Resurgence to the Manufacturing Sector – The Case of Yemen (Research Questionnaire)

Dear managers/owners of manufacturing SMEs in Yemen,

This research study is dedicated to investigating the extent and level of adopting decision making practices and their role in improving the managerial performance of manufacturing SMEs in Yemen. I would appreciate if you consent to participating in this research study by filling out this research questionnaire. I also would like to ensure you, that any responses or point of view collected through this research tool, will remain confidential and will never be used for any other purposes than completing the research work with meaningful conclusions and fruitful suggestion.

At the same time, if you would like to know what the result of this study, please send an anonymous email to (mugaahed@yahoo.com), and you should receive a summary of the result of this research at the end and completion of this research work.

The questionnaire is divided into two parts, the first part is related to demographic characteristics of the respondents, please select the answer that matchers yours.

The second part is measuring the management practices adoption and performance of enterprises. The answers is ranging from one which means absolute disagreement to the statement, and ends with seven which means an absolute agreement to the statement. The middle point (Three) indicates that you neither agree or disagree to the statement.

Kindest regards,
Mugaahed Abdu kaid Saleh,
Research Scholar, Kuvempu
University, India
Mob: 00967799824366

Gender	Male		Female	
Age	Less than 30 years	31 to 40 years	41 to 50 years	More than 50 years
City	Sanaa	Aden	Taiz	IBB
Position	General manager	department manager	executive manager	administrative manager
Education level	High school	Diploma	Bachelor	Postgraduate
Major				
Experience	Less than a year	1 - 5 years	6 - 10 years	More than 10 years
Ownership in the enterprise?	Yes		No	
No. of employees	1-9	10-19	20-45	more than 45
Field of manufacturing.	Food processing	construction	others	
Scope of operation	domestic	National	International	
Year of establishment				

#	Item	Responses						
Decision making process:								
Evaluating current performance:								
A1	Our company evaluates the results of its current performance	①	②	③	④	⑤	⑥	⑦
A2	Our company evaluates the extent of its success in accomplishing its current mission.	①	②	③	④	⑤	⑥	⑦
A3	Our company evaluates its success in accomplishing its current strategic goals.	①	②	③	④	⑤	⑥	⑦
A4	Our company evaluates the extent of ability within the strategies to accomplish the planned performance.	①	②	③	④	⑤	⑥	⑦
Evaluating Managerial performance:								
B1	Evaluating managerial performance is one of the priorities in our organization. (Global Item)	①	②	③	④	⑤	⑥	⑦
B2	Our organization has an evaluation form for evaluating managerial performance.	①	②	③	④	⑤	⑥	⑦
B3	There is a role defined for each Manager in the organization	①	②	③	④	⑤	⑥	⑦

#	Item	Responses						
B4	Our company set managerial competences as a measure to evaluate managerial performance	①	②	③	④	⑤	⑥	⑦
C	Evaluating managers' performance:							
C1	Our organization evaluates the performance of the board of directors	①	②	③	④	⑤	⑥	⑦
C2	Our organization creates the required changes in the membership of board of directors based on efficiency.	①	②	③	④	⑤	⑥	⑦
C3	Our company evaluates the performance of executives (general manager and administrative managers)	①	②	③	④	⑤	⑥	⑦
C4	Our organization works on attracting executives based on efficiency.	①	②	③	④	⑤	⑥	⑦
D	Identifying a problem:							
D1	I discuss with team members to know why it is a problem and why it should be solved.	①	②	③	④	⑤	⑥	⑦
D2	To enhance decision making, I grant the team members confidence to identify problems and propose solutions.	①	②	③	④	⑤	⑥	⑦
D3	We make discussions regarding identifying early symptoms about any potential problems.	①	②	③	④	⑤	⑥	⑦
D4	We encourage multiple ways of viewing the problems among team members.	①	②	③	④	⑤	⑥	⑦
E	Strategic analysis of internal resources and capabilities:							
E1	Our organization ensures evaluating its organizational structure and culture regularly.	①	②	③	④	⑤	⑥	⑦
E2	Our organization ensures evaluating its financial resources regularly.	①	②	③	④	⑤	⑥	⑦
E3	Our organization ensures evaluating its human resources regularly (skills, knowledge, functional expertise etc.).	①	②	③	④	⑤	⑥	⑦
F	Strategic analysis (SWOT):							
F1	Our organization pays attention to SWOT analysis in a regular basis as a priority of its strategic plans. (Global)	①	②	③	④	⑤	⑥	⑦
F2	Our organization identifies and evaluates the strategic factors relevant to strength in performance and business activities.	①	②	③	④	⑤	⑥	⑦
F3	Our organization identifies and evaluates the strategic factors relevant to weakness in the performance and managerial performance.	①	②	③	④	⑤	⑥	⑦
F4	Our organization identifies and evaluates the strategic factors relevant to opportunities in business.	①	②	③	④	⑤	⑥	⑦
F5	Our organization identifies and evaluates the strategic factors relevant to threats and challenges facing the business and activities.	①	②	③	④	⑤	⑥	⑦
G	Developing alternatives:							
G1	The manager participates with team members in the process of developing alternatives for the decision.	①	②	③	④	⑤	⑥	⑦

#	Item	Responses						
G2	We utilize previous experience and practices while searching for alternatives.	①	②	③	④	⑤	⑥	⑦
G3	The team members are encouraged to give their ideas and thought about possible alternatives.	①	②	③	④	⑤	⑥	⑦
G4	Communication is established and encouraged among the team members in respect to developing potential alternatives.	①	②	③	④	⑤	⑥	⑦
H	Evaluating available alternatives:							
H1	We identify the advantages and disadvantages of each alternative.	①	②	③	④	⑤	⑥	⑦
H2	We formulate the expected outcomes of each alternative for the evaluation process	①	②	③	④	⑤	⑥	⑦
H3	The team members are encouraged to give their ideas and thought about possible alternatives.	①	②	③	④	⑤	⑥	⑦
H4	We evaluate the effectiveness of each alternative and its chances of being the best alternative.	①	②	③	④	⑤	⑥	⑦
I	Selecting the best alternative:							
I1	I cooperate with team to discuss selecting the alternative with more merits and less demerits	①	②	③	④	⑤	⑥	⑦
I2	I take into consideration the various points of views of the team member in respect to selecting the best alternative.	①	②	③	④	⑤	⑥	⑦
I5	We exchange thoughts, messages and ideas in the process of selecting the best alternative	①	②	③	④	⑤	⑥	⑦
I6	Positive attitude is maintained among team members when suggesting their views on selecting best alternative.	①	②	③	④	⑤	⑥	⑦
J	Implementing the best alternative:							
J1	Our organization identifies the appropriate budget for implementing the decision.	①	②	③	④	⑤	⑥	⑦
J2	Our organization presents the required work procedures for implementing the decisions.	①	②	③	④	⑤	⑥	⑦
J3	We begin with minor reactions then we keep going through in the implementation process.	①	②	③	④	⑤	⑥	⑦
J5	We seek experts opinions for the team members in implementing the decision.	①	②	③	④	⑤	⑥	⑦
K	Monitoring and following up the decision post implementation:							
K1	Our organization relies on specific criteria to measure the extent of success of the decisions.	①	②	③	④	⑤	⑥	⑦
K2	Our organization monitors the decision in all the stages of implementation.	①	②	③	④	⑤	⑥	⑦
K3	Our organization measures the decision's effectiveness by comparing the results against the expectations	①	②	③	④	⑤	⑥	⑦
K5	Feedback are collected and taken seriously by management for re-decision making.	①	②	③	④	⑤	⑥	⑦
L	Financial performance (FP)							

#	Item	Responses						
L1	There has been an increase in return on sales.	①	②	③	④	⑤	⑥	⑦
L2	Positive change in net profit from operations	①	②	③	④	⑤	⑥	⑦
L3	The company experienced an increase in gross profit margin.	①	②	③	④	⑤	⑥	⑦
L4	There was an increase in working capital during the last 5 years.	①	②	③	④	⑤	⑥	⑦
Non-financial performance (NFP)								
M	Enterprises growth performance							
M1	The company has achieved positive growth lately.	①	②	③	④	⑤	⑥	⑦
M2	Customer satisfaction has significantly increased.	①	②	③	④	⑤	⑥	⑦
M3	The company has increased in the number of permanent employees employed.	①	②	③	④	⑤	⑥	⑦
N	Customer Performance during last five years							
N1	Number of new customers has increased.	①	②	③	④	⑤	⑥	⑦
N2	Sales to new and existing customers has increased.	①	②	③	④	⑤	⑥	⑦
N3	The performance in general has improved during the last five years.	①	②	③	④	⑤	⑥	⑦
O	Internal Business Processes Performance							
O1	Technology for new product development has improved.	①	②	③	④	⑤	⑥	⑦
O2	Customer satisfaction has improved regarding techniques and processes.	①	②	③	④	⑤	⑥	⑦
O3	Defective product rate have reduced.	①	②	③	④	⑤	⑥	⑦
O7	Ratio of performance in general has improved in the company.	①	②	③	④	⑤	⑥	⑦
P	Learning and Growth Performance							
P1	Employee happiness has been improved during the last five years.	①	②	③	④	⑤	⑥	⑦
P3	Gathering information about customers has improved.	①	②	③	④	⑤	⑥	⑦
P4	Employee turnover rate has reduced.	①	②	③	④	⑤	⑥	⑦
P5	Number of employee suggestions have increased.	①	②	③	④	⑤	⑥	⑦
Q	Entrepreneurial competences							
Q1	I dedicate my time and efforts to my assignments regardless of other conditions.	①	②	③	④	⑤	⑥	⑦
Q2	I always learn from others and from working with others.	①	②	③	④	⑤	⑥	⑦
Q3	I have the skills and abilities required for succeeding in entrepreneurship.	①	②	③	④	⑤	⑥	⑦
Q4	I orient my plans fixed or flexible to fit the future of the company.	①	②	③	④	⑤	⑥	⑦
Q5	I prefer being independent in my decisions and take their responsibility.	①	②	③	④	⑤	⑥	⑦
R	Tendency for further management and entrepreneurship education							
R1	I feel that my education was not fully related to the requirement of my job.	①	②	③	④	⑤	⑥	⑦
R2	Extra courses in management and entrepreneurship will definitely help in shaping my skills.	①	②	③	④	⑤	⑥	⑦

#	Item	Responses						
R3	Relying on the formal education I received is not helpful for succeeding in my job.	①	②	③	④	⑤	⑥	⑦
R4	Further entrepreneurial training will enhance my performance as a decision maker.	①	②	③	④	⑤	⑥	⑦
S	Traditional Decision making style:							
S1	When I have to make a decision I wait for a long time before starting to think about it.	①	②	③	④	⑤	⑥	⑦
S4	When I am convinced about the alternative, I don't have to convince others.	①	②	③	④	⑤	⑥	⑦
S5	if the situation is vague, I risk and make a decision based on what I could know.	①	②	③	④	⑤	⑥	⑦
S6	If the decision can be avoided, I ignore it.	①	②	③	④	⑤	⑥	⑦
U	Organizational Learning							
U1	Ability to learn is the key improvement	①	②	③	④	⑤	⑥	⑦
U2	Once we quit learning we endanger our future	①	②	③	④	⑤	⑥	⑦
U3	Employee learning is an investment, not an expense	①	②	③	④	⑤	⑥	⑦
U4	The company encourages interaction of people (employees) with the external environment	①	②	③	④	⑤	⑥	⑦
U7	We encourage employees to communicate	①	②	③	④	⑤	⑥	⑦
U	Using information technology in DM							
U1	Information systems are used for the purpose of DM	①	②	③	④	⑤	⑥	⑦
U2	The company relies on information system to make decisions	①	②	③	④	⑤	⑥	⑦
U3	Information systems impact the process of decision making	①	②	③	④	⑤	⑥	⑦
U4	Information system satisfy the need of management to make proper decisions.	①	②	③	④	⑤	⑥	⑦
U5	Information systems help the company improve the decision making process	①	②	③	④	⑤	⑥	⑦
X	CMB							
V1	I prefer blue to other colors	①	②	③	④	⑤	⑥	⑦
V2	I like the color blue	①	②	③	④	⑤	⑥	⑦
V3	I like blue clothes	①	②	③	④	⑤	⑥	⑦

**“MANAGEMENT PRACTICES FOR
PROVIDING RESURGENCE TO
MANUFACTURING SECTOR – A CASE STUDY
OF YEMEN”**

Thesis submitted to Kuvempu University for the Degree of

DOCTOR OF PHILOSOPHY

In

MANAGEMENT AND BUSINESS ADMINISTRATION



by

Mugaahed Abdu Kaid Saleh M.B.A.

Reg. No. 403 / 02-01-2018
Department of Management and Business Administration
Kuvempu University

Research Guide

Dr. Manjunath K. R. M.B.A., Ph.D.

Department of Management and Business Administration
Kuvempu University
Jnana Sahyadri, Shankaragatta – 577 451
Karnataka, India

September-2022

Chapter Five: Findings, Suggestions and Conclusion

5.1 Findings of the study

This section presents the major findings reached by the study in relevance to the Yemeni context. The findings are organized based on the demographic characteristics of enterprises and managers, the analysis of responses, the analysis of variance in the decision making practices as well as the performance of manufacturing SMEs in Yemen and finally, the hypothesis testing set for the study.

First objective: To explore the extent of adopting decision making practices among small and medium manufacturing enterprises in Yemen.

- It is found that there is a low extent of practising the diagnosis of problems for better decision making (Mean = 5.33), which implies lower attention being paid towards the importance of diagnosing and analysing the problems and their symptoms that create the need for a sound and effective decision.
- It is observed that the practice of developing alternatives is not widely practiced among manufacturing SMEs where it is moderately adopted by managers (Mean = 5.35), which may hinder the decision making process by leading to making less effective decisions.
- It is found that evaluating the available alternative solutions to a problem is moderately practiced by managers and owners of manufacturing SMEs (Mean = 5.28), where the effectiveness of the alternative is the most evaluated component and formulating the expected outcome is the least evaluated component.

- Choosing the most suitable alternative for decision making is practiced at a low to moderate level among managers of manufacturing SMEs in Yemen (Mean = 5.36), where the most practiced component is exchanging thoughts and ideas in the process of selecting the most appropriate alternative while taking the various points of view of the team members is the least practiced component.
- It is observed that the implementation of the proposed solution in the decision making process is moderately adopted among managers of manufacturing SMEs in Yemen (Mean = 5.26), where seeking experts' opinion with respect to implementing the solution is the most adopted practice, while presenting the required procedures for implementing the decisions is the least practiced component.
- It is observed that monitoring the decision implementation and its effectiveness is not widely adopted by managers of manufacturing SMEs in Yemen (Mean = 5.14), where collecting feedback about the decision implementation is the most practiced among other components, and relying on specific criteria to measure the successful implementation of the decision is the least practiced component.
- The strategic practice of evaluating the current performance is moderately adopted and followed by managers of manufacturing SMEs in Yemen (Mean = 5.40), where evaluating the results of the current performance is the least practiced component and evaluating the success in accomplishing the strategic goal of the enterprise is the most practiced component.
- It can be stated that evaluating the managerial performance among manufacturing SMEs included in this study is low to moderate in practice (Mean = 5.33), where possessing an evaluation form for the managerial performance evaluation is the least practiced component and treating the evaluation of managerial performance as a priority in the agenda of the enterprise is the most practiced component.

- It is also found the strategic practice of evaluating the performance of managers is adopted at the low to moderate level among manufacturing SMEs in Yemen (Mean = 5.12), where creating changes in the membership of the board of directors based on efficiency is the least adopted component and working towards attracting executives based on their efficiency is the most practiced component.
- Regular evaluation of internal resources is not largely adopted among manufacturing SMEs in Yemen (Mean = 5.33), where the regular evaluation of skills, knowledge and functional expertise of human resources is the least practiced component among manufacturing SMEs, while ensuring the regular evaluation of financial resources is the largely practiced component.
- It is found that there is a low level of the strategic analysis of strengths, weaknesses, opportunities and threats among manufacturing SMEs in Yemen (Mean = 5.15), where such analysis is not a large priority of enterprises and, however, attention is moderately paid to evaluate strength, weakness, opportunities and threats of the enterprises regularly.
- There is low growth in the performance of manufacturing SMEs in Yemen (Mean = 4.94), where the number of permanent employees does not increase, and satisfaction of their customers slowly grows, and similar improvement is observed in achieving positive growth.
- When asking managers to rate the general performance of enterprises during the last five years, it is found that there is a low level of performance improvement among manufacturing SMEs (Mean = 5.06), where low growth is associated with the increase in customers, sales and the improvement of general performance.

- It is revealed that there is a low level of improvement in the internal performance among manufacturing SMEs (Mean = 5.07), where a low rate of improvement is observed in reducing defective products and improving the technology used in operations among manufacturing enterprises.
- Manufacturing SMEs score a low level of the performance of learning growth in the enterprises (Mean = 4.96) where a very low performance is observed with respect to improvement of employees' happiness and loyalty, gathering information about customers, reducing the employee turnover, increasing the number of suggestions.
- Organizational learning is moderately adopted and practiced among manufacturing SMEs in Yemen (Mean = 5.34), where the most practiced component is basing the improvement on the ability to learn among employees and the least practiced component is the encouragement of the enterprises for employees to communicate with the external environment.
- There is a very low practice of traditional decision making where the decision making process is not followed among manufacturing SMEs in Yemen (Mean = 4.43), where the most adopted practice is avoiding the decision if it is avoidable, and the least adopted practice is considering the self convince enough to make the decision instead of convincing the team members with the importance and effectiveness of the decision.
- It is found that adopting and utilizing information systems in the decision making is very low (Mean = 5.05), where the least adopted practice is considering information technology tools as influential in the decision making process, and the most adopted practice is considering information technology tools and systems helpful in improving the decision making process among enterprises.

- It is observed that there is a low to moderate level of entrepreneurial competencies among managers of manufacturing SMEs in underdeveloped economies such as Yemen (Mean = 5.36), where the most possessed competence is orienting plans to be flexible with the needs and requirements of the enterprises and the least possessed competence is dedicating the time and efforts towards the assignments regardless of how other conditions are observed in the process.
- It is also observed that there is a low to moderate tendency for pursuing further training and education in the field of management and entrepreneurship in order to develop the managerial and entrepreneurial abilities among managers in manufacturing SMEs in an underdeveloped economy like Yemen (Mean = 5.25).
- When investigating the demographic variables, it is observed that the majority of sampled enterprises are medium enterprises that employ more than sixty workers (32.5%), 45.5% of SMEs were established during 2001 – 2010, which makes them around two decades old. 88.5% are functioning in the domestic level market. 28.8% of manufacturing SMEs in Yemen majorly engage in food processing activities.
- When investigating the characteristics of managers, only 10% of manufacturing SMEs have female managers and owners. Young managers among manufacturing SMEs are not observed to be common in the Yemeni context. Most respondents (36.75%) have the position of general managers. Possessing a bachelor's degree is the most common qualification among managers (58.3%). 48.3% of enterprises are run by managers who possess experience of five to ten years. A moderate section of the sampled managers (36.5%) possess ownership in the manufacturing SMEs they are running.

Objective 2: To explore the differences in adopting/applying decision making practices among manufacturing SMEs when evaluated according to their demographic characteristics.

- Adopting DMPs among manufacturing SMEs differs when enterprises are evaluated according to the scope of operation ($p < 0.05$), while it is the same when they are evaluated in terms of other demographic characteristics such as period of establishment, manufacturing field, and size of enterprise ($p > 0.05$).
- Managers of manufacturing SMEs in Yemen adopt similar DMPs when evaluating them based on their qualification and experience ($p > 0.05$), while their practices differ certainly when it is based on their ownership, age, and position ($p < 0.05$).
- Evaluating the performance of manufacturing SMEs in Yemen according to the enterprises' characteristics, only the scope of operation is found to influence in differentiating the performance among the different scopes of operations ($p < 0.05$), while no difference in performance is observed based on the other characteristics; which are, year of establishment, manufacturing field, and the number of employees ($p > 0.05$).
- The performance of manufacturing SMEs in Yemen is not influenced by the experience and qualification ($p > 0.05$), rather significantly influenced by the nature of stake or ownership, position and the age of managers ($p < 0.05$).

Objective 3: To identify the impact of the decision-making practices on the performance of manufacturing SMEs

- It is found that the decision making practices are significantly influencing the performance of manufacturing SMEs ($\beta = 0.637$, Bootstrapped $\beta = 0.638$, and $p < 0.01$), which means that the increase in the adoption of decision making practices results in improved performance among manufacturing SMEs.
- It is observed that organizational learning is not significantly influencing the performance of manufacturing SMEs in Yemen ($\beta = -0.035$, Bootstrapped $\beta = -0.030$, and $p > 0.05$), which means that the increase in organizational learning does not necessarily lead to an improvement in the performance of manufacturing SMEs.
- The performance of manufacturing SMEs is observed not to be significantly influenced by the traditional decision making practices ($\beta = 0.069$, Bootstrapped $\beta = 0.070$, and $p > 0.05$), which means that the current adoption or neglect of the traditional decision making practices is not reflected on the performance of manufacturing SMEs in Yemen.
- Adopting information technology is not found to be an influential factor on the performance of manufacturing SMEs in the context of Yemen ($\beta = 0.103$, Bootstrapped $\beta = 0.108$, and $p > 0.05$), which means that enterprises can not enhance their performance by their current adoption of information technology systems in the decision making process.
- It is found that the entrepreneurial competencies of managers/owners have a significant influence on the performance of manufacturing SMEs ($\beta = 0.164$, Bootstrapped $\beta = 0.164$, and $p > 0.05$) which indicates that the increase in the

entrepreneurial competencies possessed by managers/owners of manufacturing SMEs leads to an improvement in their performance.

- It is observed that the willingness of managers for further education or training in entrepreneurship and management is not an influential factor in the performance of manufacturing enterprises ($\beta = 0.020$, Bootstrapped $\beta = 0.020$, and $p > 0.05$) which means that the change in the willingness of managers towards further training or education in management and entrepreneurship does not necessarily lead to a change in the performance of manufacturing SMEs.
- It is observed that the decision making practices adopted by manufacturing SMEs impact organizational learning in enterprises ($\beta = 0.695$, Bootstrapped $\beta = 0.696$, and $p < 0.01$), this indicates that the increase in the adoption of sound and effective decision making practices leads to an increase in the level of organizational learning in manufacturing SMEs.
- The decision making practices are found as influential factors in the traditional decision making among manufacturing SMEs ($\beta = 0.397$, Bootstrapped $\beta = 0.401$, and $p < 0.01$), which means that adopting more decision making practices leads to more traditional making practices, which is a finding that is against the expected outcome set for the role of the decision making.
- The adoption of information technology systems in the process of decision making is influenced by the decision making practices ($\beta = 0.605$, Bootstrapped $\beta = 0.607$, and $p < 0.01$), which means that an increase in the adoption of decision making practices leads to an increase in the adoption of information technology in the decision making process.

Objective 4: To identify the mediating role of traditional decision-making practices, organizational learning and information technology use in Decision Making in the relationship between decision making practices and the performance of manufacturing SMEs.

- It is observed that organizational learning does not mediate the relationship between decision making practices and the performance of manufacturing SMEs ($\beta = -0.006$, Bootstrapped $\beta = -0.004$, and $p > 0.05$), which means the impact of decision making practices on the performance of manufacturing SMEs is a direct effect only.
- It is noted that decision making practices have no indirect impact on SMEs performance through organizational learning.
- Adopting information technology in decision making, similarly, does not mediate the relationship between decision making practices and the performance of manufacturing SMEs ($\beta = 0.062$, Bootstrapped $\beta = 0.066$, and $p > 0.05$), which means the impact of decision making practices on the performance of manufacturing SMEs is a direct effect only and not indirectly through the adoption of information technology systems in decision making.
- It is noted that decision making practices have no indirect impact on SMEs performance through adopting information technology in decision making.
- The traditional decision making practices, similarly, do not mediate the relationship between decision making practices and the performance of manufacturing SMEs ($\beta = 0.028$, Bootstrapped $\beta = 0.028$, and $p > 0.05$), which means the impact of decision making practices on the performance of manufacturing SMEs is a direct effect only and not indirectly through adopting

traditional decision making practices that result in neglecting the proper, sound, and effective decision making practices.

- It is noted that decision making practices have no indirect impact on SMEs performance through traditional decision making practices.

Objective 5: To explore the moderating role of entrepreneurial competencies and managers' perception towards further education in the relationship between decision making practices and the performance of Manufacturing SMEs.

- It is found that the entrepreneurial competencies do not moderate the relationship between the decision making practices and the performance of manufacturing SMEs ($\beta = 0.038$, Bootstrapped $\beta = 0.040$, and $p > 0.01$), which means that the relationship of decision making practices with manufacturing SMEs performance is not affected by the change in the entrepreneurial competencies among managers/owners running and managing such enterprises.
- It is observed that possessing higher (or lower) entrepreneurial competencies among managers and owners of manufacturing SMEs is found independent from the effect of decision making particles on SMEs performance.
- The willingness of managers/owners for further education or training in entrepreneurship and management does not moderate the relationship between the decision making practices and the performance of manufacturing SMEs ($\beta = -0.022$, Bootstrapped $\beta = -0.25$, and $p > 0.05$), which means that the relationship of decision making practices with manufacturing SMEs performance is not affected by the change in the willingness of

managers/owners for further training and education in management and entrepreneurship.

- It is observed that possessing higher (or lower) willingness towards additional training and education in entrepreneurship and management among managers and owners of manufacturing SMEs is found independent from the effect of decision making practices on SMEs performance.

5.2 Suggestions of the study

Based on the findings and discussion realized in this study, a series of suggestions are drawn to realize improvement in the adoption of decision making practices as well as the performance of manufacturing small and medium enterprises.

- Owners and managers of manufacturing SMEs should pay more attention to the role of early investigating and diagnosing the problems that require solutions, which can lead to better and more effective decisions as well as avoiding any consequences that may occur due to making late decisions.
- Manufacturing SMEs in Yemen need to widen the use and adoption of the practices of developing alternative solutions for the problems diagnosed in the enterprises, as this practice leads to facilitating the possibility of choosing the most appropriate solution among the proposed alternatives.
- Managers/owners of manufacturing SMEs need to pay more attention to the practice of analyzing and evaluating the available and suggested alternatives as this practice leads to identifying the merits and demerits of each alternative

which in the end leads to easing the identification of which alternative can be selected among others based on its characteristics.

- When choosing the solution to a specific problem, managers/owners need to consider the characteristics of such alternatives, which include, the consequences, effectiveness and the cost of implementation, after comparing them with the other available alternatives.
- For better implementation of the decision made, managers/owners of manufacturing SMEs need to consider adopting detailed procedures and strategies to ensure the effectiveness and efficiency of the decision implementation to realize the goals set behind implementing such decisions.
- Monitoring the implementation of a decision should be widely adopted and practiced by manufacturing SMEs where criteria should be applied in such practice, collecting feedback and ensuring that the implementation of the decision was carried out as planned so as to consider the diagnosed problem as solved by achieving the effectiveness and efficiency of the implemented decision.
- Comprehensive and regular evaluation of the current performance should be widely adopted among manufacturing SMEs in Yemen, where such evaluation can lead to continuous follow-up with the improvement and enhancement required in the general performance of enterprises.
- Similarly, manufacturing SMEs should widely adopt the practice of regularly evaluating the managerial performance of the departments of the enterprises, which indicates the need to follow specific procedures and evaluation forms to ensure an effective evaluation of the managerial performance and hence improvement in the general performance of enterprises.

- Further, the performance of managers should be continuously and regularly evaluated among manufacturing SMEs which ensures their remarkable contribution to the development of the decision making and hence the development of the general performance of the enterprises.
- Internal resources of manufacturing SMEs should be regularly evaluated to ensure the ability of the enterprises to meet their internal requirement and commitment and hence be able to meet the need of customers and the market as well.
- Strategic analysis of the strengths, weaknesses, opportunities and threats should be adopted and practiced by manufacturing SMEs which ensures the ability of enterprises to function sustainably, in the long run, to realize their goals and achieve competitive advantage as well as contribute to the economic development in the country.
- Further measures should be paid attention to among manufacturing enterprises to ensure the development of their performance, such as, the satisfaction of their customers, increasing sales, attracting new customers, and increasing the number of full-time employees in the enterprises.
- Manufacturing SMEs should set criteria and strategies that aim to develop their contribution and performance during the next five years and further evaluate the criteria and strategies implemented during the last five years to ensure that the business activities are heading towards development in the long and short run.
- Further attention must be paid to developing the internal performance of manufacturing enterprises which may include adopting new techniques and methods in the business operations, adopting new technology, reducing

defective products etc. to ensure that the enterprises are able to expand in the future due to developed and prosperous internal performance.

- Manufacturing SMEs should make efforts and dedicate resources for the learning growth among their employees to maximize the chances of performance development due to continuous learning growth among human resources in the enterprise.
- Extra efforts and resources are required to be dedicated to the development of organizational learning among manufacturing enterprises which may lead to enhancing the chances of growth, innovation, and performance of manufacturing enterprises through employing innovative methods to enhance the performance.
- Managers/owners of manufacturing enterprises should limit their adoption and use of traditional decision making practices, which includes avoiding consulting the team member about the decision to be made and attempting to avoid making decisions when there is a chance they can be avoided, as such practices can lead to disadvantages observed in the performance of manufacturing enterprises.
- Managers and owners of small and medium enterprises in Yemen should work towards employing and adopting information technology systems in the process of decision making, which eases and facilitates the possibility of reaching effective decisions, which in turn, leads to enhancing the performance of manufacturing enterprises.
- It is suggested that managers and owners of small and medium enterprises try to develop their entrepreneurial skills and competencies, which makes them more innovative in running their businesses in a way to realize their goals and achieve competitive advantages.

- Similarly, owners/managers in manufacturing SMEs should seek further training and education related to entrepreneurship and management, which makes them better performers managerially in order to push the business performance in their enterprises towards further expansion and development.
- Since the least number of enterprises were established during 2011 – 2020, attention should be paid to the opportunities that facilitate the establishment of young start-ups. Such attention can be reflected in supporting the microfinance activities that enable individuals to have access to the required funds to establish their start-ups.
- Manufacturing enterprises should add to their agenda to function in the international market by seeking export of their products and services, where their chances of internationalization increase and hence improving their economic contribution to the inclusive development of the economy.
- Focusing on a trending and fast developing field could boost the performance and growth of manufacturing enterprises being a major component in the economy which contributes to the development of the country's GDP and hence economic development.
- Empowering women with respect to establishing, running and managing small and medium enterprises which can take place through hiring talented female managers, supporting women entrepreneurs in establishing their businesses and empowering females to engage and undertake entrepreneurial activities.
- Since the majority of entrepreneurs are found in the age group of 41 – 50 years, focusing the support and sponsorship is suggested towards young entrepreneurs,

which increases their dedication and passion towards founding or establishing their businesses.

- Sponsoring awareness programs with respect to the need for taking educational courses and training programs about management and entrepreneurship increases the managerial and entrepreneurial competencies among managers/owners of manufacturing small and medium enterprises in Yemen.
- Assigning the position of management and decision making positions in manufacturing enterprises should be done to managers who have sufficient experience to ensure the efficiency of the decision making process, which may lead to a fruitful outcome in the enterprises.
- Owning a part of the enterprises should not be the reason for managing the enterprises, as experience and effective management is the main goal, where owning a part of the enterprises is secondary. Hence, individuals should manage the enterprises because they are qualified rather than because they own part of the enterprise.
- It is suggested that decision making practices should be further employed to a large extent among managers/owners of small and medium enterprises to enhance the managerial as well as the general performance of manufacturing SMEs in Yemen.
- It is suggested for managers and owners of small and medium manufacturing enterprises to dedicate efforts towards developing the role of organizational learning by encouraging the participation of employees in proposing innovative methods and business ideas into the strategies of the enterprises.

- It is required to encourage the activities of internationalization among manufacturing SMEs that function in the national scope of operations so as to have better chances to participate in international activities.
- It is suggested that orientation programs should be dedicated to the importance of experience in the process of running and managing business activities among manufacturing enterprises.
- It is suggested that employees should participate in decision making process by presenting their suggestions and innovative solution to the problems encountered among manufacturing SMEs.
- Imparting organizational learning among employees can contribute to better participation in decision making in manufacturing SMEs.
- Manufacturing SMEs should build a learning culture to foster knowledge among employees and managers, which can promote the decision making process and its impact on SMEs performance.
- Managers and owners should adopt training programs to impart knowledge and promote organizational learning among employees in the enterprise.
- Avoiding traditional practices in making decisions promotes the opportunities to adhere to sound and effective decision making practices, which contributes to enhancing SMEs performance.
- Supporting the adoption of information technology in the decision making practices leads to facilitating making data-driven decisions which promotes the chances of growth and expansion of operation among SMEs.
- It is suggested that government should support and facilitate the adoption of information technology in the corporate sector, more particularly in small firms

where their chances of achieving competitive advantage can be achieved by utilizing information technology.

- Involving the decision making with managers who possess higher entrepreneurial competencies can boost the effectiveness and contribution of decision making among manufacturing SMEs.
- Engaging managers and owners in workshops that enrich their knowledge with respect to entrepreneurial and managerial development would contribute to improving their ability to put their knowledge into practice while making decision to promote the survival and performance of SMEs.

5.3 Conclusion

Small and medium enterprises still need to pay further heed to adopting the decision making practices which facilitates their opportunities of making sound and effective decisions. The low level of adherence to adopting decision making practices is not found to be contributory towards enhancing the performance of manufacturing enterprises. More adherence to decision making practices leads to achieving significant advantages with respect to the performance of manufacturing SMEs; since the study outcome evidenced that the decision making practices, when largely adopted, lead to achieving around 60% of the improvement in the performance growth. The importance of adherence to such practices arises from the fact that small and medium enterprises are functioning in an unstable and unpredictable business environment. The United Nations reported that around 27% of small and medium enterprises in Yemen ended up closing their business due to relocating their business on account of the ongoing war in the country. Hence, making sound and effective decisions must rely on specific processes rather than traditional practices.

Experience alone, regardless of being an important factor, is not sufficient enough to make effective decisions without jeopardizing the business performance of an organization. Therefore, information technology, scientific process, and data are used to facilitate the process of making effective decisions that positively and efficiently impact the performance of firms and companies, be it developed, developed, or any underdeveloped countries like Yemen.

Small and medium enterprises in underdeveloped economies can achieve competitive advantages and development of their performance when they adhere to

sound and effective management practices in general and decision making practices in particular. Such practices allow them to efficiently manage their resources to realize their objective with respect to improving their business performance which is reflected in the creation of jobs and generation of income, realizing inclusive development and economic welfare in the society.

Traditional decisions making is still adopted among manufacturing SMEs in Yemen, where the decision making process sometimes is not followed as practices such as developing alternative solutions and evaluating available alternatives are not widely adopted and are not significantly contributing to the development of the performance of the enterprises.

Organizational learning is not widely oriented in manufacturing; even if it is oriented to a moderate level, it is not contributing to the enhancement of the performance of the enterprises. Organizational learning is supposed to play a significant role in improving the performance of firms and companies in developing economies.

The extent of adopting information technology in the process of decision making among manufacturing SMEs is very limited. Dedicating further efforts towards adopting information technology systems in the decision making process can facilitate the possibility of making more and more effective decisions when they are based on a systematic process, data as well as experience of the decision makers.

Entrepreneurial competencies are commonly possessed by managers of manufacturing SMEs in Yemen; however, managers are required to utilize such competencies in favour of running their business activities to achieve expansion, growth and development in the manufacturing sector. Finally, Managers and owners of manufacturing SMEs are supposed to follow and seek further training regarding

trends and developments in the managerial and entrepreneurial fields so that they can utilize such knowledge and capabilities in running their enterprises successfully and focus towards achieving competitive advantages and realizing their objectives; and hence, achieving economic development and resurgence in the manufacturing sector becomes very essential and more inhabitable.

5.4 Scope for further research

Further research can focus on the following aspects:

- 1) Qualitative investigation of decision making and its role and challenges with respect to business performance in Yemen.
- 2) Investigating industry-wise decision making and exploring its characteristics that affect its impact on business performance.
- 3) Conducting a comparative study investigating decision making among female managers in underdeveloped economies where the survival of business is crucially relevant to the decision making adopted by them.
- 4) Investigating decision making in the service sector and comparing the outcome with the manufacturing sector.

5.5 Study Limitations

The limitations of this study include the following:

- 1) The study followed a non-probability sampling. Therefore, generalizing the result is challenging.
- 2) The study was limited to two cities in Yemen that host more than 40% of manufacturing SMEs, hence, investigating a wider range of the population of manufacturing SMEs may yield different results.
- 3) As the study is considered as exploratory study, followed quantitative methods, hence adopting the mixed methodology of research where qualitative research would support the results of the quantitative approach followed in this study.