

**Faculty of Business Studies
Department of Marketing**

**Agricultural Marketing System for Sustainable Dairy Industry
with Triple Bottom Line Framework in Bangladesh**



**A Thesis Submitted to the University of Dhaka for the Degree of
Doctor of Philosophy in Marketing**

Mohammad Sirajul Islam

University of Dhaka

May, 2017

***Dedicated
To
My parents & Sons***

Declaration

This is to assert that according to the best of my knowledge and belief, this thesis contains no materials that have formerly been published by any other persons or organizations.

This is also declared that this thesis contains no materials that have been accepted for the award of any other degree or diploma in any university.

Mohammad Sirajul Islam

Ph.D Research Fellow

Registration No: 108

Session: 2012-1013

Department of Marketing

University of Dhaka

Bangladesh

Certificate

It's a great pleasure to certify that the thesis entitled **Agricultural Marketing System for Sustainable Dairy Industry with Triple Bottom Line Framework in Bangladesh** accomplished by Mohammad Sirajul Islam who is a research fellow of the department of Marketing, University of Dhaka. The study was done under my supervision and guidance. All information provided in the thesis is accurate and collected from authentic sources. The final draft of the thesis is scrutinized by me before its submission for the degree of Doctor of Philosophy.

I recommend the thesis for evaluation.

Prof. Dr. Belayet Hossain
Department of Marketing
University of Dhaka
Dhaka- 1000

Acknowledgement

I would like to take the opportunity to express my sincere and deepest gratitude to my supervisor, Professor Dr. Belayet Hossain, for his intellectual encouragement, guidance, and support from the beginning to the final stage which enabled me to develop an understanding of doing research. His continuous supervision, patience, and invaluable direction in carrying out the process in writing, reading and rereading my thesis could not be expressed in words. In fact, I feel blessed to get the opportunity of doing this research under his supervision. I believe that his patience at the time of supervision is rare in the academic world. I wish his long life.

I also like to convey my earnest gratitude to my honorable teachers, particularly Dr. Md Maruf Hossain Chowdhury for his inspiration and support at the time of research and his voluntary contributions could never be forgotten in my life. This is also in appreciation to my esteem colleagues and friends for their unconditional support and patience. Without their help and encouragement, this would not have been finished successfully.

I am particularly indebted to all participants including farmers of field study, particularly marginal dairy farmers, the Cooperative society of Sirajgong and Dairy Farm Owners' Association in Chittagong authority as well as liquid milk processing companies and all of the 400 respondents for their willingness to share their time, knowledge and experience. Their kind-heartedness and honesty are highly respected.

My sincere thanks also go to the FAO representative office Dhaka, specifically Begum Nurun Nahar and Nasim Ali Mondal for their voluntary support to make a link as well as arrange a seminar on my research topic involving different stakeholders including academicians, government officials (DLS Authority), commercial customers and farmers who provided valuable information. This support was crucial for the development of this research.

My obligation is also to the Milk Vita authority and officials, particularly to Mr. Md. Zahir Uddin Babar, former Managing Director and Mr. Mutfizur Rahman, Deputy General Manager for their unconditional support mostly for their providing adequate

information and long term accommodation at 'Milk Vita Guest House' during the survey period. Also, I thank the department of livestock, particularly Dr. Pradip Kumar Das and Dr. Rabbani for their heartiest support by providing data. Those supports make this dissertation easy and comprehensive.

My special thanks go to all the staffs and officials of 'University of Dhaka' particularly the faculty of business administration, department of marketing, and higher study section and account section for their full-time cooperation that made it easy to complete this dissertation.

I am particularly grateful to my parents, my parents -in law and my brother and brothers- in -law as well as sisters and sister-in-law for being so supportive and all relatives who endured this long process with me, always offering support and love. Today I deeply remember in my prayer for the departed soul of my 'Grand Mother', whose prayer and love was my precious asset and inspiration and this effort is a result of her prayer for my welfare. I lost her during my study period and it is a great lost in my life.

Finally, heartfelt thank goes to my loving and adoring wife for her enormous cooperation and inspiration during my research. I also thank my beautiful little children and my ward, Mohammad Tabeenul Islam (Shabib) and Mohammad Taheemul Islam (Saad), who have grown up encircled with study materials and computer. Thanks again for their unconditional love and patience. I am obliged to all of them for any my achievements.

In conclusion, I apologize to the reader, reviewer and others who worked with me for long and for any unintentional mistakes as well as inconveniences.

Abstract

Sustainable development of dairy industry is an international focal point of institutions like the United Nations (UN) and its member countries. Today, the dairy industry is facing a list of problems due to different types of uncertainties and interruptions all over the world. The dairy farms developed alternative approaches to enhance the ability to manage uncertain situations and fails to satisfy the stakeholders need in a sustainable manner. In agriculture -based industry, this is very important to develop a suitable marketing system to improve performances, establish a suitable governance approach and reduce the probable misfortunes that have disrupted the road of the sustainable performance (SUP) of the dairy industry in the world. Similarly, the dairy industry in Bangladesh requires exploring alternative resources as well as immediate actions for reducing the uncertainties to overcome adversities. Inability to establish an appropriate agricultural marketing system immediately may be the cause of financial loss, the social and environmental imbalance that have made the task of sustainable performance (SUP) of the dairy industry a difficult proposition. There are some limitations of the present literature regarding the agricultural marketing system, namely is uncertainty, sustainability and lack of an empirically tested model of agricultural marketing systems to be adopted for the long-term sustainable performance (SUP) of the dairy industry in Bangladesh. These research gaps highly encouraged me to conduct this research work to develop a model of agricultural marketing channel relationship (AMCR) for sustainable performance (SUP) applicable in the dairy industry in Bangladesh after extensive review of earlier studies in this area.

Reviewing the earlier research works the present research model was evaluated in the light of two theories, namely social exchange theory (SET) and stakeholder theory (ST). Moreover, the key constructs and hypothesized relationships are justified, based on those theories while, constructs and variables of the proposed research are justified and validated by an exhaustive field survey.

This research has applied a ‘mixed method’ which has incorporated both qualitative and quantitative approach. In the qualitative research approach, this study used semi-structured interview procedure, in which the field study data were collected from 19

marketing channel decision makers, particularly farmers (dairy farms), milk processing companies (formal buyers) in Bangladesh. Data collected from field survey (qualitative data) have been analyzed using the content analysis technique. According to the outcome of the content analysis, a field study model was developed. Then, based on the comparison of the conceptual model and the field study model, a comprehensive and final research model was developed. In addition, the field study explored a new dimension namely, political uncertainty in the context of the dairy industry in Bangladesh. Finally, qualitative research approach has been combined with the view of the mixed method.

In addition, in quantitative phase, total 320 usable responses were attained from the dairy farmers in Bangladesh. Samples were selected through using the random sampling technique. Those collected data were analysed using partial least squares (PLS) -based structural equation modelling (SEM) technique.

Furthermore, the findings of the quantitative analysis explored that the key constructs agricultural marketing channel relationship (AMCR) reflected by several dimensions like trust, commitment, satisfaction, power, cooperation, and communication. In addition, the construct sustainability governance (SUG) is reflected through several dimensions like business sustainability, integration, governance power and financial control. As well as, environmental uncertainty (EU) was determined by several dimensions like demand uncertainty, supply uncertainty, competitor uncertainty, climate uncertainty and political uncertainty. The outcome of the study was also critically examined through measuring the agricultural marketing relationship (AMCR) with sustainability governance (SUG) and sustainable performance (SUP) for ensuring long-term sustainable dairy industry, i.e. economic sustainability, social sustainability, and environmental sustainability in the context of Bangladesh.

This study discovered that sustainability governance has been partially mediating the relationship between the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). This finding also substantiated that sustainability governance (SUG) is another essential construct for supporting the way of sustainable performance (SUP) in the context of dairy industry in Bangladesh. In addition to this,

this research investigated that insignificant role of moderating construct the environmental uncertainty (EU) on the sustainable performance (SUP) in the context of the dairy industry in Bangladesh. These results have supported by the earlier studies and replicated the role of the agricultural marketing channel relationship (AMCR) and sustainability governance (SUP) for reducing uncertainties.

Therefore, the present research has both theoretical and managerial implications. The findings brought out by this research have a distinctive contribution to the literature. Hence, this study supplements the existing branch of knowledge of agricultural marketing systems, particularly agricultural marketing channel relationship (AMCR), sustainability governance (SUG), and sustainable performance (SUP).q

The constructs, dimensions and items dealt with in this research may help directly the stakeholders and national as well as international decision makers to identify and measure the agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) and to overcome the difficulties associated with unforeseen and interruptive factors. It may also assist the managers in ensuring the economic sustainability, social sustainability and environmental sustainability by developing a new approach to agricultural marketing systems like agricultural relationship marketing and sustainability governance. Finally, this study makes the task of the managers simple and practicable in building agricultural marketing channel relationship and sustainability governance and sustainable dairy industry in Bangladesh. Besides, the implications of this study may be useful to the other countries and other industries as well. This research also recommended some specific guidelines to the future researchers on the basis of the major difficulties faced by them.

CONTENTS

Dedication	i
Declaration	ii
Certificate.....	iii
Acknowledgement.....	iv
Abstract.....	vii
Contents	ix
List of abbreviations	xviii
Chapter-1: Introduction	1
1.1 Overview	1
1.2 Problem Statement of Research.....	2
1.3 Research Questions.....	8
1.4 Research Objectives.....	8
1.5 Significance of Research.....	9
1.5.1 Theoretical Importance	9
1.5.2 Practical importance	10
1.6 Organization of Research.....	11
1.7 Conclusion.....	14
Chapter-2: Literature Review	15
2.1 Introduction	15
2.2 Agricultural Marketing System.....	15
2.3 Agricultural Marketing Channel Relationship (AMCR)	17
2.3.1 Significance of the agricultural marketing channel relationship (AMCR) for Sustainable performance (SUP)	19
2.4 Agricultural Marketing Channel for the dairy industry in Bangladesh	22
2.5 Measurement Constructs (Dimensions) of Agricultural Marketing channel relationship (AMCR)	25
2.5.1 Trust.....	26
2.5.2 Commitment.....	30
2.5.3 Satisfaction.....	33
2.5.4 Power	36

2.5.5	Cooperation	39
2.5.6	Communication	41
2.6	Sustainability Governance	44
2.7	Measurement Constructs (Dimensions) of Sustainability Governance (SUG).....	47
2.7.1	Business Sustainability (BUS)	47
2.7.2	Integration (INTN)	50
2.7.3	Governance power (GPOW)	53
2.7.4	Financial Control (FC).....	56
2.8	Mediating Effect of Sustainability Governance (SUG) between Agricultural Marketing channel relationship (AMCR) and Sustainable performance (SUP).....	57
2.9	Environmental Uncertainty	59
2.10	Measurement Constructs (Dimensions) of Environmental Uncertainty (EU)	61
2.10.1	Demand Uncertainty (DU).....	61
2.10.2	Supply Uncertainty (SU).....	62
2.10.3	Competitor Uncertainty (CU).....	62
2.10.4	Government Policy Uncertainty (GU).....	63
2.10.5	Climate Uncertainty (CLU).....	64
2.11	Moderating Effect of Environmental Uncertainty (EU).....	66
2.12	Sustainability	68
2.12.1	Sustainable Dairy Industry	69
2.12.2	Triple Bottom Line (TBL) Framework Model of Sustainability	71
2.13	Measurement constructs (Dimensions) of Sustainable Performance (SUP).....	73
2.13.1	Economic Sustainability (ECS).....	74
2.13.2	Social Sustainability (SOS).....	75
2.13.3	Environmental Sustainability (ENS)	76
2.14	Significance of the ESE sustainability on the Sustainable Performance (SUP)	77
2.15	Existing Research Gap	78
2.16	Initial Research Model.....	81
2.17	Theoretical Evaluation of the Higher Order Constructs and Their Relationship	84
2.18	Conclusion.....	88
Chapter-3: Research Methodology		89

3.1	Introduction	89
3.2	Research Method	89
3.3	Research Process	90
	Source: Author compiled from the literature	91
3.4	Qualitative Field Study	91
3.4.1	Sample Selection	92
3.4.2	Data Collection	92
3.4.3	Data Analysis	92
3.5	Quantitative Study	93
3.5.1	Developing hypothesis and Questionnaire.....	93
3.5.2	Pre-testing the questionnaire	93
3.5.3	Pilot study.....	94
3.5.4	Study of population and sampling technique	94
3.5.5	Sample size determination	96
3.5.6	Quantitative data analysis by SEM.....	96
3.5.7	Partial least square (PLS) process	99
3.6	Conclusion.....	110
	Chapter- 4: Qualitative Analysis and Comprehensive Research Model.....	112
4.1	Introduction	112
4.2	Overview of the Field Study	112
4.2.1	Interview Questionnaire Development	112
4.2.2	Sample Selection and Data Collection.....	115
4.2.3	Data Analysis	115
4.2.4	Participants' Description.....	117
4.3	Finding of the Field Study (1st Stage: Inductive Analysis)	118
4.3.1	Findings of Measurement Construct.....	118
4.3.2	Finding of Mediating Construct	121
4.3.3	Findings on Moderating Factors.....	123
4.3.4	Finding of Sustainable Performance (SUP) with Triple Bottom Line Frameworks Components.....	125
4.3.5	Finding the other Relevant Factors.....	126
4.4	Field Study Model	127

4.5	Comparison between Findings of the Field Study and Initial Model (2nd Stage: Deductive Analysis)	128
4.5.1	Findings of Political Uncertainty.....	129
4.6	Justification of the Findings in the Literature Review.....	130
4.7	Comprehensive Research Model.....	132
4.8	Conclusion.....	135
Chapter-5: Hypothesis and Questionnaire Development		137
5.1	Introduction	137
5.2	Hypothesis Development	137
5.2.1	Hypothesis regarding the Agricultural marketing channel relationship (AMCR) to Sustainable Performance (SUP).....	137
5.2.2	Hypothesis Related Agricultural marketing channel relationship (AMCR) to Sustainability Governance (SUG).....	139
5.2.3	Hypothesis regarding the sustainability governance (SUG) and Sustainable performance (SUP).....	140
5.2.4	Mediation role of (SUG) between (AMCR) and (SUP)	142
5.2.5	Moderated role of environmental uncertainty (EU)	144
5.3	Summary of Hypothesis Development	145
5.4	Questionnaire Development	147
5.4.1	Overview of the Questionnaire.....	147
5.4.2	Measurement Instrument.....	148
5.4.3	Measurement Scale.....	159
5.4.4	Pre-Testing Procedure.....	160
5.5	Conclusion.....	161
Chapter-6: Survey and Quantitative Data Analysis		162
6.1	Introduction	162
6.2	Pilot Study.....	162
6.3	Descriptive Analysis of Survey	163
6.3.1	Response Rate	164
6.3.2	Data Examination	165
6.3.3	Sampling Error and Non- response Bias.....	167
6.3.4	Common Method Variance	170

6.3.5	Demographic Information of the Sample	170
6.4	PLS- Based Structural Equation Modelling (SEM).....	175
6.4.1	Assessing Measurement Model.....	176
6.4.2	Assessing Structural Model.....	203
6.4.3	Mediation Analysis.....	205
6.4.4	Moderation Analysis.....	208
6.4.5	Goodness of Fit (GoF).....	213
6.5	Summary of the Hypothesis and Evaluation	214
6.6	Conclusion.....	215
Chapter-7: Discussion and Implication.....		217
7.1	Introduction	217
7.2	Findings Based on Hypotheses.....	217
7.2.1	Hypothesis-1 (Ha1): Agricultural Marketing Channel Relationship (AMCR) has a Positive Relationship with Sustainable Performance (SUP) of the Dairy industry in Bangladesh.....	217
7.2.2	Hypothesis-2 (Ha2): Agricultural Marketing channel relationship (AMCR) has a Positive Relationship with Sustainability Governance (SUG) of the Dairy industry in Bangladesh	218
7.2.3	Hypothesis-3 (Ha3): Sustainability Governance (SUG) has a Positive Relationship with Sustainable Performance (SUP) of the Dairy industry in Bangladesh.....	220
7.2.4	Hypothesis-4 (Ha4): Sustainability Governance (SUG) Mediates the Relationship between Agricultural Marketing channel relationship (AMCR) and Sustainable Performance (SUP) of the Dairy industry in Bangladesh.....	222
7.2.5	Moderation Effect.....	223
7.2.6	Hypothesis-5 (Ha5): Environmental Uncertainty (EU) has negatively moderated the Relationship between Agricultural Marketing channel relationship (AMCR) and Sustainable performance (SUP) of the Dairy industry in Bangladesh.....	223
7.2.7	Hypothesis-6 (Ha6): Environmental Uncertainty (EU) has Negatively Moderated the Relationship between Sustainability Governance (SUG)	

and Sustainable Performance (SUP) of the Dairy industry in Bangladesh.....	225
7.3 Findings Based on Research Objective.....	227
7.3.1 Research objective-1: To explore and Measure the Dimension of the Agricultural Marketing channel relationship (AMCR) and Sustainability Governance (SUG).....	228
7.3.2 Research Objective-2: To Explore and Measure the Dimensions of the Environmental Uncertainty (EU).....	233
7.4 Conclusion.....	238
Chapter-8: Conclusion and Future Research Direction.....	240
8.1 Introduction	240
8.2 Summary of the Study	240
8.3 Contribution of the Research.....	243
8.3.1 Methodological Contribution	243
8.3.2 Theoretical Contribution.....	244
8.3.3 Practical Contribution.....	247
8.3.4 Implication for the Managers and Policy Makers	251
8.4 Research Limitations	259
8.5 Future Research Directions	261
References	263
Appendices	309
Appendix A:	309
Appendix B.....	309

List of Tables

Table 2.1 Sustainability Measurement Indicators	77
Table 3.1 Sampling Procedure Present Study	95
Table 3.2 Systematic Process of the Structural Equation Modelling (SEM) Analysis	99
Table 3.3 A Framework for Assessing Reflective and Formative Model.....	102
Table 3.4 Decision Guidelines for Assessment of the Formative Construct Model.....	106
Table 4.1 Issues and Related Questions in the Field Study	113
Table 4.2 Participant Description.....	117
Table 4.3 Links among AMCR, SUP and SUG	120
Table 4.4 Dimensions of Agricultural Marketing channel relationship (AMCR).....	121
Table 4.5 Relationship between (SUG) and (SUP)	122
Table 4.6 Dimensions of Sustainability Governance (SUG)	122
Table 4.7 Links between Environmental Uncertainty (EU) and Sustainable Performance	124
Table 4.8 Dimensions of Environmental Uncertainty (EU).....	125
Table 4.9 Dimensions of Sustainable Performance (SUP) with TBL	126
Table 4.10 Findings Related to Political Uncertainty.....	129
Table 4.11 Justification of the Findings of the Field Study with Literature	131
Table 5.1 Summary of Developed Hypotheses and Statement	146
Table 5.2 Represents the Items and the Relevant Reference	148
Table 5.3 Measurement Items Related to Agricultural Marketing Channel Relations	149
Table 5.4 Measurement Items Related to Sustainability Governance	152
Table 5.5 Measurement Items Related to Moderating Construct Environmental Uncertainty	154
Table 5.6 Measurement Items Related to Economic Sustainability (ECS)	156
Table 5.7 Measurement Items Related to Environmental Sustainability (ENS)	157
Table 5.8 Measurement Items Related to Social Sustainability (SOS)	159
Table 6.1 Survey Response Rate.....	165
Table 6.2 Data Examination	166
Table 6.3 Kolmogrov–Smirnov Test of Normality	167
Table 6.4 Mann–Whitney Test Result	169
Table 6.5 Survey Respondents by Age of Farm’s Business	171
Table 6.6 Survey Respondents by the Size Farm’s (No of Cow).....	171
Table 6.7 Survey Respondents by the No of Employee	172
Table 6.8 Survey Respondents by the Nature of Employment	173
Table 6.9 Survey Respondents by the Types of the Buyer	173

Table 6.10 Survey Respondents by the Ownership of Farm's	174
Table 6.11 Survey on the Designation of Respondent's	174
Table 6.12 Survey on Respondents by the Payment of Tax	175
Table 6.13 Step by Step Assessment of the Model	176
Table 6.14 Assessment of Reliability, CR and AVE for First- order Constructs	180
Table 6.15 Inter- construct correlation (First order constructs)	183
Table 6.16 Cross Loading (Generated by SmartPLS)	184
Table 6.17 Assessment reliability, CR and AVE with Items Loading (Grater than equal 0.60).....	188
Table 6.18 Inter- construct Correlation of First- order Construct (Second-time run model)	190
Table 6.19 Cross Loading Generated by SmartPLS (Second-time run model)	191
Table 6.20 Assessment of Reliability, CR and AVE for Higher-order Construct: AMCR	194
Table 6.21 Assessment of Reliability, CR and AVE for Higher- order Construct: SUG	196
Table 6.22 Assessment of Reliability, CR and AVE for Higher- order Construct: SUP	197
Table 6.23 First-order Formative Construct	199
Table 6.24 Collinearity Test for Formative Construct.....	200
Table 6.25 Measurement of Higher-order Formative Construct: Environmental Uncertainty	201
Table 6.26 Path Coefficient (β) and t-value	204
Table 6.27 Coefficient of Determination (R^2).....	204
Table 6.28 Result of Mediation Analysis	207
Table 6.29 Structural Analysis Result Moderating Effect	211
Table 6.30 Evaluation of the Research Hypotheses for the Moderating Construct.....	213
Table 6.31 AVE and R-square (R^2) values of Endogenous Construct	214
Table 6.32 Summary of the Hypotheses	215

List of Figures

Figure 2.1 Traditional (Informal) and Cooperative (Formal) Marketing Channel of Liquid Milk.	23
Figure 2.2 Marketing Channel of Liquid Milk in Bangladesh	24
Figure 2.3 Sustainability Governance Framework.....	45
Figure 2.4 Sustainability and Triple Bottom Line Model.....	71
Figure 2.5 Initial Research Model.....	83
Figure 2.6 Equation of Social Exchange Theory	86
Figure 2.7 Contrasting Interest of Stakeholder	87
Figure 3.1 Research process	91
Figure 3.2 Reflective Measurement Model and Formative Measurement Model.....	101
Figure 3.3 Four Types of Hierarchical Latent Variable Model.....	107
Figure 4.1 Process and tools of the qualitative field study	116
Figure 4.2 Field Study Model of the Research.....	128
Figure 4.3 Comprehensive Research Model	135
Figure 6.1 Box plot analysis	167
Figure 6.2 Complete Research Model	179
Figure 6.3 Reflective measurement model for AMCR.....	193
Figure 6.4 Reflective Measurement Model for SUG.....	195
Figure 6.5 Reflective Measurement Model for SUP	197
Figure 6.6 Formative Measurement Model for EU First-order Construct	198
Figure 6.7 Formative Measurement Model for EU Second-order constructs	202
Figure 6.8 Summary of the Higher-order Construct (both formative and reflective).....	203
Figure 6.9 Mediation Model Requirement.....	205
Figure 6.10 Mediation Effect Analyse.....	207
Figure 6.11 Moderator Model and Interactive Model by PLS based SEM	208
Figure 6.12 Theoretical Models for Moderating Variable	210

List of abbreviations

AC	Affective Commitment
AVE	Average Variance Extracted
B2B	Business to Business
B2C	Business to Customer
CB	Covariance Based
CC	Continuance Commitment
CMB	Common Method Bias
CSR	Corporate Social Responsibility
DLS	Department of Livestock
e.g	Latin <i>exempli gratia</i> and means, literally, "for example."
et al.	Latin <i>et alii</i> , which literally means "and others"
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GRI	Global Reporting Initiative
i.e.	Latin <i>id est</i> , meaning "that is."
IPM	National Integrated Pest Management Policy
LC	Loyalty Commitment
LME	Liquid Milk Equivalent
LVS	Latent Variable Score
MDGs	Millennium Development Goals
NAES	National Agriculture Extension System
NAP	National Agriculture Policy
NC	Normative Commitment
NGOs	Non-governmental Organizations
OECD	The Organisation for Economic Co-operation and Development
PLS	Partial Least Squares
ROI	Return on Investment
SDGs	Sustainable Development Goals
SEM	Structural Equation Modelling

SET	Social Exchange Theory
SPSS	Statistical Package for the Social Sciences
ST	Stakeholder Theory
TBL	Triple Bottom Line
TDM	Total Design Method
UN	United Nation
UNMDG	United Nations Millennium Development Goals
UTZ	Universal Trade Zone
VIF	Variance Inflation Factor
WCED	World Commission on Environment and Development
WHO	World Health Organization

Chapter-1: Introduction

1.1 Overview

Sustainable development was a concept, but through consecutive modifications and maturity today it has become a political commitment under the flag of the United Nation (UN) such as sustainable development goals (SDGs). The sustainable development is a holistic issue and macro perspective of a society or an industry which is highly dependents on the sustainable performance (SUP) of individual stakeholder's. This is an accepted tact that if every stakeholder of the society or industry performs sustainably later on the society or industry may achieve the sustainable development goals. Moreover, the sustainable development of the dairy industry is urgent to every type of economy like Bangladesh. Hence, the sustainable performance (SUP) of the dairy industry in Bangladesh is very much essential to the communities and stakeholders' for ensuring sustainable development of the society as a whole.

In addition, sustainable performance (SUP) of the dairy industry has been interrupted regularly. There are many sources of the disruptions, which are different from the society and country. But, some interruptions sources have a common nature in all the societies. In the context of Bangladesh, the sustainable performance (SUP) of the dairy industry is hampered and blockaded by the many forms of interruptions and challenges that have been explored by the many earlier studies like Jabbar (2010); Shamsuddoha & Edwards (2000); Rabbani et al. (2004) and Kamal & Islam (2012). Those empirical studies are primarily explored that the dairy industry in Bangladesh has been suffering from the series of interruptions and uncertainties like economic, social, environmental, governance, infrastructure, lack of appropriate marketing system and international competition etc. which are highly responsible for hindering the sustainable performance (SUP) of the dairy industry in Bangladesh.

In addition, the sustainable performance (SUP) with a triple bottom line framework (economic sustainability, social sustainability and environmental sustainability) is an outcome of an appropriate marketing system with new paradigm marketing which is 'Relationship Marketing'. Relationship marketing supports for reducing uncertainties and enhancing the organizational performances (Trevelen, 1987; Bozarth et al., 1998;

Russell & Krajewski, 1992; De Toni & Nassimbeni, 1999; Hakansson 1982; Frazier, 1983a). Hence, the primary focus is to examine the sustainable performance of the dairy industry in Bangladesh and agricultural marketing channel relationship (AMCR), particularly relationship marketing for reducing the uncertainties and ensuring the sustainable dairy industry in Bangladesh.

Besides, the multiple uncertainties and limitations on the sustainable development a comprehensive research model is needed to concentrate on agricultural marketing channel relationship (AMCR), sustainability governance (SUG), environmental uncertainty (EU) and sustainable performance (SUP) as well as their interrelationships which have not been explored yet by any other empirical research for the dairy industry in any society particularly in Bangladesh. Therefore, this study addresses the existing gap in the literature and presents an integrated model of the sustainable performance (SUP) and marketing system particularly agricultural marketing channel relationship (AMCR). The proposed model wants to elucidate the sustainable performance (SUP) result of the agricultural marketing channel relationship (AMCR) and sustainability governance (SUG). The measurement constructs of agricultural marketing channel relationship (AMCR), sustainability governance (SUG) and environmental uncertainty (EU) have been found out. The relationship among the key constructs in the proposed research model was not addressed yet by any earlier empirical studies. Hence, the present study attempts to highlight the theoretical and empirical dimensions and link the relationship among the key constructs like agricultural marketing channel relationship (AMCR), sustainability governance (SUG) and environmental uncertainty (EU).

1.2 Problem Statement of Research

Bangladesh is a developing economy, which is based on agriculture and two-third of its employment depends on the agriculture (Uddin et al., 2011). The agricultural sector's contribute to the national economy is substantial in a number of ways like poverty alleviation, employment, food security, foreign exchange earnings, sources of energy, social development, schooling, gender equality and women empowerment etc. Besides these, Bangladesh agriculture is rural based subsistence farming system as well as rural

sector plays an important role because majority of the people (79.9 percent) of this country lives in it (Rabbani et al., 2004) and about 61% of the labor force are engaged in agriculture (BBS, 1994). The empirical studies provide evidence to establish the role and contributions of the agricultural sector in the socio-economic sphere of Bangladesh.

In addition to agriculture, the dairy industry has considered as an important economic growth generator of Bangladesh economy. The dairy industry is steady district in comparison with contributions of the other industries. Besides, the other contributions of the dairy industry are to help achieve the nutrition, alleviation of poverty and environmental goal of the Millennium Development Goals (MDGs), women empowerment, asset creation and social standing, protect the environment (FAO, 2013). Dairy farming generates more stable income and generates more employment per unit value added compared to crops by dairy production, processing and marketing functions (Asadizzaman, 2000; Omore et al., 2002). The statistical report supported that in the Bangladesh livestock sector including the dairy industry contributions substantially in the national economy as in the fiscal year, 2015-2016 livestock contribution to gross domestic product (GDP) is 1.66%; gross domestic product (GDP) is the growth rate of livestock is 3.21%; and the share of livestock in the agricultural gross domestic product (GDP) is 14.21%. In addition, in 2015-2106 direct employment in the livestock sector is 20% and indirect employment is 50%, and fuel supply from livestock and poultry is 25% (Livestock, 2016).

Furthermore, the dairy industry in Bangladesh is growing successively after the national liberation war. Till now this industry is helping the socioeconomic development of the nation. In the fiscal year, 2015-2016 milk production is 72.75 lakh metric tons that are more than 4.38% from the previous fiscal year and 219% increased from the fiscal year in 2006-07. Meanwhile, in the fiscal year, the 2015-2016 total demand for milk is 146.91 lakh metric tons, production of milk 72.75 lakh metric tons and deficiency of milk is 74.16 lakh metric tons (Livestock, 2016). The demand for milk and dairy products has also increased significantly in many Asian countries; not only for population growth, but also for people spending more disposable income on livestock products. Demand for milk in developing countries is increasing fast:

Delgado *et al.* (1999) estimated that milk consumption in the Asia–Pacific region would double to 231 billion liters of liquid milk equivalent (LME) by 2020). The empirical studies substantiated the business prospects and opportunities for commercial producers in the local and international markets.

Despite the aforesaid contributions the development of the dairy industry has been adversely affected by various negative externalities. Many earlier studies, Jabbar (2010) stated that the dairy farming in Bangladesh is affected by various myriads of limitations like limited knowledge and technical skills of small dairy farmers, scarcity of feeds and fodder, poor quality of feeds, frequent occurrence of disease, limited coverage of veterinary services including poor diagnostic facilities, lack of credit support, limited milk collection, processing facilities, low prices at collection points, lack of insurance coverage, absence of market information, lack of appropriate breeds and absence of a regulatory body. Besides, these limitations there is some other studies Shamsuddoha & Edwards (2000) explored that causes of market failures and government regulatory failures in the dairy production and marketing in Bangladesh. That study also addressed that market failure come from many forms of externalities like the insufficient provision of public good, inadequate information (uncertainty) and inefficient marketing. Additionally, Rabbani *et al.* (2004) explored some specific hitches that make it difficult for the development of the dairy industry, such as insufficiency of feed, high price of dairy feed, problems of marketing, lower price of the milk and milk products, lack of pasture land, paucity of livestock loan, scarcity of land, deficiency of labor, excessive diseases, and inadequate veterinary services. In addition, Kamal & Islam (2012) explored that marketing channel members are responsible for price spread of liquid milk in Bangladesh. Like those studies, there are many earlier studies which found the present challenges and obstacles to the development of the dairy industry in Bangladesh.

Furthermore, the problems regarding the development of the dairy industry have been categorized under economical, social, environmental, political and technological, appropriate marketing system, infrastructure, and governance. It has been observed that above-mentioned problems and challenges put a barrier against the sustainable

performance of the dairy industry in Bangladesh. Hence, to mitigate the uncertainties and the other problems many stakeholders including governments have taken myriads of practical decisions and corrective measures after the independence. Those initiatives have changed the contemporary situation marginally and that too for a short period.

In addition, Bangladesh government has formulated many policies with a view to motivating agricultural sustainability over the time, such as in 1999, National Agriculture Policy, (NAP); in 2002, National Integrated Pest Management Policy (IPM); in 2015, New Agriculture Extension Policy incorporating for Department of Agriculture Extension, Department of Fisheries, Department of Livestock and Department of Forestry under one umbrella through “National Agriculture Extension System (NAES)”. But, it has been found that those policies were scarcely implemented at the field stage (Unnayan Shamannay, 2015). It also exposed that earlier initiatives taken by the stakeholders and government were not perfect and appropriate to ensure the sustainable performance of the dairy industry with a triple bottom line (TBL) framework like economic sustainability, social sustainability and environmental sustainability in Bangladesh.

Despite the above organizational and institutional programs for ensuring the sustainable performance of the dairy industry, it has been found that no successful initiative to ensure the governance and reduce the uncertainties of sustainable performance (SUP) of the dairy industry in Bangladesh. According to the earlier studies, some of the measures like governance could influence the financially viable income (Sundaramurthy, 1996) and the effect of farm’s dynamic capability on its performance. Sustainability governance (SUG) increases the monitoring and controlling of business activities, through improving the overall organizational performance. Beside this, Bhagat & Bolton (2008) and Gompers et al. (2003) concluded that monitoring and controlling positively help the protection and organizational encouragement for sharing knowledge with others.

In addition, an alternative approach is relationship marketing applications for better business performance. Many earlier studies used this concept of the relationship marketing for sustainable performance of the manufacturing industries and service

industries. There is evidence that relationship marketing may help to build the sustainable competitive advantage (Morgan & Hunt, 1999; Peteraf, 1993 and Dierickx & Cool, 1989). Successful business relationship assists reduce the environmental uncertainty contribute to the better deployment of resources and higher business performances (Dyer & Singh, 1998). Besides, earlier studies Chen & Paulraj (2004) focused that buyer-supplier relationship helps supplier cost reduction, long term relation, communication, supplier involvement, cross-functional term, etc. Furthermore, the relationship marketing has the potential to improve marketing productivity and create mutual values by increasing marketing effectiveness and/or improving marketing efficiencies (Sheth & Parvatiyar, 1995b). Hence, there are not enough evidence to show the application of governance and relationship marketing for sustainable performance (SUP) of the dairy industry in Bangladesh. Therefore, this study develops a comprehensive and an alternative agricultural marketing approach like agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) for sustainable performance (SUP) to reduce the uncertainties of the dairy industry in Bangladesh.

In addition, the conceptual awareness about the relationship marketing, particularly marketing channel relationship is modified regularly by the professionals and researchers. The theoretical establishment about the agricultural marketing channel relationship (AMCR) is quite in infancy. The importance of the agricultural marketing channel relationship (AMCR) to the sustainable performance (SUP) of the dairy industry is somewhat debatable issues to the stakeholders. Earlier studies did not identify specific measurement dimensions of agricultural marketing channel relationship (AMCR). This research gap in the existing literature is one of the motivations for taking up this study.

Furthermore, the concept of the sustainability governance (SUG) is also a new concept which makes collaboration among public, private and society. But, the managerial concept regarding this issue is largely new and awareness about it is growing slowly. Therefore, the theoretical and empirical role of the sustainability governance (SUG) in the diverse field is at an immature stage. Moreover, the contribution of the

sustainability governance (SUG) of the dairy industry in Bangladesh is a debatable matter and the measurement constructs for sustainability governance (SUG) are not empirically explored as yet. This research gap in the present literature is another reason that motivates the researchers to conduct this study. The relationship among the key constructs is yet another motivation for this research.

Additionally, the dairy industry is highly disrupted by environmental uncertainty (EU). The concept of the environmental uncertainty is recognized and adopted by the professional and researchers also. But, the measurement constructs of environmental uncertainty in the dairy industry in Bangladesh is not similar to other countries which are a matter to be considered by the stakeholders. Thus, it has been found that the poor empirical research support regarding the role of environmental uncertainty (EU) has made it difficult to take care of the moderating effect of environmental uncertainty (EU) in the dairy industry in Bangladesh. This research gap is a further reason which stimulated the researcher to undertake this research.

An investigation into the theoretical issues facing the governmental and others institutions demonstrated the spirit of the social exchange theory (SET) for building the long-term profitable marketing channel relationship. Another hand, stakeholder theory for the sustainable performance and sustainability governance is needed in the context of the dairy industry in Bangladesh. The above discussion suggests that no single theory will be enough for the sustainable performance (SUP) rather an integrated theory like the social exchange theory and stakeholder theory are important to enhance the conceptual knowledge base to substantiate the idea of agricultural marketing channel relationship (AMCR), sustainability governance (SUG) and sustainable performance (SUP) of the dairy industry in Bangladesh.

Thus, it can be concluded that there is a paucity of the theoretical support and empirically valid model for applying in agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). These specific limitations and importance highly encouraged the author's to undertake the present research.

1.3 Research Questions

The purpose of the study is to examine whether the sustainable development dairy industry is possible through improvement of the agricultural marketing system. The following research questions will support the purpose of the study. The research questions are as follows:

RQ1: What are the dimensions of the agricultural marketing channel relationship (AMCR), sustainability governance (SUG) and environmental uncertainty (EU)?

RQ2: How do agricultural marketing channel relationship (AMCR) impact on sustainable performance (SUP) and sustainability governance (SUG)?

RQ3: How much mediation can be done by sustainability governance (SUG)?

RQ4: How much moderation effect can be made by environmental uncertainty (EU)?

1.4 Research Objectives

The study generally investigates the dimensions of agricultural marketing channel relationship; sustainability governance and environmental uncertainty and also examines the structural relationship between agricultural marketing channel relationship (AMCR), sustainability governance (SUG) with sustainable performance (SUP) of the dairy industry in Bangladesh. For streamlining the research questions, the primary objective is to construct a research model of agricultural marketing channel relationship (AMCR) for sustainable performance (SUP) in the context of the dairy industry in Bangladesh.

The secondary objectives of the present research are:

- i. To explore and measure the dimensions of the agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) in the context of the dairy industry in Bangladesh.
- ii. To investigate and measure the dimensions of environmental uncertainty (EU) in the context of the dairy industry in Bangladesh.

- iii. To examine the relationship among the agricultural marketing channel relationship (AMCR), sustainability governance (SUG) and sustainable performance (SUP) in the context of the dairy industry in Bangladesh.
- iv. To discover the mediating affect of sustainability governance (SUG) on the relationship between agricultural marketing channel relationships (AMCR) and sustainable performance (SUP) in the context of the dairy industry in Bangladesh.
- v. To investigate the moderating effect of environmental uncertainty (EU) on the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) as well as the relationship between sustainability governance (SUG) and sustainable performance (SUP) in the context of the dairy industry in Bangladesh.

1.5 Significance of Research

1.5.1 Theoretical Importance

Agricultural marketing systems, particularly agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) have been considered as the partial subject matters of the research from earlier times. But the majority of theoretical research has been paying attention to the dimensions of the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) for empirically valid the dimensions. Hence, this research explores the measurement constructs of agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). Furthermore, there is a lack of research to identify and to test the relationship between agricultural marketing channel relationship (AMCR) and it's measurement constructs that are examined in this study.

Moreover, this is conceptual consistency that an agricultural marketing channel relation (AMCR) is important for sustainable performance (SUP) of the dairy industry. However, no earlier studies have yet been found to examine the relationship between the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). Therefore, the present study empirically examines and validates the relationship between the agricultural marketing channel relationship (AMCR) and sustainable

performance (SUP). Through extensive literature review, it has identified the scarcity of research regarding the subject of the present study. Finally, a comprehensive research model of agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) has been designed in the present research.

In addition, earlier studies did not substantiate any empirical observation regarding the direct mediating effect of sustainability governance (SUG) for sustainable performance (SUP) in the dairy industry in Bangladesh, which are the measurements of the dimension of sustainability governance (SUG). According to the practical justification, particularly in the western practices and partial research's contribution, this study incorporated the sustainability governance (SUG) as a mediating construct in the research model. Thus, the study has identified the impact of environmental uncertainty (EU) on the relationship between the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) and included in the proposed research model as a moderating construct for sustainable the dairy industry in Bangladesh.

Therefore, the formulation of the research model with agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) with a triple bottom line framework is a unique contribution to the sustainable performance (SUP) and agricultural marketing literature in general sustainable development of the dairy industry in Bangladesh. In addition, this study incorporates the information on the 'social exchange theory' and 'stakeholder theory' to evaluate the concept of the sustainable performance (SUP) and agricultural marketing channel relationship (AMCR) in the research model that extend the new dimensions for the application of the stakeholder theory.

1.5.2 Practical importance

The practical importance of this study has been delineated in the following sections. Initially, this study highlights the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh as regards this industry faced different barriers and uncertainties. It has been expected that proposed model will help the dairy farm managers to identify and measure the environmental

uncertainty (EU) and sustainability governance (SUG) as well as marketing channel relationship needed to minimize uncertainties and other problems. In addition, the model will help the dairy farm managers and other stakeholders to explore the measurement constructs, which are highly significant for measuring sustainable performance (SUP) of the industry. Finally, the proposed model will be useful to the managers in focusing on the marketing channel relationship (AMCR) necessary for establishing economic, social and environmental sustainability of the dairy industry in Bangladesh. Generally, this study will help sustain the dairy industry through agricultural marketing system in Bangladesh.

1.6 Organization of Research

This dissertation is presented in eight chapters. The chapters are linked with each other. A synoptic view of the each chapter is given as follows:

Chapter-1: Introduction

Introduction is the first chapter of the thesis. It has delineated the impression of the research; including the problem statement of the study that justifies the significance of the research, the dilemma at the existing research literature. The purpose of the chapter is to indicate the focus of the study that leads to the research questions and objectives. Besides, this chapter has highlighted the significance of the research with theoretical and practical implications.

Chapter-2: Literature Review

This chapter concentrates on an extensive literature review to explore the research gap, concepts and definitions such as constructs and dimensions definitions as well as developing an initial research model. This chapter focused on the existing gap in the literature that motivates author's to determine the subject matter of the present study. Besides, it has concentrated the higher-order constructs such as agricultural marketing channel relationship (AMCR), sustainable performance (SUP), sustainability governance (SUG) and environmental uncertainty (EU). In addition, this chapter has represented the relevant theories particularly social exchange theory and stakeholder

theory in details. Finally, an initial research model has been founded based on the existing literature review

Figure 1.1 Summary of the Research Organization

Chapter Structure	Particular	Result
Chapter-1: Introduction	i) Overview of the study ii) Establishing the research problem	Determine the Research questions and research objectives
Chapter-2: Literature Review	i) Theoretical background ii) Research gap iii) Initial research model	Review of the relevant literature and developing initial research model.
Chapter-3: Research Methodology	i) Discuss the research design ii) Explain the methodological stand	Selection of research methodology for the present study.
Chapter-4: Field Study	i) Qualitative study through field study approach ii) Develop constructs and items	Develops comprehensive research model
Chapter-5: Hypotheses and Questionnaire Development	i) Details of the hypotheses related to the comprehensive research model. ii) Questionnaire development	Development of hypotheses and design survey instrument
Chapter-6: Analyses of Quantitative Data	Analysis of survey data by PLS- based Structural Equation Modelling (SEM) approach	Reports the survey analysis data
Chapter-7: Discussion and Interpretation	Discussions of findings	Interprets the result of analysis
Chapter-8: Conclusion and Future Directions	i) Summary of the research, limitations ii) Future research directions	Summarizes the thesis

Source: Author compiled

Chapter-3: Research Methodology

This part of the thesis primarily highlighted the research approach that has been deployed in this research and the methodology that has been used for analysing the data in this study. The evaluation of the method used in the study has also been discussed. In addition, this chapter has explained the sample selection and data collection processes in details. At last, the underlying principles of the data analysis have also been explained in this chapter in details.

Chapter-4: Field Study

This segment of the study enlightened the steps and results of the qualitative field study. The study was conducted through semi-structured interviews with nineteen (19) the dairy farms and related marketing channel members, who are the decision makers of the dairy industry in Bangladesh. The content analysis, which is most popular qualitative data analysis technique, has been used to analysed the findings of the qualitative study. Regarding the findings of the qualitative data, the initial research model was modified and developed as a comprehensive research model.

Chapter-5: Hypotheses and Questionnaire Development

This chapter consists of two sub-sections namely, hypotheses development and questionnaire development. The first section of the chapter describes the development of the hypotheses based on the comprehensive research model which was developed in the earlier chapter. It has been followed by a description of the instrument development, and sources of the measurement items based on earlier studies. Finally, the pre-test process is explained.

Chapter-6: Analysis of Quantitative Data

This chapter discusses the quantitative data, by using the Structural Equation Modelling (SEM) approach. The initial section explained the results of the pilot study followed by the common method bias and non-response bias assessments. Then, it presents the results of the quantitative data analysis in the light of partial least squares (PLS) based

on Structural Equation Modelling (SEM) to assess the measurement of the constructs and the hypothesized relationships among the construct in the model.

Chapter-7: Discussion and Implication

This part of the thesis explained the findings of the PLS results with respect to the research objectives that support the research questions. Particularly, the dimensions of the AMCR and SUG, as well as the hypothesized relationship among the constructs in the model, are discussed. In addition, it has discussed the mediating effect of the SUG along with represented EU. The theoretical and practical implications of these outcomes are also explained in the earlier chapter.

Chapter-8: Conclusion and Future Directions

The final chapter provides the summary of the study and also presents theoretical and practical contributions. In addition, the chapter enumerates the limitations and weaknesses of the present study and concludes with a brief discussion of the possible future research prospects in the subject area of this study.

1.7 Conclusion

It has described an indication of the existing literature gap and outlined how this gap has been made good by the research in the area of agricultural marketing channel relationship (AMCR), sustainable performance (SUP) of the dairy industry, sustainability governance (SUG) and environmental uncertainty (EU).

Chapter-2: Literature Review

2.1 Introduction

This chapter examines the appropriate theories related to this study helps to establish the background of this present research and research model. This section starts with a discussion of the term ‘agricultural marketing system’ followed by the theory supporting the sustainable development of the dairy industry. Based on the objectives of this research, literature review of the measurement dimension is conducted along with a critical analysis to determine the gaps in the existing literature. With a view to satisfying the research gaps, previous theories and studies are combined to develop a model of the sustainability for the dairy industry in a country like Bangladesh. The model explained the relationship among the constructs and complexity of the components in the sustainable development of the dairy industry. This part of the research, namely literature review intends to justify the empirical and earlier research in favor of measurement constructs and their link relationship to the higher order constructs which have shown in the initial research model.

2.2 Agricultural Marketing System

The agricultural marketing system represents a marketing system that is applied in the agricultural sectors. The perception of the marketing system is not the same for all. It is dissimilar to various groups of people like academia, professionals and others. After having observed the present practices in the sample areas the present choice of research has been finalised. The perception and academic deliberation of the ‘agricultural marketing system’ is a personal matter and different in the different industries.

The term ‘*marketing system*’ was introduced in 1922 by the F.E. Clark. F.E. Clark told that ‘marketing functions could be rewardingly viewed as a process’ (Mackenzie & Nicosia, 1968). It appeared as a marketing phenomenon during the 1950s and 1960s (Alderson, W. 1965; 1957; Fisk, G. 1967). The term agricultural marketing system is the sum of two words, ‘agriculture’ and ‘marketing system’. According to F. E Clark, agricultural marketing system refers the marketing functions as flows of the agro-product from producers to ultimate consumers which have been viewed as a process.

Furthermore, earlier studies that have defined the agricultural marketing system have followed the idea of F.E.Clark, such as MARDI (2015) refers agricultural marketing system involves all business functions from producers to consumers.

In addition, Rai & Panigrahy (2016) stated that agricultural marketing as a procedure that begins with a decision to produce a marketable farm product and it engages all phases of market formation of the system. This includes pre and post- harvest functions, assembling, grading, storage, transportation and distribution. Besides, Kaynak (1986) explained that marketing system is a primary mechanism for coordinating production, distribution and consumption activities in the food chain. In addition, (Mannan, 1975) stated that agricultural marketing is the process of concentration, equalization and dispersion. Hence, it has been concluded that most fundamental functions and dimensions of agricultural marketing system are assembled (concentration), processing and distribution. Thus, after an exhaustive review of the literature, it may be concluded that the agricultural marketing system describes functions perform a process to accomplish the objectives of maximization of the values to all stakeholders.

In addition more, relationship building and management are one of the leading approaches to marketing, which eventually has entered the marketing literature (Grönroos, 1992, 1995; Jackson, 1985; Jackson & Bund, 1985). According to previous studies like Grönroos (1994) and others, the marketing system is now facing a paradigm change in different sectors including manufacturing and service sectors. Among them, a few empirical research e.g Grönroos, (1994, 1995) and Webster (1992) and others have focused the significance of relationship marketing as a new paradigm of marketing and orientation. Those studies focused that relationship marketing is a new paradigm of marketing, which focuses on a behavioral approach to marketing. In addition, behavioral approach reveals the marketing system consideration of behavioral factors that support to build up a relationship for achieving the marketing goals and helps in minimizing traditional challenges for sustainable performance (SUP). In conventional marketing philosophy, it focuses on the functional approach of marketing for successful marketing performance.

Furthermore, earlier studies confirmed that in the agricultural marketing, supply chain or distribution functions such as marketing channels is extremely significant and focuses on the functions of quicker delivery of agro-product to the target customers at a right time. Many of the empirical studies have addressed that marketing functions, particularly in marketing channel are more saturated and sometimes these become as causes of the price spread in the agricultural sector like the dairy industry (Kamal & Islam, 2012; Malhotra, 1997) c.f (Halder & Urey, 2003). This situation also has found in the field study results. Moreover, Moller & Halinen (2000) demonstrated that the root of the relationship marketing is the multi-disciplinary involving issues like business marketing (interaction and network), marketing channels, service marketing and data-based marketing or direct marketing. According to Moller & Halinen (2000) marketing channel relationship is a new root of the relationship marketing as a whole. The relationship marketing research also focuses on many sub-disciplines of the marketing. Therefore, through an extensive literature review and examination of earlier discussions it has been established that the agricultural marketing channel relationship (AMCR) as a preeminent higher order construct, which representing the agricultural marketing system under the behavioral approach. Under the circumstance, the study used 'agricultural marketing channel relationship (AMCR)' as an alternative view to marketing and independent construct for reflecting the 'agricultural marketing system' that is empirically logical and valid.

2.3 Agricultural Marketing Channel Relationship (AMCR)

Agricultural marketing channel relationship (AMCR) refers to the relationship between the members of the marketing channel. This relationship highlights the connectivity of the suppliers (farmers), middlemen and buyers, in short, marketing channel members. Moreover, Rowe & Barnes (1998) confirmed that the relationship between customer and supplier is multidimensional levels of relationship and their relationship is a secondary in nature. Customer-suppliers relationship is a fundamental part of the agricultural marketing channel relationship (AMCR). In business to customer (B2C) relationship customers play the vital role as a buyer, and in business to business (B2B) relationship manufacturer/ farmers play the role of suppliers remaining others play the role as an agent of buyers. In this regard, it has logically supported that agricultural

marketing channel relationship (AMCR) implies a secondary relationship. This relationship is developed based on the advanced degree of the convention of manners and laws as well as separate social roles among the marketing channel members. There is no empirical research evidence regarding the exact meaning of higher order constructs the agricultural marketing channel relationship (AMCR), to the best knowledge of the researcher. But, the following the definitions of relationship marketing can be substantiated that the conceptual meaning of the construct the agricultural marketing channel relationship (AMCR) is logically acceptable in the field of the dairy industry in Bangladesh.

The term relationship marketing was first introduced by Berry (1983) as a new rubric for service marketing. The earlier studies addressed that in 1980s were the recognition of service risk points in the customer relationship lifecycle (Grönroos, 1983), then highlighted on developing long-term interactive relationships between suppliers and customers, integrating both services and B2B perspectives (Gummesson, 1987). In addition, Grönroos (1989) delineated that relationship marketing is to establish, sustain, and increase the relationships among the stakeholders, in a profitable way so that the purpose of all the relevant stakeholders will be fulfilled.

Moreover, Shani & Chalasani (2013) stated that relationship marketing incorporates some efforts to identify, maintaining and building the connections within stakeholders for collaborating benefits of both the sides. Further, Jackson (1985) defined relationship marketing is focused on strong, permanent relationships with individuals. In addition, Sheth & Parvatiyar (1995a, 1995b) delineated that relationship marketing as the process of emergent cooperative and shared relationship with customers and other market actors. Besides those definitions, Morgan & Hunt (1994) revealed that relationship marketing is a system of creating, emergent and preserving winning relational exchanges. Also, Wilson (1995) told that relationship marketing is a process of supportive and partnering relationships of buyer-seller by integrating theoretical and experiential research.

Hence, earlier studies supported to define the construct ‘agricultural marketing channel relationship (AMCR)’ as a procedure of building, sustaining, collaborative and reciprocally profitable relationship with agricultural marketing channel members.

2.3.1 Significance of the agricultural marketing channel relationship (AMCR) for Sustainable performance (SUP)

Extensive channel relationships are now deliberate in a primary source of competitiveness and also referred to as ‘shared advantage’ and ‘competitive advantage of the partnerships’. Marketing channel relationship is a tool of conventional channel control as well as the governance structure and administration (Weitz & Jap, 1995). In addition, the earlier studies correctly established the research on the relationship marketing paradigm, particularly in the marketing channel relationship research explored many solutions of unresolved issues. But, those studies are still alive with several unsettled issues that are concentrated on the subject of the present study. This study concentrated on some specific issues, like the association between agricultural marketing channel relationship (AMCR) with sustainable performance (SUP) and sustainability governance (SUG).

Many earlier studies, like Chen & Paulraj (2004) literally supported the contributions of the buyer-supplier relationship or marketing channel relationship with the multiple issues of business activities. Those research findings supported to substantiate the role of agricultural marketing channel relationship (AMCR) with sustainable performance (SUP) and sustainability governance (SUG). Furthermore, the agricultural marketing channel relationship (AMCR) repeatedly motivated the different branches of business performances. In this regards, Morgan & Hunt (1999); Peteraf (1993) and Dierickx & Cool, (1989) recognized the contribution of the relationship marketing paradigm in a sustainable competitive advantage. In addition, Ganesan (1994) concluded that the mainstream enterprises emerge to overlook the sustainable competitive advantage formed during the continuing channel relationships.

Additionally, Weitz & Jap (1995) continued the importance of advanced research to examine the interrelationships between the inter-farm pressures to develop the

relational exchange. Moreover, other earlier studies showed that successful business relationship helps to reduce the environmental uncertainty; contribute to the better deployment of resources and higher business performances (Dyer and Singh, 1998). Besides earlier studies, Chen & Paulraj (2004) pointed out that buyer-supplier or marketing channel relationship, such as supplier cost reduction, long term relation, communication, supplier involvement, cross-functional term etc. The relationship marketing has the potential to improve the marketing productivity and create mutual values by increasing the marketing effectiveness and efficiencies (Sheth & Parvatiyar 1995a; Sheth & Sisodia 1995).

Moreover, other earlier studies exposed multiple level advantages of the marketing channel relationship for ensuring sustainable performance (SUP), such as reducing excessive buyers handling with quick delivery; reducing inventory management costs (Trevelen, 1987); increasing economies of scale (Hahn et al., 1986); reduced lead times and logistics costs (Bozarth et al., 1998); coordinated replenishment (Russell and Krajewski, 1992); enhancing buyer-supplier product design relationship (De Toni and Nassimbeni, 1999); improving trust and improved performance (Shin et al., 2000) and better customer service and market penetration (St. John & Heriot, 1993). Furthermore, Maloni & Benton (2000) mentioned that well-built buyer-supplier relationship made an encouraging effect on manufacturer performance, supplier performance, and performance of the whole marketing channel.

In addition, a lot of empirical studies also identified the contributions of buyer-supplier relationship for increasing the business performances, such as marketing channel relationship may support to attain cost savings by reducing exploration and appraisal costs; making cheap transaction costs (Hakansson 1982); learning effects and economies of scale (Gundlach et al. 1995); reliable marketing information and improving product performance and quality (Han et al. 1993); adaptation of product with technical support (Cunningham & Homse, 1982); creating a strong, long-term customer benefits, (Hakansson 1982); promoted by the production schedules of suppliers; reduction in uncertainty (Arndt 1979; Hakansson 1982; influence the supplier and buyer performances and satisfaction (Benton & Maloni, 2005).

As mentioned earlier, agricultural marketing channel relationship (AMCR) has contributed to enhancing the long-term development of business and building a sustainable foundation for any particular industry. The buyer-supplier relationship, primarily agricultural marketing channel relationship (AMCR) assist to boost up business scorecard i.e. financial and non-financial scorecard as proposed by earlier mentioned studies, like (Trevelen, 1987; Hahn et al., 1986; Bozarth et al., 1998; Shin et al., 2000; St. John & Heriot, 1993) that are the basic requirements of the sustainable performance like economic sustainability. This finding has been supported by local and cross country as well as cross-cultural research from the historical time to yet.

In addition, previous studies could not provide adequate information regarding the significance of the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). Earlier investigation on the business relationship, such as (Buyer – Supplier) and agricultural marketing channel relationship (AMCR) role in the sustainable performance (SUP) in the dairy industry is not applied and popular. According to earlier research findings, it has that found shades of evidence in either the financial performance (economic performance) or non-financial performance (social and environmental performance) partially. Among them, a few studies explored the business relation contribution to the financial performance and some other studies also explored the non-financial performances on the same issue discretely. But, only a few researchers have been found to disclose the significance of the agricultural marketing channel relationship (AMCR) to financial and non-financial performance at a time, such as, (Economical, Social and Environmental) to support the sustainability. Those research contributions are extremely highlighted the empirical research gap on the role of agricultural marketing channel relationship (AMCR) for sustainable performance (SUP). These shortages of information regarding the managerial rationalizations are motivated to further empirical study to review the role of agricultural marketing channel relationship (AMCR) on sustainable performance (SUP) such as ESE economic sustainability, social sustainability and environmental sustainability of the dairy industry in Bangladesh.

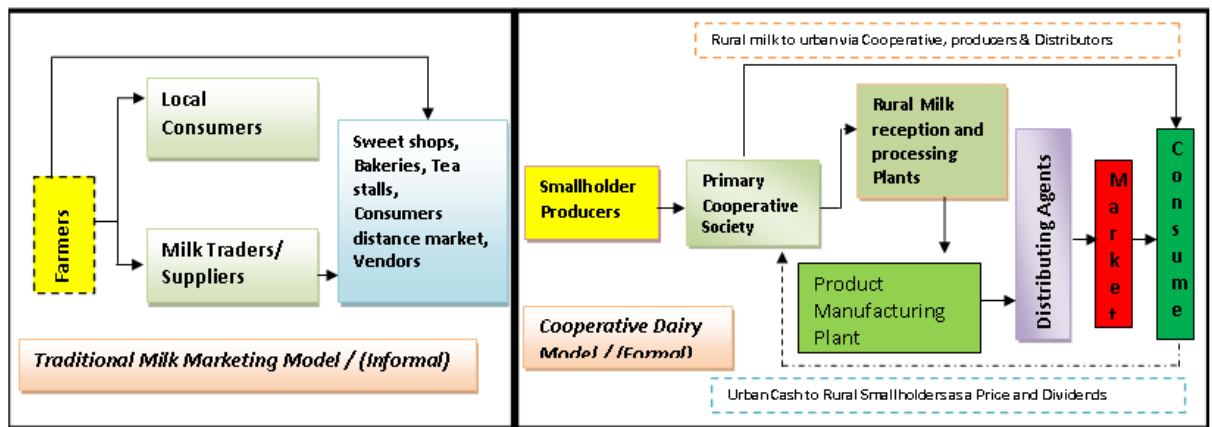
Furthermore, the focus of previous studies was mainly on the economic performance of the business. As a result, the impact of other constructs is relatively unexplored. Based on the previous findings of research the economic performance influenced by AMCR was explored in many ways. Furthermore, the current research, intend to explore the influence of AMCR relatively on the sustainable performance of the dairy industry with a Triple Bottom line framework (TBL), such as influence on economic sustainability, social sustainability and environmental sustainability as a whole. It has concluded that this issue is not explored on the agricultural marketing phenomenon, specially in the dairy industry by any other previous study to the best knowledge of the researchers. Hence, this exploration may be a landmark for agricultural marketing research, particularly in the sustainable performance of the dairy industry.

2.4 Agricultural Marketing Channel for the dairy industry in Bangladesh

Dairy farming is the oldest and most popular profession of the rural inhabitants of developing countries like Bangladesh, India and Pakistan and Indonesia. In Bangladesh, there are many types forms of dairy farming and production systems like traditional dairy production system, extensive dairy production system, intensive dairy production system, bathan production system (Uddin et al., 2011) etc. In addition, the marketing system of dairy products like liquid milk is not same all over the country. The marketing system of dairy involves in delivering the milk to the ultimate consumers by the collection, storing, processing, and distribution etc. This system is followed by all parties coming under the whole marketing channel of the liquid milk production to the ultimate consumers. Traditionally, the marketing channel members are categorized into the organized or formal and unorganized or informal channel as shown in figure 2.1 as follows.

Hence, aforesaid statements have been indicated the significance of the marketing channel in the dairy industry in Bangladesh for sustainable performance of the dairy industry.

Figure 2.1 Traditional (Informal) and Cooperative (Formal) Marketing Channel of Liquid Milk.

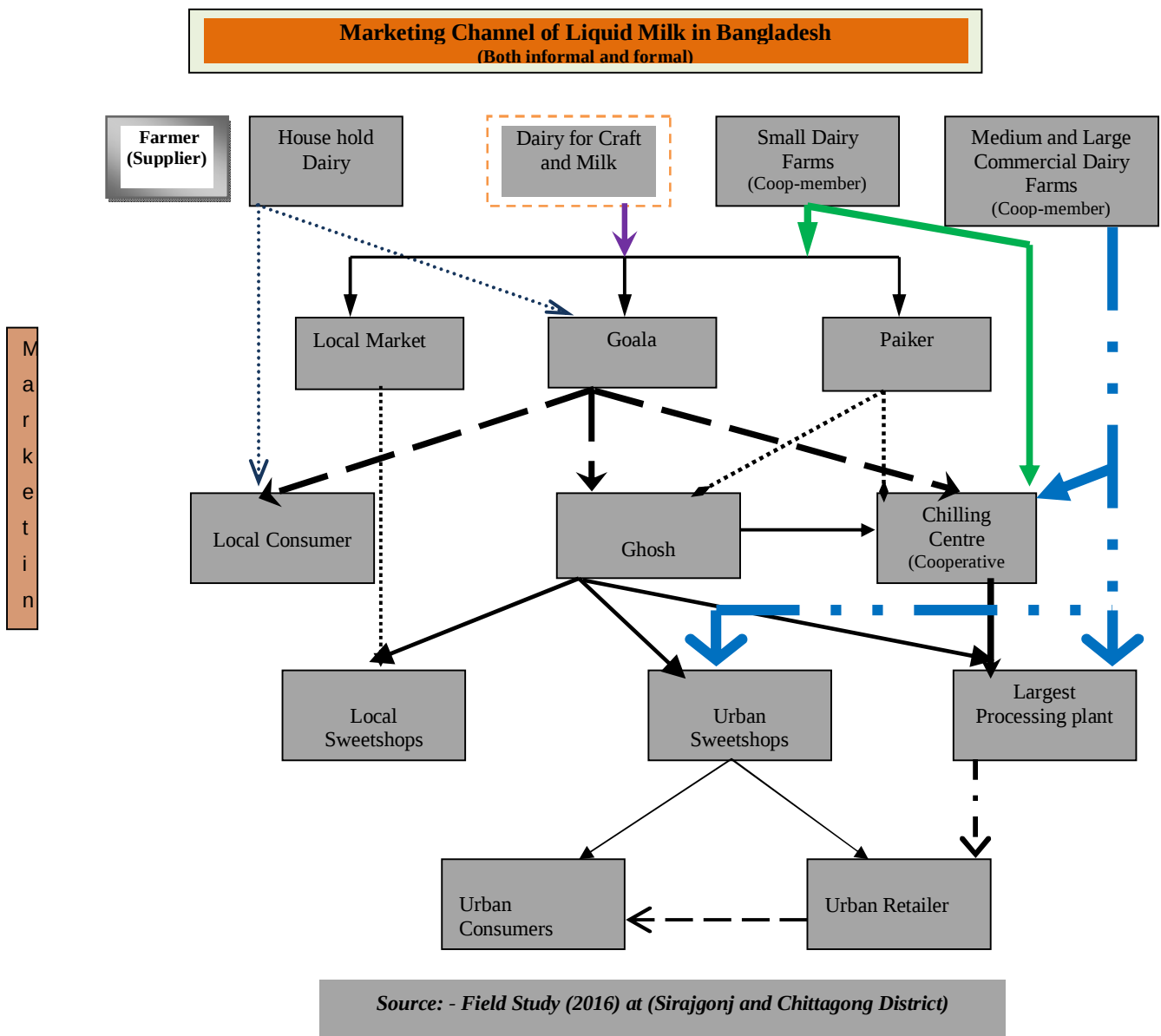


Source: Author compiled from Haque (2009)

The following figure-2.2 exhibits the present milk marketing channel in Bangladesh. It has been found that practically medium and commercial farms have sold their produce by the both formal and informal marketing channels in both districts which were surveyed. Due to lack of market structure, producer exchange, available storage facilities, demand variability for formal channel customers are main causes for selling liquid milk through both marketing channels in Bangladesh.

Furthermore, through the evaluation of existing marketing channel of liquid milk in Bangladesh, it has been found that in marketing channel there are excessive middlemen have been involved. The marketing channels are highly responsible for the price spread i.e. 53% (Malhotra, 1997) c.f (Halder & Urey, 2003) and 43% (Kamal & Islam, 2012) of the consumer price of liquid milk. Thus, it has been apparent that for the marketing of liquid milk in Bangladesh from rural level to urban consumers does not require any additional channel members and functions. Because excessive marketing channel members and their functional involvement may decrease the income and economic sustainability of the dairy farms and farmers. Where, economic sustainability is the key to sustaining the dairy industry.

Figure 2.2 Marketing Channel of Liquid Milk in Bangladesh



* Goala = who collect the milk from cow shade for sell or Ghosh, ** Paiker = who do regular buying and selling milk in larger quantity*** Ghosh = who is professional liquid milk businessman and financially solvent, **** Chiling Centre = Collection centre of milk in larger quantity on a regular basis for sending processing plant and industrial user)

Source: Author compiled from field study (2017)

Additionally, present marketing channel has been faced major problems, such as a lack of trust, commitment, cooperation, satisfaction and communication (Omar, 2016). Also, Fakir (2015) mentioned that marketing channel members have not a strong relationship with one another. As a result, farmers and primary channel members have been suffering from financial and non-financial loss regularly. He also addressed that if

farmers' want to protect this industry, they should develop mutual communication and cooperation, such as the relationship with all parties including the government to farmers. Therefore, it may require for developing a new paradigm of marketing in the agricultural marketing system. This is a demand from the stakeholders or beneficiaries side to develop a new framework in a marketing system that supports the sustainable development of the dairy industry in Bangladesh

2.5 Measurement Constructs (Dimensions) of Agricultural Marketing channel relationship (AMCR)

Many models have been developed by researchers that are certify to explain the appropriate factors, which manipulate the awareness or breakdown of a relationship, such as Anderson & Narus (1984, 1990); Anderson, Lodish & Weitz, (1987); Wilson & Moller (1991); Morgan & Hunt (1994) and Morgan, (1991). But, the empirical understanding of the process of relationship development is not matured enough yet. Another scholar Dwyer, Schurr & Oh (1987) has explained the several theoretical models of relationship development. Those models were unable to incorporate the appropriate and commonly recognized measurement dimensions for a successful relationship in all sectors.

In addition, empirical studies like Mummalaneni & Wilson (1991); Heide & John (1990) and Han & Wilson (1993) recommended the dimensions of marketing channel relationship which are relatively similar to each other. In addition, marketing channel relationship models are also proposed by another group of contemporary scholars regarding the development of a communicative relationship, such as Anderson Lodish & Weitz (1989); Anderson & Weitz (1990); Anderson & Narus (1984, 1990); Heide & John (1990, 1992). Here, also was found a few measurement dimensions common in nature.

Furthermore, earlier studies like Wilson & Moller (1988, 1991) accumulated a list of variables that have been used with success in modeling different relationship patterns. Among other earlier studies like Anderson & Narus (1984), Anderson, Lodish & Weitz (1987) explored contributing measurement dimensions to represent the buyer-seller or marketing channel relationship. This study selected a set of representative measurement

dimensions that have both theoretical and empirical support from the list of many possible variables incorporated in the literature review. The dimensions might add to or delete from the list to confine the relationship status in the particular industry in the context of nature and culture.

As mentioned earlier, development of a theoretical framework in the area of agricultural marketing channel relationship (AMCR) has proven to be complicated due to multidimensional constructs. Despite having challenges, this area has been received growing consideration from scholars for exploring the measurement constructs of agricultural marketing channel relationship (AMCR). Thus, by integrating the previous research studies it has been found that the measurement constructs (dimensions) of agricultural marketing channel relationship (AMCR) are **Trust, Commitment, Satisfaction, Power, Cooperation and Communication** most common and recognized to the academia and professionals in the different industries.

As stated in an earlier chapter the research hypotheses which rely on these factors have a positive influence on the business relationship. Thus, in the following section, a review of relevant literature is proposed to provide a theoretical background of each measurement construct. Along with the discussion, the research gap in the existing literature is determined and finally developed in an initial research model.

2.5.1 Trust

Trust is a crucial factor in each part of human research (Rotter, 1967) and it has been established in different collaborative perceptions, like communication (Gambetta, 1988), cooperation (Deutsch, 1958, Osgood, 1959), in leadership (Sergiovanni, 1992), in organizational culture (Hoffman et al., 1994), and effectiveness (Hoy & Sobo, 1998). Trust is a success factor (e.g. Holtari & Saarikangas, 1994; Glover, 1994), unofficial trust is important for business relationships (Macaulay, 1963; Arrow, 1974; Lorenz, 1988; Hakansson, 1989). In addition, many earlier researchers recognized that trust is a significant success factor of relationship e.g (Blomqvist, 2002; Ford et al., 1988; Parkhe, 1998; Sako, 1998). Among others researchers, like Blomqvist (1997) confirmed that trust is a controlling factor for capital investment, selling highly

investment goods, relationship marketing, cross- cultural communication and learning, as well as transaction governance and cost. Finally, Patrick, (2004) and Brashear et al. (2003) stated trust is a key element of business relationship that is supported by many theorists and professionals by this time.

In addition, trust is a dimension, which reflects the relationship in any spheres to build a committed association, an alliance among the customers and partners. Many studies have explored the relevant aspect of trust, including definition and contribution as a measurement construct of relationship, e.g. (Morgan and Hunt, 1994; Seppänen et al., 2007; Hoy & Moran, 1999). Trust subsists when any party has confidence in an exchange partner's reliability and integrity (Moorman et al., 1993; Rotter's, 1967). The idea of trust is the focus of philosophers, politicians and many other disciplines. It has five appearances, which are confirmed by empirical study, i.e. benevolence, reliability, competence, honesty and openness (Hoy & Moran, 1999). But, the meaning or definition, trust has no similarity with evaluation of empirical knowledge and found the evidence in regards to the repetitive growth of theoretical and academic development of trust approaches in history. Trust has classified with levels, like individual trust, organizational trust and national trust and this study highly concentrated on the trust in organizational level particularly trust among the suppliers and customers. This level of trust has focused on inter-organizational relationship directly.

Trust is not only a subject matter of business but also a subject matter of the other disciplines, like social psychology, economics, and philosophy. Many earlier studies addressed the concept of trust in various disciplines, in order to reach an acceptable definition that could be used in the mass area of research particularly in business research. Quite a few pieces of evidence supported the multidisciplinary manifestation of trust e.g. (Lewis & Weigert, 1985; Young & Wilkinson, 1989; Lagerspetz, 1998; Moorman et al. 1993; Young & Wilson, 1993). Moreover, Blomqvist (1997) stated that trust as the perceptions of social psychology, philosophy, economics, contract law and market research (marketing research). Those studies also recommended trust is directly related and used as a synonym like competence, credibility, confidence, faith, hope, loyalty, and reliance.

The subject matter of the present study has focused trust as a marketing discipline. Marketing research borrows it from the other disciplines regarding the subject matter of trust. The meaning of trust in the marketing discipline has encapsulated by the researcher on the basis of earlier empirical studies. Among them, Anderson & Weitz (1989) stated that one party faith is needed to fulfill the actions undertaken by another party in the future. Besides, Magrath & Hardy (1989) replied that trust delineates the belief that another person or thing (company) may rely upon the confidence. Finally, Morgan & Hunt (1994) described that trust means one party has confidence in an exchange of partner's reliability and integrity. Along with, Blomqvist (1997) supported the positive functions of trust in a relationship with development and co-operation and focused mainly on the measurement construct and outcomes of trust in the marketing channel relationship.

2.5.1.1 Significance of Trust in the Agricultural Marketing Channel Relationship (AMCR)

The influence of trust in the relationship has been conceptualized with the logic of relationship building such as confidence, faith, hope, loyalty and reliance, which are the synonyms to trust (Blomqvist, 1997). Based on earlier studies, it has understood the role of trust in a relationship at any level of relationship either in personal and business. Trust has been identified as an important dimension, which makes teamwork, intra-organizational cooperation, inter-organizational partnerships, strategic alliances, and performance of networks of small farms successful (Sako, 1998; Larson, 1992; Dogson, 1993; Young-Ybarra & Wiersema, 1999; Virolainen, 1998; Blomqvist, 2002; Aulakh et al., 1997). In addition, trust has been recommended to diminish governance costs (management costs), costs for internalization (acquisitions), and transaction costs in and between organizations, and opening opportunities for allocation and informal partnership in networks. Trust also permits interactive communication, information sharing and conflict management (Bidault & Jarillo, 1997; Creed et al., 1996; Barney & Hansen, 1994; Sako, 1998 & Blomqvist, 2002; Aulakh et al., 1997). In addition, Batt (2003) argued that trust has a significant contribution to built the buyer-seller relationship. The presence of trust in the relationship creates a market barrier to new buyers. Trust initially promotes mutual understanding between exchange partners and

strengthens the relationships. Other research identifies that trust improves the relationship quality between exchange partners (Boniface et al., 2009; Gyau & Spiller, 2010). In the long run, it has strengthened the business relationships and promotes long-term relationships. Where parties maintaining higher commitment and loyalty to their relationships (Morgan & Hunt, 1994; Boniface et al., 2010).

Moreover, earlier studies discussed that trust is a measurement construct of relationship marketing paradigm and reflect the relationship status of society as a whole e.g. (Gronroos, 1989, 1995; Achrol, 1991; Salmond, 1994), the diverse relationship-marketing approaches recognized that trust leads to the kind of constructive and cooperative conduct for long term relationship (Young and Wilkinson, 1989; Morgan & Hunt, 1994) and a significant aspect of industrial arrangements (Hakansson, 1982; Hallen & Sandstrom, 1991; Kaman, 1993). In addition, trust delineates as a qualification for successful project marketing (Usunier, 1990). Marketing research has not been emphasized on trust yet, such as marketing channel research has put attempt to the studying power, but not concentrated to trust until very recently (Anderson & Weitz, 1989; Young & Wilkinson, 1989; Anderson & Narus, 1990). Alternatively, consumer research did not dedicate much attention to trust (Schurr & Ozanne, 1985; Herbig & Milewicz, 1993). Trust has been identified as a principal variable for a professional-client relationship (Moorman et al., 1992, 1993; Halinen, 1994) and sales activities (Schurr & Ozanne, 1985).

Despite the assertion of trust, its influences on agricultural marketing channel relationship (AMCR) is still relatively unexplored. Researchers have concentrated regarding the role of trust on the relationship marketing paradigms, but they failed to integrate the influences of trust into the agricultural marketing channel relationship (AMCR) till today. Much earlier research still using trust as an antecedent, construct and mediating construct for a testing relationship (Morgan & Hunt, 1994; Hoy & Moran, 1999). The current study, in contrast, analyzed the influence of trust in the agricultural marketing channel relationship (AMCR). Moreover, the effect of trust as a measurement construct of agricultural marketing channel relationship (AMCR) will be examined.

2.5.2 Commitment

Commitment is an underlying and significant dimension of the relationship which supports for building and maintaining the relationship with an individual and organization levels. Many empirical researchers, like Anderson et al. (1987); Anderson & Weitz (1990); Jackson (1985); Dwyer, et al. (1987) and Moorman, et al. (1992) substantiated that commitment is a dimension of relationship and it motivates for maintaining a long-term relationship with customers. It has found diversified issues of commitment and pertinent, relevant response in regards to theoretical issues. Numerous sagacious research supported the explanation of commitment, such as commitment indicates motivation (Geyskens & Steenkamp, 1995); motivation to maintain a relationship (Wilson, 1994; Dwyer et al., 1987. Further, Morgan & Hunt (1994) confirmed that for building an enduring relationship, partners thinking and evaluating the commitment as a substitute with others as to justify extreme efforts in maintaining relationships. Finally, this has concluded that commitment has been recognized as an important phenomenon comprising similar to other dimensions.

Furthermore, the meaning of commitment is different among the intellectuals and researchers. But this study motivated the definition of commitment, which is proposed by Morgan & Hunt (1994). This study defined commitment as an exchange partner consideration in a continuing relationship with each other significantly to require maximum efforts preserving it; that means committed party suppose to continue the relationship until further notice. While many components have been projected among them this study focused on two aspects, like loyalty commitment (LC) and continuance commitment (CC) which are appropriate in context to consumers (e.g., Fullerton, 2003; Bansal et al., 2004). In addition, Kumar, et al. (1994) distinguished commitment in the following two forms such as affective and calculative commitment.

Moreover, Allen & Meyer (1990) proposed another three different mindsets of primary organizational commitment: affective, normative, and continuance. Herewith, 'Affective commitment (AC)' demonstrated the customer's preference to maintaining their relationship with their suppliers with an optimistic feeling towards the exchange partners (Konovsky & Cropanzano, 1991); to employees' emotional connection to

sharing and admiration with employers (O'Reilly & Chatman, 1986). Also, eminent scholars, like Morgan & Hunt (1994) and Garbarino & Johnson (1999) stated that affective commitment (AC) is more emotional and develops through the degree of personal attachment that customer has with a company.

In addition, 'Calculative commitment (CC)' or 'Continuance commitment' reflects a negative point of reference of motivation. It supports a firm's incentive to maintain the relationship because it cannot easily substitute its current partner and cannot achieve the same resources. Many researchers such as Dwyer, Schurr, & Oh, (1987); Anderson & Weitz, (1992); Heide & John, (1992) concluded that 'Calculative commitment (CC)' is more balanced and economic-based reliance on benefits due to the lack of switching costs (Anderson & Weitz, 1992; Dwyer, Schurr, & Oh 1987; Heide & John, 1992). Therefore, it has exposed that marketing channel relationship commitment justified the calculative commitment because the buyer-seller regularly look for the better alternative and hold the relationship until exploring a better alternative than the present. Other sites 'Continuance commitment' is the extent to which employees perceive that they have to stay with their employers because the costs of leaving are too high (McGee & Ford, 1987); an addition based on the perceived costs of not enduring with a course of action (Bentein et al., 2005).

Moreover, according to Brown et al. (1995) normative commitment and instrumental commitment are similar. 'Normative commitment (NC)' is a supposed accountability to continue with some implication of moral importance. It is a sensation of moral obligation to stay with a particular course of actions (Bentein et al., 2005). Another study Ellram (1991) defined that normative commitment (NC) is a mutual, enduring relationship over long a time that is based on mutual commitment and sharing. In addition, instrumental commitment, in contrast, is based on compliance (Brown et al., 1995). The compliance happens when one party accepts the stress of another in hopes of receiving positive reactions from the other party.

Beside above evaluation, empirically this has proved that the significance of commitment in the relationship marketing paradigm, particularly in building a relationship with its customers and channel members. The level of commitment plays a

key role in building the successful business relationship (Powers & Reagan, 2007). Thus, it has concluded that commitment is a measurement construct of relationship marketing, particularly in agricultural marketing channel relationship (AMCR).

2.5.2.1 Significance of Commitment in the Agricultural Marketing channel relationship (AMCR)

Commitment plays the role as a measurement construct of relationship with individual and organizational level from the commencement of the human civilization. But, this contribution has been recognized academically and professionally for the last a few years ago. Many researchers have acknowledged the contribution of a long-term commitment by their extensive research contributions internationally. A non-ownership type relationship which is established as an important area of business- business (B2B) transactions (Rinehart, et al., 2004). Commitment has a positive effect on customers' behavioral objectives. Different theories substantiated the outcomes of commitment which has been promoted as a measurement construct of relationship (Morgan & Hunt, 1994). Many research studies incorporated the importance of commitment as a dimension of a relationship in the paradigm of relationship marketing like (Morgan & Hunt, 1994; Hardwick & Ford, 1986; Gundlach, et al., 1995). In an intra-organizational relationship or channel relationship commitment is rooted in developing a long-term and stable channel relationship that may exceed direct exchange costs and benefits. Accordingly, Anderson & Weitz (1992) presented that commitment is an emotional construct the desire to develop a secure, self-assurance in the constancy and the inspiration to build short-term sacrifices to continue the channel relationship.

All prior research studies supported that commitment has contributed as a measurement of the relationship, but none has justified it as the measurement of agricultural marketing channel relationship at all. By this consideration, the present research proposed the agricultural marketing channel relationship (AMCR) as a higher-order construct that is an inclusive sphere of relationship marketing paradigm. So, previous research findings are parallel to the present matter like the significance of commitment in the agricultural marketing channel relationship (AMCR). Despite the declaration that commitment manipulates the relationship, how commitment influences agricultural marketing channel relationship (AMCR) is still largely unexplored. This study has

concentrated on the role of commitment in the relationship marketing. Similar to earlier researches still now used commitment as a construct and mediating construct for testing relationship. The study has evaluated commitment as a measurement construct of the agricultural marketing channel relationship (AMCR). Moreover, the effect of commitment as a measurement constructs on the agricultural marketing channel relationship (AMCR) will be examined.

2.5.3 Satisfaction

Satisfaction has been considered and recommended as a significant measurement construct of the relationship from earlier times. Satisfaction is concerned with the experiences of the partner regarding their expectation and experiences. Satisfaction is an incentive to enhance the relationship with customers for the long term and is highly focused on regular performances as desired according to costs or sacrifices. The concept of satisfaction is a developing issue and highly dominated by the perceptual development of beneficiary and benefactors. Moreover, the marketing researcher believes that satisfaction involves a psychological dilemma. Where one group is with same satisfied and another group is dissatisfied with the same benefits and values. Thus, observed situations have been explained that satisfaction may not be permanent and should be unique and exclusive one over the period of times within the different culture and social values.

In addition, Anderson & Narus (1984) stated that satisfaction is a positive response for ensuring the decision of all phases of organization's working correlation with other organizations. Moreover, Gladstein (1984) represented that satisfaction has been found to be directed to the long-term determination of relationships. Many former research studies have been made a theoretical evaluation of satisfaction as a measurement construct of relationship and diversified issues of satisfaction to found a relevant and applicable in response to theoretical matters. In addition, they are delineating about the satisfaction and the dimensions of the satisfaction to the customers from the primitive time, which enhance the branch of the theoretical backdrop of satisfaction.

Furthermore, to examine the description of satisfaction such as, relationship satisfaction in a service context as an emotional condition that happens in reaction to a measurement of interface experiences (Crosby et al., 1990). Satisfaction is stated as a common appraisal, which derives from the total acquisition and consumption performance. Also, Fornell (1992) defined that satisfaction is a decision between the favorite supplier's performance and the customer's expectations. On the other hand, Frazier (1983a) confirmed satisfaction is a positive emotional condition substantial to a judgment of all phases of relationship with each other. Thus, a more general definition of supplier satisfaction in the supply chain response of channel relationship there is no substance power inequity between the buyer–seller (Benton & Maloni, 2005).

In addition, satisfaction is a multidimensional issue, which is supported by the empirical research findings such as, (Geyskens et al., 1999). Also, Geyskens et al. (1999) described that satisfaction should be described by the mutual the economic and social phases. Where, economic satisfaction is referred to be the channel members' positive influential reaction to the monetary rewards that stream from its associate relationship. On the other hand, social satisfaction is the consequence of the channel partner's affirmative emotional answer to the non-economic portion of the association in that interaction which the substitute partner for fulfilling, gratifying and win easy. Thus, a product has been distributed to the end customer through a marketing channel that includes suppliers, manufacturers, and distributors. But, this marketing channel cannot be reactive without pleasing the channel members. Furthermore, Benton & Maloni (2005) addressed that a manufacturer produces quality products when its suppliers approach for quality products.

The earlier studies identified that satisfaction is a consequence of one party appreciation with the other's capability to fulfill norms and prospects (Dwyer & Oh, 1987; Fornell, 1992; Frazier et al., 1988; Anderson & Narus, 1984). The purpose of the current literature review is to evaluate essential of satisfaction for supplier-buyer dyad and facilitate in building strong relationships. This empirically stated, when the relationship will be temporary due to lower level suppliers' satisfaction, consequently

the possibilities of disputes will occur during the execution and contest efficiency in the marketing channel (Benton & Maloni, 2005).

2.5.3.1 Significance of Satisfaction in the Agricultural Marketing Channel Relationship (AMCR)

Satisfaction is considered as a measurement construct for building a long term relationship in personal as well as organizational level. It has been accredited academically and professionally for many years. Many empirical types of research recommended that satisfaction of customers facilitates the relationship with business to business and personal stage e.g. (Anderson & Weitz, 1989, 1992; Anderson & Narus, 1990; Morgan & Hunt, 1994).

In addition, to describe the importance of satisfaction in the marketing relationship, particularly agricultural marketing channel relationship (AMCR), straight and indirect empirical research conclusions have been incorporated in the present research such as Boniface (2011) and others. This study identified a number of variables that influence the relationship, including trust in the partner and satisfaction with the relationship. However, promoting relationship outcome, such as trust, satisfaction, commitment and loyalty in the relationships encourage sustainable and integrated business relationships (Batt, 2003; Espejel et al., 2008; Gyau & Spiller, 2008). Also, Frazier (1983a) told that buyer holds the relationship well when the buyer will be satisfied. Satisfaction including economic and social satisfaction both is an equal contribution to building a relationship within marketing channel. Many studies recognized the importance of price satisfaction in the increase and continuation of enduring relationships between exchange partners. In business-to-consumer (B2C) relationships, price satisfaction plays a significant role in competitive strategies, influencing customer's purchase intentions (Campbell, 1999; Munnukka, 2008) and loyalty (Choi & Mattila, 2009) that can ultimately direct to business profitability and sustainability (Diller, 2000a; Kotler et al., 2006; Boniface et al., 2010).

Other earlier studies contribute to the satisfaction as a measurement construct of relationship, but none justified the measurement construct of agricultural marketing channel relationship (AMCR) at all. The present research focuses that higher order- a

construct of agricultural marketing channel relationship (AMCR) is the comprehensive field of relationship marketing paradigm. In spite of the significant contribution to the satisfaction with the relationship, it has influenced agricultural marketing channel relationship (AMCR) and still relatively unexplored. Researchers have determined the position of satisfaction with the relationship for marketing paradigms, but they are unable to incorporate the influences of the satisfaction into the agricultural marketing channel relationship (AMCR). The current study, in contrast, analyzed the influence of satisfaction in the agricultural marketing channel relationship (AMCR) and the effect of satisfaction as a measurement construct in the agricultural marketing channel relationship (AMCR) will be examined.

2.5.4 Power

Power is another measurement constructs of business to business relationship. The power has received consideration in many assorted disciplines like economics (Scherer, 1980), sociology (Emerson, 1962), management and organizational behavior (Bacharach & Lawler, 1980) and marketing as a construct of relationship. The perception of the power is not common to all the stakeholders. Many empirical research findings concluded that power refers the owner's ability to achieve a high level of influence. These theoretical contributions have supported to clarify the definition of power, sources and others relevant knowledge about the power in the agricultural marketing channel of the different industries.

In addition, Beetham's (1991) described that power is an ability to produce projected effects upon the world around, to appreciate the purposes within it. Power has invented by sociologists, psychologists, political scientists and economists clarify the meaning and thought. But, sociology, psychology and political science are not the justifying matter of this study. Hence, economics discipline reflecting the subject matters of the present study. In the concept of economics, power is an 'ability' (Emerson, 1962; Wilkinson, 1973; Schmid, 1978; Bartlett, 1989, 2006) 'capacity' or 'capability' (Ratnasingham, 2000), 'influence the intentions and actions' (Emerson, 1962), 'decisions' (El-Ansary & Stern, 1972; Wilkinson, 1973) and 'behavior' (Wilkinson, 1973) or 'implement one's interests' (Schmid, 1987). Therefore, Emerson (1962)

described power is the ability of one farm to influence the purpose and actions of another farm or stakeholders.

In addition, there is also a new approach to power twisted by marketing channel literature, which is a concentrated area of this research. Previous studies which supported and defined the term '*power*' in the marketing channel such as El-Ansary & Stern (1972) delineated power refers the ability of a channel member to control the decision variables in the marketing strategy of another member in a given channel at a different level of distribution. Cox et al. (2003) defined power as the ability of a farm (or an entrepreneur) to own and control the markets that allow for sustaining its ability to appropriate and accumulate value for itself. But, power in the marketing channel refers the source of the ability to control the decision variables in the marketing strategy of the target channel (Etgar, 1976; Gaski, 1984).

Additionally, earlier studies have concluded that coercion, reward, legitimate, expert, reference and information are the key sources of organizational power. The most appropriate types of power are mediated and non-mediated power (Benton & Maloni, 2005; Ke et al., 2009; Zhao et al., 2008). In marketing channel literature, there are three ways to classify these six sources of power, like coercive and non-coercive, economic and non-economic and mediated and non-mediated (Lee, 2001). Besides this, French & Raven (1959) identified five types of power, each based on its source or origin, namely coercive power, reward power, expert power, legitimate power, and referent power. That study also explained that coercive power enables an individual to punish others; reward power depends on the ability of the power holder to offer rewards to others; expert power is derived from the skills or special knowledge of a particular subject; legitimate power stems from a legitimate right to influence and an obligation to accept this influence and referent power depends on an ability to be attractive to others and depends on the charisma and interpersonal skills of the power holder.

2.5.4.1 Significance of Power in the Agricultural marketing channel relationship (AMCR)

Power is a significant measurement of agricultural marketing channel relationship (AMCR). From the discussion of earlier sections, it has been found that the importance

of power for building the business to business relationship, such as customer-supplier relationship and channel relationship in the diverse nature of the industry as well as culture. In addition, many empirical types of research substantiated that power has a considerable effect on the buyer-supplier relationship and performances (Lee, 2001; Hingley, 2005; Leonidou et al., 2008; Zhao et al., 2008).

Moreover, few research studies, like Munson et al. (1999) addressed that power has contributed in the customer-supplier relationship and supply chain integration. In a company, power influences the pricing strategy, inventory control and JIT, operations control, channel or distribution structure management, and information management (Munson et al., 1999). Also, Hunt & Nevin (1974) demonstrated channel power represent that franchisor-franchisee channel power which determines by the coercive and non-coercive power variables. Another study, March (1955) recommended channel power as the attributes which influence the channel member's behaviors and decisions. Thus, for attaining, the goals of sustainable channel relationship the channel member's should develop the incentive. Numerous distribution channel research like Lusch & Brown (1982); Frazier & Rody (1991) and Frazier & Summers (1984) exposed that power exercise for non-coercive manipulates approach when the employment of coercion may be a threat to the beneficiaries (Frazier & Rody, 1991). Furthermore, other researchers Frazier (1983b) and Dwyer & Walker (1981) argued that marketing channel power should be subject to utilize mediated power strategies that forms of power involve less time to execute any form of the decisions.

Finally, previous studies validated the role of power as a measurement construct of relationship, but none has justified it as a measurement construct of agricultural marketing channel relationship (AMCR) at all. In spite of the recognition regarding the role of power in the relationship, the influence of power on the agricultural marketing channel relationship (AMCR) is still relatively unexplored. Researchers have determined the situation of power in the relationship for marketing paradigms, but they are unable to incorporate the influences of power in the agricultural marketing channel relationship (AMCR). In contrast, the present study analyzed the influence of power in the agricultural marketing channel relationship (AMCR) and the effect of power as a

measurement factor in the agricultural marketing channel relationship (AMCR) will be experienced and explored.

2.5.5 Cooperation

Cooperation is a significant construct of the relationship in the personal and organizational level. It contains the equal weight in the relationship in comparison to other constructs, but unpredictably this has not been highly recognized to the concerns till now as a principal construct of relationship. Anderson (1965) explored that, cooperation is neglected, while another behavioral dimension of channel relationships, such as power, influence strategies; control and conflict receive the higher rate of attention by marketing researcher.

In addition, earlier studies concluded that cooperation between buyers and suppliers has been considered as a successful relationship building a construct in the channel (Mohr and Spekman, 1994; Monczka, Peterson & Handfield, 1998; Johnston, Mccutcheon, Stuart & Kerwood, 2004). Another existing literature also supports the inter-organizational cooperation which reveals the abilities of two or more farms to collaborate and work together in a joint fashion toward their respective goals (Bengtsson & Kock, 1999). Though there is no substantiation about the definition of cooperation yet, but common empirical research findings concluded that cooperation is a common sharing and adaptation in any particular conditions for ensuring mutual benefits of organizations or individuals. Cooperation is commonly used sagaciously with no specific definition. Empirical researchers' contributions have been gathered for defending the literature- support of cooperation regarding definition, dimensions, and usages in the business and non-business area.

Furthermore, cooperation is a Latin word which means "*together and to work*". It refers to a particular condition in which members' works together to achieve their shared goals (Anderson & Narus, 1990). Also, cooperation is defined as the harmonized activities taken by substitute parties to achieve mutually beneficial behavior in terms of flexibility, information exchange, and shared problem-solving (Morgan & Hunt, 1994). Here, flexibility means the willingness of the parties to alter

their own behavior to accommodate each other's needs. Information exchange reflects both parties' enthusiasm to split information and reveal to each other. It has considered that shared problem-solving attitude among the stakeholder indicates that they have agreed to split responsibility for dealing with problems and maintaining their relationship with long term.

In addition, cooperation has been conceptualized as a product of positive exchange and experiences between a buyer and seller (IMP Group, 1982). Moreover, cooperation has been justified as a two-party construct. In other words, cooperation is a function of all parties in the relationship. Stakeholder's relationship contributes to the planned benefits that the farms share in the ultimate customer in the market (Sethuraman et al., 1988). Furthermore, many empirical studies concluded that cooperation is a principal phase of the political economy (Stern & Reve, 1980) and interaction model (Hakansson, 1982). It plays a fundamental role in achieving coordination in the channels of distribution (Anderson & Narus, 1990; Morgan & Hunt, 1994). A Higher level of cooperation suggested behaviors dependable with the two-pronged power system (Bonoma, 1976). Finally, cooperation is implicit in the symbol of interpersonal relationship (Kelley & Thibaut, 1978).

2.5.5.1 Significance of Cooperation in the Agricultural marketing channel relationship (AMCR)

Cooperation is measured to build a platform for inter-organizational knowledge and wisdom (Dyer & Singh, 1998). In the paradox of relationship marketing, effective cooperation within a network promotes effective competition among networks, which protect the interest of the relationship marketing success. The partner cooperation highlighted the interdependence with associate farms, where they are cooperating when one party to the other party for business (Heide & Miner, 1992). It also focused on enthusiasm to continue flexibility in providing service beyond the contractual agreement (Johnston et al., 2004). Additionally, cooperation developed the long-term business and non-business performance through building a business relationship with customers and other stakeholders. Thus, cooperation refers to the preference of member and long term direction in the relationship (Leung et al., 2005). In a practical aspect, it has found that stakeholders and marketing channel members contributed to the

surrogate relationship, namely a cooperative relationship for accumulating tangible benefits such as cost minimization, quality enhancement, operational flexibility and just time delivery. The exchange relationship is essential for enhanced ability to meet the unforeseen market uncertainties (Jaworski & Kohli, 1993).

Furthermore, empirical studies contributed regarding the cooperation as a measurement of the relationship, but none is blameless in the measurement of agricultural marketing channel relationship (AMCR) at all. The present research examined that agricultural marketing channel relationship (AMCR) is the comprehensive sphere of relationship marketing paradigm. So, previous research findings are equivalent to the present issues like the significance of cooperation in the agricultural marketing channel relationship (AMCR). In spite of the appreciation of the function of cooperation with the relationship, how it has been manipulated agricultural marketing channel relationship (AMCR) is still comparatively unfamiliar. Researchers determined the phase of cooperation in the relationship marketing, but they are unable to incorporate the influences of cooperation in the agricultural marketing channel relationship (AMCR). Many types of research are still using cooperation as an independent construct and mediating construct for building the relationship as well as outcomes of some construct of the relationship. The current study, in contrast, analyzed the influence of cooperation in the agricultural marketing channel relationship (AMCR). Moreover, the consequence of cooperation as a measurement factor in the agricultural marketing channel relationship (AMCR) will be explored in this present study.

2.5.6 Communication

Communication has been introduced as a measurement tool of a formal and informal relationship in the world. Like many other factors of the relationship, it is an essential dimension for composing long term relationship in the marketing channel. The influence of the communication in the relationship has been asserted by the previous studies. In addition to, it has been recognized that communication has a positive association with channel relationship like supplier- buyer dyad. Channel members' communication is an obligatory progression of relationship marketing. It supports to encourage trust, information and knowledge sharing to accept the supportive and

mutual activities of relationship marketing. Although it helps to promote relationship bonds, mind full efforts to produce universal bonds, it has a more supporting, impact on the relationship (Parvatiyar & Sheth, 2001). In perishable product supply like agricultural distribution system mutual sharing of information and knowledge, it reduces any types of unexpected surprises and accelerates competitive advantages by maximization of profit and proper inventory management, which has empirically been supported by scholars like (Spekman et al. 1999).

In addition, the fundamental concept of communication is the transformation of information between two parties. But today, this conceptual meaning of communication has not been obstructed in a fixed cube. Many academic research scholars have presented their judgment regarding this issue. Such as, Anderson & Narus (1990) delineated that communication is the formal and informal sharing of significant and appropriate information between farms. Also, Cannon & Perreault (1999) recommend that information sharing refers to stakeholder's enthusiasm to share information. However, the trust can be translated into an unwillingness to share information (Fawcett & Marnan, 2001) and it also creates it complicated to share receptive information such as financial data in Asian business (MOEA 1999). Furthermore, communication improves trust by resolving an argument, misunderstanding (Etgar, 1979). Further, communication reduces role ambiguity; in turn, self-governing channel members favor selling with a company that presents them with less role ambiguity (Teas & Sibley, 1980).

2.5.6.1 Significance of Communication in the Agricultural marketing channel relationship (AMCR)

Earlier studies agreed that communication is an elementary aspect of the relationship. The communication between farms can be managed and boost channel outcomes (Anderson & Narus, 1990; Anderson & Weitz 1989, 1992; Boyle et al., 1992; Frazier & Rody, 1991). Previous studies, like Bleeke & David (1993) argued that communication is the most important dimension for successful inter-farm exchange. It is strength for managing behavior in any organization (Cummings, 1984; Hutt & Speh, 1995). It plays an important role in understanding the mutual benefits in quasi-integrated channels (Mohr & Nevin, 1990) and channel members' absolute

coordination by sharing information in two-way interchanges. Also, communication fosters the confidence in the continuity of relationship and reduces dysfunctional conflict (Anderson & Weitz, 1989; Anderson & Narus, 1990; Dwyer, Schurr, & Oh, 1987). Hence, this framework supports in favor of channel communication for building up a committed relationship within the channel.

In addition, effective communication in a channel relationship can enhance levels of channel members coordination, satisfaction, commitment levels and performance (Goodman & Dion 2001). This is also significant to preserve a permanent buyer relationship and attains high performances (Morgan & Hunt 1994). Consequently, intensive two- way communication concerning plans, programs, expectations, goal setting, and performance evaluation are critical for resolving disputes and coordinating actions (Arndt, 1979). Besides this, communication is an ideal instrument that supported for achieving and monitoring integrative agreements and preventing misunderstandings among the partners and stakeholders. In addition, an intensive communication leads to better-informed parties, which in turn should make every party more confident in the relationship and more willing to keep it alive. Moreover, Duncan & Moriarty (1998) suggested that it is impossible to have relationships without communication. These prior research recommendations highlighted that role of the communication for building and maintaining channel relationship and the elimination of misunderstanding and other types of challenges in the relationship.

According to the findings of the previous studies, communication is a measurement of the relationship, but present research examined that agricultural marketing channel relationship (AMCR) is the comprehensive area of relationship marketing paradigm. So, the previous research findings are equivalent to the present issues, like the significance of communication in the agricultural marketing channel relationship (AMCR). In spite of the admiration about the function of communication with the relationship, how it has been influenced the agricultural marketing channel relationship (AMCR) is still comparatively unfamiliar. Researchers have determined the importance of communication in the relationship marketing, but they are unable to incorporate the influences of the communication into the agricultural marketing channel relationship

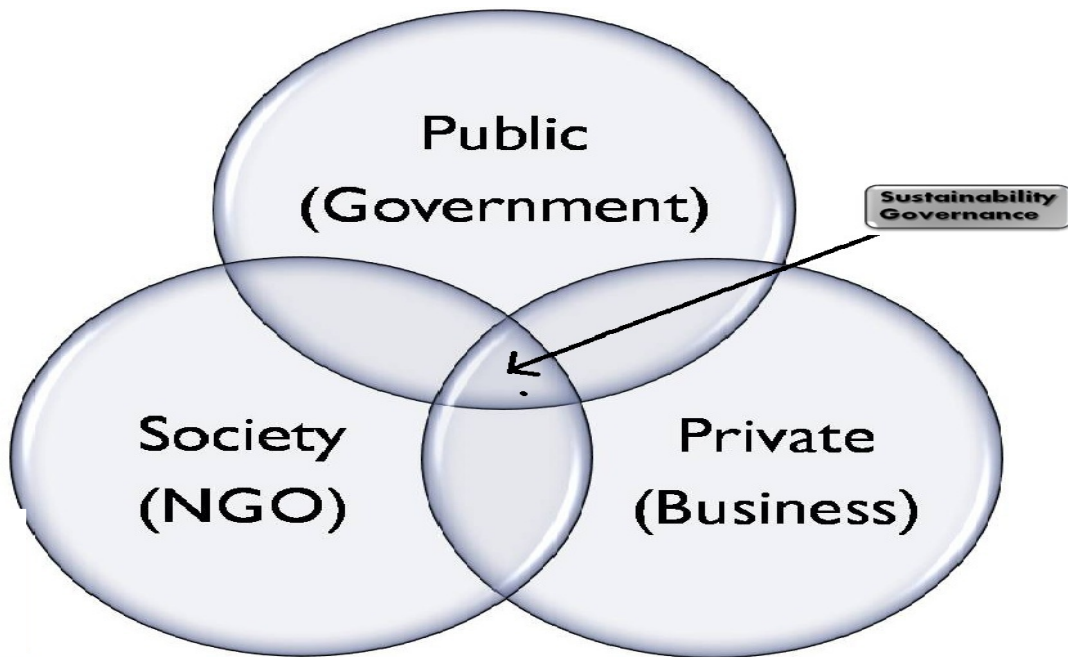
(AMCR). Many studies are still using communication as an independent construct; mediating construct for building a relationship as well as the outcomes of some construct of the relationship. In contrast, the present study analyzed the influence of communication in the agricultural marketing channel relationship (AMCR). Moreover, the consequence of communication as a measurement factor in the agricultural marketing channel relationship (AMCR) will be experienced and explored.

2.6 Sustainability Governance

Sustainability Governance has used as a rising issue for ensuring sustainable performance. Contemporary growth and development of the business have raised the subject matter of sustainability governance regarding the long-term sustainability and mitigation of vulnerabilities throughout monitoring as well as controlling of functional operations in the respective sectors. This deliberation has found the clear evidence from their extensive research projects on this issue. Governance demonstrated the role for increasing the performances and experiences in the organizations and in any other relevant area. It has confirmed that governance produces a competitive advantage for the organization, which minimizes the unpredictability of deployment and development of resources (Sanders & Carpenter, 2003; Smith et al., 2005).

Through extensive literature review, it has been apparent that fundamental concept of governance such as sustainability governance is not unique and common in the ideological phenomenon. According to governance scholars like Kooiman (1993) stated that 'governance' refers to the existing execution of government policy that deals with a diversity of societal factors. In addition, the governance is a method by which organizations are managed and examined through shareholders and other customers (Ashbaugh-Skaife et al., 2006; Gillan, 2006; Premuroso & Bhattacharya, 2007). Again, Kooiman (1993) stated that governance is implicit as an approach to social coordination, unlike governing, guiding, control along in managing society. Furthermore, (Young, 1994) described that governance involves establishing and operating social institutions capable of resolving conflicts, facilitating cooperation and alleviating collective action problems.

Figure 2.3 Sustainability Governance Framework



Sources: *Author compiled from Young (1994)*

The above figure 2.3 represented the sustainability governance framework. This figure demonstrated that sustainability governance is a combination of the triple stages governance mechanism. Where public, private and society highly collaborated in ensuring the new form of governance structure like sustainability governance (Young, 1994).

Through extensive literature review, it has been concluding that sustainability governance refers the governance for a sustainable development i.e. diverse form of monitoring and control over the practical performances of the corporation and society for protecting the environment, social interest and profitability at a balanced level. 'Governance for sustainable development' or 'sustainability governance' is connected regulative systems with the particular purpose of promoting sustainable development. It is a goal-oriented action that appears to reach positive (desired) societal benefits and to avoid other (less promising) social future (Meadowcroft, 1997). But this is not the last state, but a process of continuous social progress, 'governance for sustainable development' is not a movement of resources to appreciate a pre-determined societal

order. Rather, it is about adjusting the structures that control societal connections so that they can encourage positive adaptation.

Moreover, earlier concepts of the governance and 'sustainability governance' manifested different structure of governance (Ashbaugh-Skaife et al., 2006; Gillan, 2006; Premuroso & Bhattacharya, 2007; Young, 1994, and Meadowcroft, Farrell, & Spangenberg, 2005). Those studies framed the two broad formations of the governance, such as government structure (political arrangement) and non-government structure (cooperative arrangement). Cooperative arrangement encompassed corporate (business) and social agencies (non-business) stakeholder's powers, particularly 'buyer power' over the 'supplier' for monitoring and mitigating vulnerability and increasing the resilience on channels of distribution. The government has structured governance for monitoring and controlling any particular system. Unfortunately, this structure did achieve the desired result till now due to lack of integration as well as a pure monitoring system. But, a new form of structure is considered to be the best structure for effective governance. Those earlier studies empirically support the author's to identify and specification of the higher order construct namely, sustainability governance (SUG).

In addition, Kemp et al. (2005) recommended that sustainability governance is measured by the drivers, such as policy integration, common objectives, and incentives for practical implementation and system innovations. Among many others, Dauvergne & Lister (2011) confirmed that sustainability governance (SUG) is measured through specific factors like 'Rise of sustainability' that encompasses (Corporate sustainability, Measurable incremental improvement and accelerating corporate environmentalism); 'Leveraging sustainability for business value' that encapsulated (Eco-efficiency saving, Revenue and markets and supply chain greening); 'Governance power' that including (Supply chain control, partnering for power, guiding governments). Furthermore, Duxbury & Dickinson (2007) showed that four principles are essential like firstly, sustainability that includes several key issues (carrying capacity; risk, vulnerability and resilience; mitigation planning; full-cost accounting; and investment in human and social capital), secondly, adaptive Management, thirdly, stakeholder participation'

finally, integration. Also, Overdevest & Rickenbac (2006) suggested certification for institutional governance of forest. However, all studies reported that factors for measurement of sustainability governance are conceptual and empirical nature. But, professed empirical studies have shown the use of sustainability governance in different industries and in the western region, but directly linked to the dairy industry. So, adaptation has made the measurement of the sustainable governance in the dairy industry in Bangladesh.

2.7 Measurement Constructs (Dimensions) of Sustainability Governance (SUG)

According to the empirical research and development of the theoretical framework, this is a very challenging task to define the measurement constructs of sustainability governance in the context of the dairy industry. But, many previous research works have to make evidenced to logical support the determination and delineation of the measurement constructs of the sustainability governance (SUG). Thus, the following has been summarized in the detail of the measurement construct that reflecting the sustainability governance (SUG) such as **Business sustainability, Integration, Governance power and Financial control.**

2.7.1 Business Sustainability (BUS)

“Business Sustainability” presents the whole effort of an organization to reduce the impact on the Globe and eco-system. The present alarm of the organization is to accomplish the sustainability in the different level of the operations for protecting the planet, people and profit as a whole. Today, organizations are formulating policies, supportive programs, and codes of conducts for implementation of their purpose. The earlier researchers, such as Prakash & Potoski (2006) and Welford (1996) have justified the organizational policies and programs for incorporating environmental reflection into their core operations. Many corporations are classifying sustainability of corporations as well-built indicators in the rise of the business significance of corporate environmentalism (Dauvergne & Lister, 2012). Meanwhile, governance scholars are aware regarding the sustainability issue which supports them for governing as a whole. Among them, corporate sustainability, corporate environmentalism and corporate

consumerism are the key factors to raise sustainability in corporations (Dauvergne & Lister, 2012). Beside them, (Duxbury & Dickinson, 2007) proposed some explanation for achieving sustainability including full-cost accounting.

2.7.1.1 Corporate Sustainability

Corporate sustainability is positively a versatile concept; it covers extended areas of environmental security, social justice, community, friendship and sustainable development in corporate governance. Corporate sustainability is an approach that produces long-term shareholder value by implementing opportunities and administrating risk. Besides, to make a profit, sustainable organizations involve other qualitative, non-financial measures as the indications for their performances, like management quality, corporate governance, reputation, human capital management, stakeholder relationships, environmental fortification and corporate social responsibility.

Since last two decades, corporations have been dedicated to achieving sustainability, particularly largest MNCs strategies are now highly concentrated on the sustainability issues i.e. sustainability strategy. Dauvergne & Lister (2012) stated that largest corporation's adopted corporate environmental goal i.e. zero waste, sourcing maximum renewable energy. Particularly maximum largest MNCs declared the same goals, like McDonald's (make sure the food is provided from certified sustainable sources), Proctor & Gamble (propose products to maximize the conservation of wealth), Unilever (decouple expansion from environmental impact), Johnson & Johnson (strategic plan to help preserve the health of the planet and people) etc.

2.7.1.2 Corporate environmentalism

Corporate environmentalism is a movement introduced in the twenty centuries and is highly accredited by the American in the 1970s. It is extremely participatory and organizational field, where corporate decisions are supported by environmental safeguards in protections. Corporate movement for the environment is now a fashion for preserving sustainable safeguard in the business operations. Corporate environmentalism refers that a firm is not examined in isolation from its environment

and it is a multi-tiered analysis. Corporate environmentalism is a management perception and a practice which firms incorporate environmental concerns into their decision-making process. Now, it looks forward to having a business decision making with 360-degree evaluation of the present environment and its vulnerabilities. Major reasons of corporate environmentalism bring market growth and economic opportunities. Besides this, many recent corporate decisions highlighted such as (Accenture, 2010; AT Kearney, 2009; McKinsey and Company, 2011; Boston Consulting Group, 2011; Nike, 2009) c.f (Dauvergne & Listert, 2012), advocacy campaigns and NGO partnerships are playing important role for increasing the concern and involvement of environmentalism. As a result, consumers require increasing public consciousness, employee concentration, and new environmental legislation which has been raised the pressure for corporate environmentalism (Dauvergne & Listert, 2012).

In addition, McKinsey & Company (2011) addressed that larger organizations are incorporating sustainability as a tactical instrument to achieve well-established goals such as cost reduction, greater efficiencies, increasing revenue and expanding market share as well as size, moderating supply chain productivity and enhancing corporate performances. It has also become an integral part of the corporations, including agricultural and industrial product. After a comprehensive research on the concept of corporate environmentalism and the importance of these issues, maximum organizations have been considering the multi-phased investment for environmentalism aspect. Many earlier pedantic and sagacious research, like (Accenture, 2010; Nike, 2009; Boston Consulting Group survey, 2011) explored that organizations are now interested in investing resources for environmentalism and taking environmentalism are a competitive strategy for the long-term success of the business and achieving business goals in a sustainable way.

2.7.1.3 Corporate Consumerism

Corporate consumerism is a sub-dimensional aspect that supports to reflect the business sustainability. This dimension focused on corporate attempts for consumer rights protection and actions as a consumer value partners regarding the consumer rights. Sustainability encourages for an equal benefit and performances that characterize the

customer's value formation with the financial development of organizations. There has been a long history about the customer's demand regarding their rights and power over the organization. Under this flag, it has introduced consumer rights approved by the President of USA. But, this movement is not stopped, but growing over the time regarding the contemporary issues of social and environmental sustainability. In addition, Dauvergne & Listert (2012) addressed that consumerism has grown rapidly for greening efforts and the benefits of greening are dropping the per unit energy, material, water, chemical, carbon and waste impacts on many consumer goods. By responding to the consumerist organization took different initiatives to ensure the social and environmental sustainability, such as dropping packaging, circumventing chemicals, improving energy efficiency, rising renewable energy uses, and so forth (Dauvergne & Listert, 2012).

Moreover, earlier studies incorporated many relevant examples regarding the measurable incremental improvements i.e. corporate consumerism. For examples, Tesco and Unilever to divert 100% of their waste from landfill. In addition, Coke has built the largest recycling plant in North America and has similar plans for Europe. Wal-Mart has turned into the major private solar power manufacturer in the United States and the largest global buyer and seller of natural products. Those applications were supported to substantiate the present business which has been running as the sustainability vision. These initiatives have motivated the author to justify corporate consumerism as a sub-dimension of business sustainability (BUS) for measuring sustainability governance (SUG).

2.7.2 Integration (INTN)

Sustainability does not prove the result of any individual performance, but it can be achieved with a combination of many stakeholders and strategies including adaptive management and stakeholder participation. Integration is a combined result of the subjects or issues that represent a standard form of performance and experiences. It has been supported by the empirical and earlier studies, like (Knecht & Archer, 1993). According to Knecht & Archer (1993) integration emphasizes an interdisciplinary and comprehensive approach of management that includes science, engineering, economics,

institutional/political, legal, and social/cultural considerations which are related to the management activities within sustainability.

In addition, integration does not only represent policy integration but also integrate the non-policy issues or resources. It has evaluated as strategic benefits and competitive advantage for the adaptive organizations. Further, integration encapsulates the mixing of interdisciplinary knowledge and multiple interested group association for formulating the policies and program that improved the whole of the governance system. Meanwhile, Kemp et al. (2005) demonstrated that policy integration is the coordination of national policies and the matching as well as balancing positions initiated by the other governance actors. Hence, there are two fundamental dimensions, namely adaptive management and customer participations to measure the integration that supports to examining the position of the sustainability governance for the agricultural sector like the dairy industry over the period of time.

2.7.2.1 Adaptive Management

The perception of adaptive management was first introduced in the Brundtland Report in 1970 (Duxbury & Dickinson, 2007). This is a key sub- dimension to achieve sustainability governance that ensures better opportunities for all levels of government to make decisions. Adaptive management frameworks convey multiple ranges of knowledge which is required to have the flexibility of making decisions regarding sustainability, and collection of both skilled and trained personnel is considered necessary for decision-making process at different levels of governance (local, regional, state) (Mendis et al., 2003). Multi skilled and flexible decisions add to competitive advantage to the customers in functional level of their performances. It refers to the integration of different knowledge to support better governance. Earlier research, e.g Holling, (1978) delineated that adaptive management reflects the integration and sustainability governance. Also, Mendis et al. (2003) explored that adaptive management can be reduced the uncertainties regarding the operations and administration for supporting the organization to enlist their name in the book of success.

Furthermore, empirical knowledge substantiated the advantages of adaptive management regarding the better integration. Adaptive management is the ability to concentrate on social ideas that facilitate a form of management focused on operational and flexible (Dietz et al., 2003; Olsson et al., 2004; Folke, 2006). Those studies, have justified the necessities of adaptive management to make sure a suitable integration, which is highly capable of monitoring overall governance flows and system. A suitable integration may be placed as a motivational dimension of sustainability governance (SUG) in the business or non- business world that highly capable of representing the measurement constructs integration.

2.7.2.2 Stakeholder participation

Stakeholder participation and the incorporation of stakeholder has been identified as an expected goal in attaining sustainability (Gregory & Wellman, 2001). Beside this, it seems that the compensation of multi-faced involvement covers the way to an easy circulation of informing, linking and educating the public; improves simplicity in decision-making, and declare the situation of incorporation. In addition, Davos (1998) recommended that sustainability policies constructed for execution of the policy. This participation focused on the voluntary contribution of customers, who have divergent priorities and interests. In addition, stakeholders' participation can be ensured the dissemination of information to educate customers (Gregory and Wellman, 2001). Further, Brown (2002) and Davos (1998) recommend that participation involves both power and knowledge between customers, which empowered the local people to influence policymakers and executors of decisions. In addition, (Young, 1994) study exposed that sustainability governance (SUG) model enlightened the nature of the customer's participations for reflecting integration. This study explored the sustainability governance demonstrated by the governance systems where all kinds of people will be able to participate to ensure the governance and development of the policies that are substantial and logical for the sustainable development of society. Moreover, many governance researchers, like Abbott (2012) substantiated the process and methods of participation as well as the benefits of customer's participations for reflecting the integration and measurement the level of sustainability governance.

For justifying the significance of integration on sustainability governance the earlier study (OECD, 2002) recommended that sustainability requires policy integration, along with improved interaction between government and non-government institutions through creating a long- term prospect of the government. This study also demonstrated the opinion regarding the difficulties of a process for integration of policies. The unwillingness of state government makes an obstacle to the full integration of policy, but significant gains can be made through effective policy integration. So, the present study points out some suggestions for effective integration such vertical and horizontal integration.

2.7.3 Governance power (GPOW)

Organizations converted the idea of sustainability into business value and integrated all marketing channel decisions and policies for decreasing vulnerability, cost competence, better product quality, and enhancement of overall business performances (Dauvergne & Listert, 2011). Thus, marketing channel or chain controls and governance power are important for playing the role as a dominator or leaders in the value chain and marketing channel. Organizations' gaining legitimacy and influence of government (Public) and NGO (Civil Society) that is important for handling the environmental change and altering the power for the decision making about the global production and governances. Moreover, Dauvergne & Listert (2011) recommended three contemplations for measuring the governance power in the channel, such as marketing chain control, partnering for power, and guiding government.

2.7.3.1 Marketing channel control

The marketing channel can offer unrivaled power to form international environmental change. Organizations mostly used governance power to compress suppliers to reduce costs. This helps to maintain lower retail prices. But it also pushes manufacturers to reduce environmental and social standards to meet up low-cost demands. According to marketing wisdom, cost minimization may increase customer value without changing the product benefits. This academic knowledge supported the managers and professionals to develop the marketing channel control over the total marketing system. In addition, marketing channel control recognized the disadvantages in terms of

increased risk, corporate sustainability programs for establishing rules, supervision, and closer relationships with their suppliers to keep manufacturing costs downward through eco-efficiencies helping to guarantee high-quality dependable output.

In addition, Dauvergne & Listert (2011) endorsed that comprehensive evaluation of significant form of control systems in the diverse industries over the globe. Such as Nestle', worked for 10 years with local coffee farmers to make sure the minimum irrigation and less use of chemicals and circumvent clearance rainforest, to progress coffee bean crop yields and quality. Wal-Mart has recently made compulsory to its 100,000 suppliers to cut their carbon footprint by 20 million tons by the end of 2015. These earlier investigative studies were capable of substantiating the contribution of the factors, namely marketing channel control for reflecting the governance power. Those earlier studies have supported to formulate the marketing channel control as a measurement of sub-construct of sustainability governance.

2.7.3.2 Partnership for power

People think 'power' as a tool for completing goals that employed by others. In today's world, system and a set of connections turn into a significant source of relevant power. Power delegation among the partners is compulsory for ensuring balanced performance. Dauvergne & Listert (2011) has addressed that large corporations have emphasized on accommodating networks and building connection among customers to attain their targeted goals. In addition, these studies also focused that larger organizations are collaborating with a broader organization (public, private and civil society) to assist and enhance the viability, usefulness, authenticity, and recognition of their corporate sustainability and business growth efforts. In these associations involve different partners like activist groups, buyer networks, business councils, eco-certification bodies that increased the power of corporation over the suppliers and channel members. Moreover, some activists consistently resist them, arguing on the changing precedence's and approaches, leaving NGOs content in attaining increment before a fundamental change to the nature of an unsustainable growth-dependent world economy. For larger organizations, these partnerships often provide credibility: strengthen the power and authority to implement a global system for attaining

sustainable business value (Dauvergne & Listert, 2011). In addition, many earlier studies, like Environmental Defense Fund (2011) and Nye (2011) focused on the requirement of customer's partnership for balance powers to reflect the governance power as the sub-dimensions of sustainability governance as a whole. These earlier studies enhance the choice of partner for power as a factor which reflecting the governance power and sustainability governance.

2.7.3.3 Guide governments

Corporate sustainability enhances the supremacy and reliability of governments, which are projected to influence the modern shape of private governance to move forward with the policy of business performances (Dauvergne & Listert, 2011). Furthermore, earlier studies, like Jordan et al. (2003) addressed that in 1970's governments and administrations have focused on developing the effectiveness of policy and program and made the decision for public sector restructuring and the development of market-based mechanisms. In specific cases, governments take the initiative of officially handing over the power to self-regulate the accounting, financial, health, and media sectors. However, governments have taken initiative for growing integrity and approving leveraging by policy enhancement.

In addition, many examples were included special research papers for substantiating the present situation in regards the subject to matters. Many suitable examples were adapted by Dauvergne & Listert (2011) such as, where the federal government is unsuccessful in controlling the toxic materials fully; Wal-Mart's initiatives of controlling the toxic materials filled the regulatory gaps were successful. Without any authoritative pressures, Wal-Mart is now testing their own product to ensure that they are toxic free. This is a great initiative taken by Wal-Mart to protect children and families from experiencing toxic chemicals (quoted in Layton, 2011). Meanwhile, governments in North America and Europe have permitted private sustainability programs, like forest certification for their own company and made it compulsory to develop public awareness and market appreciation to state forest management (Cashore et al., 2004; Gulbrandsen, 2010; Lister, 2011). They have also integrated private

certification programs for public organization procurement requirements. Moreover, governments have collaborated with larger organizations to ensure the sustainability.

2.7.4 Financial Control (FC)

Encouragement for the implementation of sustainable development policies, such as motivational incentive is highly important measurements of sustainability governance. The motivational incentive is delineated to provide accurate and right time information to the customers and market- based amenities for pragmatic execution of the sustainability objectives. By the investigation of earlier relevant empirical studies, this has been apparent that sustainability governance needs multiple levels of means for guiding the policy actions. Kemp et al. (2005) addressed the motivational instruments like tax reform regulations, procurement rules, liability laws, education programs, product labeling, tenure arrangements, power-sharing processes, and many the combined, as well as other alternative incentives, are supposed to ensure the controlling or guiding the sustainability governance. In addition, motivational incentives play the significant role in the governance of sustainability (Overdevest & Rickenbach, 2006). Also, Overdevest & Rickenbach (2006) addressed that market-based incentive for improving governance of sustainability. Besides, this concept has been empirically supported by other governance research, e.g. Cashore et al. (2004).

2.7.4.1 Full-cost Accounting

To attain sustainability in particular sectors different types of tasks should be incorporated in environmental responsibility and full-cost accounting (Gaddis et al., 2007). The empirical ideas regarding the term ‘Full-cost of accounting’ is very limited and not matures one yet. But, some specific research, like Bagstad et al. (2007) explained that ‘full-cost accounting’ is an endeavor to assert the costs and benefits related to the utilization of ecosystems and resources to the related parties. This study also, highlighted that it may be realized by the using of different means, like taxes, incentives that are suitable in context to economy and industry. Economic instruments can be continued to promote the changes in behavior and can facilitate to manage external costs, spoiling the environment and influencing the companies to achieve economic goals at a minimal cost (Sorenson, 1997). Furthermore, Sorenson (1997)

recommended that economic-instrumental tool consist of eco-taxes, like polluters pay taxes per unit of pollution in proportion to the social costs incurred. This study also addressed that subsidies given to the companies for producing or using products that are less harmful to the environment. Also, apply the rights-based instruments limited rights to use or pollute environmental resources and government tax incentives for encouraging investment in environmentally friendly projects and environmental bonding to cover any environment deficiency associated with their activities (Costanza et al., 1998). These sub-dimensions have logically highlighted the importance of the financial control which reflecting the sustainability governance, particularly for the dairy industry in Bangladesh.

The previous examinations partially substantiated that business sustainability, integration, governance power and financial control as the measurement constructs of sustainable governance, but none has justified the measurement constructs of sustainability governance (SUG) at all for sample industry in the context of the sample country. Those studies evaluated and justified the sustainability governance (SUG) mediating the construct that extends the performance of any organizations. So, previous research findings corresponding to the present issues, like dimensions those are reflecting the sustainability governance (SUG) as a whole. But, how those dimensions have been influenced the sustainability governance (SUG) is still relatively unexplored.

Thus, researchers have determined the position of measurement constructs, like business sustainability, integration, governance power and financial control with sustainability governance (SUG). Finally, the current study has analyzed the influence of business sustainability, integration, governance power and financial control with sustainability governance (SUG). Moreover, the effect of the measurement constructs of sustainability governance (SUG) will be examined and explored in the current study.

2.8 Mediating Effect of Sustainability Governance (SUG) between Agricultural Marketing channel relationship (AMCR) and Sustainable performance (SUP)

The mediating role of the sustainability governance (SUG) in between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) was

indirectly asserted by the earlier studies. As stated earlier, the empirical justifications and research contributions regarding the sustainability governance (SUG) is a newborn concept. The specific statement regarding the mediating effect of sustainability governance (SUG) has not been found yet directly. But, the effects of the sustainability governance (SUG) have been supported by the many pedantic research works indirectly.

The context of the mediating effect of sustainable governance (SUG) was asserted by empirical studies, like (Sundaramurthy, 1996). The study of Sundaramurthy (1996) explained that the good governance mechanism is essential for rightly deploying the financially viable income of a farm and making right the quality of resource consumption decisions. Therefore, governance can effectively facilitate marketing managers' capability to make economic value-maximizing deployments by reducing diversions that lead to an inefficient marketing capability. In addition, Bhagat & Bolton (2008) and Gompers et al. (2003) confirmed that sustainability governance (SUG) increases the monitoring and control of business activities, through improving the overall organizational performance. Another study found which partially recognized the earlier concept of sustainability governance like (Core et al., 2006).

Moreover, (Core et al., 2006) told that better monitoring and controlling support positively to the opportunism and protect organizations' inducements to share knowledge and confidently pooling their capabilities with managerial key persons or decision makers. In addition, according to (Overdevest & Rickenbach, 2006) market-based mechanism also accelerates the economic performance of the organization, which substantially improves the pathway to social and environmental performance equally. Meanwhile, this study also highlighted the signaling mechanism which recommends the character of the organization that creates extra reputation to the customers. That study also addressed that learning mechanisms such as sharing of knowledge and information may ensure the sustainable performance (SUP). Those earlier studies were made the shade of evidence relating to mediating effect sustainability governance (SUG) on the sustainable performance (SUP).

Direct empirical research support has not available on the subject of the current study and some other related research in the context of the agricultural marketing particularly the dairy industry. But indirectly the literature has supported the justification of construct validity in the literal framework. According to Dyer & Singh (1998) successful business relationships may reduce environmental uncertainty; facilitating the access to fundamental resources; enhance to advance the business productivity. The agricultural marketing channel relationship (AMCR) may sustain to more proficient and additional effective business activities; a higher level of technical interaction in the form of information exchange, prospective product adpatation, and technical assistance etc. That integrated literature indirectly links up a relationship among the channel members and increase the cooperation, commitment, trust and power have increased among them. This relationship supports the integration of policy, sets a mutual goal, offer motivational incentives and knowledge sharing, which are proofed as the essential elements of sustainability governance.

The earlier studies explained and supported the partial link between of marketing channel relationship (AMCR) on sustainability governance (SUG) and the link association's sustainability governance (SUG) on sustainable performances (SUP). But, as per researcher best knowledge they did not find any empirical research to substantiate the direct mediating role of SUG in between AMCR and SUP. There has been no direct mediating relationship among these in the empirical research on the subject of current research and the effect partially and literature support was not consistent. Thus, insufficient, inconsistent and insignificant findings of the mediating effect of sustainability governance (SUG) in between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) require further investigation.

2.9 Environmental Uncertainty

Uncertainty is a multidimensional construct, in the environmental context (Pinkse, 2007; Mitchell & Saren, 2008). The perception of uncertainty is not unique and simple justifications to the researchers and professionals. But, previous studies focused on the analogous issues to address the term 'uncertain'. Among them, Galbraith (1973) demonstrated "uncertainty" as the difference between the required information and now

obsessed information about the organization. Milliken (1987) stated that uncertainty is the unpredictability of an environment, the incapability to anticipate the power of environmental change, and the lack of ability to expect the result of a choice response. This study also delineated uncertainty with three diverse dimensions like state uncertainty, effect uncertainty, and response uncertainty, respectively. In addition, Miliken (1987) also asserted that environmental uncertainty is a matter of an individual's lack of ability to the forecast environment correctly due to lack of sufficient pertinent and inappropriate data. Furthermore, Duncan (1972) recommended that environmental uncertainty is the consequence of the three circumstances, e.g. shortage of information regarding environmental factors related to managerial decision-making; an aptitude to allocate the possibility correctly with regard to how environmental issues will influence the achievement or success of a decision; and the shortage of information regarding the costs is attached to wrong conclusions or actions.

Furthermore, philosophers described environmental uncertainty as a concept having similar to unpredictability. Many other authors have defined environmental complication as interdependence among organizations' decisions (Levinthal, 1997; Pettigrew et al., 2003); when one depends on others' decisions, the future becomes difficult to predict and remains uncertain (Bowman and Hurry, 1993; Siggelkow & Rivkin, 2005). Many researchers, like (Sutcliffe & Zaheer, 1998) have concerned that uncertainty is a multifaceted construct and addressed the sources of uncertainty like customers, suppliers, competitors, distributors, regulatory factors, union issues, technology, and so forth. Among these sources, technology and markets are the two best-known sources of uncertainty for organizations (Chen, Reilly, & Lynn, 2005).

In the agricultural marketing paradigm such as the dairy industry the features and sources of the environmental uncertainty have been found diversified on the basis of the geographical matter. The sources of uncertainty in the agricultural sector are different due to the fragility of the product, variable harvest and production yield and environmental change. These uncertainty sources are more analogous with general sources of uncertainty, i.e. supply, demand and distribution, process, as well as planning and control (Van der Vorst, 2000). This study highlighted these two sources

of environmental uncertainty which are a contemporary issue for the agricultural industry.

2.10 Measurement Constructs (Dimensions) of Environmental Uncertainty (EU)

Determination of the measurement constructs of the environmental uncertainty was challenging task to the researchers and professional. As regards to the extensive earlier studies, this study considered only five measurement constructs of environmental uncertainty i.e. demand uncertainty, supply uncertainty, competitor uncertainty, government policy uncertainty and climate uncertainty, which have been empirically supported by renown research articles such as (Chen, Reilly, & Lynn, 2005; Badri, Davis & Davis, 2000; Van der Vorst, 2000; Paulraj & Chen, 2007). On the other hand, process uncertainty; planning and control uncertainty, market uncertainty and technological uncertainty have not been considered in this research on the ground that those dimensions were significant in the specific industry. But in the dairy industry, particularly in the subject to study application of those dimensions found a very poor association, this ground has motivated the authors' to ignore those dimensions. The details of the each uncertainty dimensions are discussed in the next subsections.

2.10.1 Demand Uncertainty (DU)

Demand uncertainty is the extent of the change and unpredictability of the customers' demands and tastes (Li, 2002). It refers to the uncertainty of customer requirements in regard to quantity, product types and time (Childerhouse & Towill, 2004). The change of demand can generate the swings of capacity, resources and inventory (Wilding, 1998). Sufficient information has improved the customer's ability and creates conditions which ameliorate the existing situation (Bolton & Dwyer, 2003; Fawcett, 2007). The unpredictability of customer choice puts stress on the decision-making process and volatility production planning (Childerhouse & Towill, 2008).

In addition, demand uncertainty in the agricultural industry like in the dairy industry also found. In addition, Taylor & Fearne, (2006) stated demand typically change each day of the week: low on a weekday and higher on the weekend day (Van der Varst,

2000; Fawcett, 2007). In the dairy industry demand of liquid milk in the market has fluctuated in the rainy seasons and harvesting time to local fruits like Mango, Pineapples, and Jackfruits etc. and raised in the month of holy Ramadan (Babu, 2016).

2.10.2 Supply Uncertainty (SU)

Supply uncertainty refers to the degree of change and unpredictability of suppliers, product quality and delivery performance (Li, 2002). Supply is highly associated with the delivery of raw materials in time in the right amount (Van der Vorst, 2000). Uncertainty of the quantity, quality (Davis, 1993; Childerhouse & Towill, 2004) happens only for suppliers low performance (Davis, 1993) may be the causes of slow production line, even stop production (Skin, Collier & Wilson, 2000; Li, 2002) and face risk for order back (Davis, 1993) as a result increase the production cost and organization lag behind its competitors (Skin, Collier & Wilson, 2000).

Moreover, in agricultural industry supply or production depends on the uncontrollable natural forces and environmental concerns, including droughts, floods, and environmental concerns (Wijnands & Ondersteijn, 2006). Supply can fluctuate dramatically in each crop season, complicating the management of inventory planning and control (Hsiao, van der Vorst & Omta, 2006). Practically in Bangladesh, the dairy industry has faced numerous supply uncertainties at the operational level. Such as, sufficient levels of grassland, the quality level of animal foods, quality medicine, and modern technology of the dairy farmers.

2.10.3 Competitor Uncertainty (CU)

Competitor means persons or organizations that offer the same value in the same segment of the market in a particular time. Many empirical research justifications have supported the concept of the competitor uncertainty, e.g. Li (2002) stated that competitor uncertainty refers to the unpredictability of competitor actions, such as reducing product price and supply market or increasing product quality and variety. The competitor is a crucial external factor that can be introduced at perceiving environmental uncertainty of organizations, harming their performance (Duncan,

1972). Thus, competitor analysis was developed to reveal competitors' behaviors and strategies to support the implementation of sustainable competition. In addition, Proter (1980) asserted that competitors' behaviors and strategies have the potential to change an industry; this technique can presage the adverse effect of vague competitor behaviors. In addition, Heiens (2000) focused on the component of market orientation that can improve the market share when competition intense and customers bargaining power have developed, this concept indirectly supported many others scholars like (Slater & Narver, 1994; Han, Kim & Srivastava, 1998). Competition in either international or local case may change the transformation of technology and force intense competitions to take unpredictable actions to gain a higher market share (Mentzer, Min & Zacharia, 2000). Those actions have both direct and indirect effects on the business performance of organizations (Min & Mentzer, 2000). Thus, competitor behavior is considered as an important uncertainty factor in the business and sustainable performance.

Beside this generic site, in the agricultural industry like the dairy industry has strong international and local competition in the market, like export subsidies provided by the EU (European Union). Previous researchers addressed a few factors that contribute to this intensely competitive market. Moreover, WTO, (2000) and others have provided support for this statement, directly and indirectly, like (Sun, Wan & Li, 2007; Jayne, 1993; Nielsen, 2002; David and Huang, 1996).

2.10.4 Government Policy Uncertainty (GU)

Policy refers to the guideline to achieve the organizational goals and objectives. Earlier management literature has supported this definition. The government policy for specific sector means that the government sets some principles to attain the targeted goal of this sector. It has observed that government policy is a supplementary source of uncertainty. It is developed based on the opinion of sagacious research scholars, which is compiled in this literature review section of this study. Through extensive literature review, it has been experiencing that in the developing and underdeveloped countries, government policies cannot be predicted to stakeholders e.g. (Badir, Davis & Davis, 2000). In addition, this, Badir et al. (2000) stated that political factors, like laws, regulations and

government secretarial actions and policies influence the farm profitability, margins by changing their cost or revenues and introducing uncertainty into the organization and the supply chain. Also, Marcus (1981) asserted that government rules and regulations can present both benefits and risks of business. However, governments' influence of regional development in the agricultural production and their approaches have changed remarkably over the years (Crosthwaite, 2004), unpredictable government policy hurts the economic performance (Mendoza & Farris, 1992).

In addition, government policy uncertainty has influenced the performances and makes the pressures for changing the existing mindset and adoption of different new and moderate strategies in the agricultural industry like many other generic industries. Including the United Nation (UN) i.e. FAO and other national and international mentionable bundle of academic and professional agencies have supported this observation e.g (World Bank, 2009; UNDP, 1997; UN, 2010; IRRIS, 2007; Von & Bos, 2005; Goletti and Minot, 1997; Clarkson & Kulkarni, 2011; Nielsen, 2002; Roumasset & Setboonsarng, 1988; Yao, 1997; Yao, 1999).

2.10.5 Climate Uncertainty (CLU)

Climate has been introduced as a source of uncertainty in business, which directly and indirectly influences the performances of an organization. Previous research studies have explored evidence on the supports of climatic behaviors, but those examinations have not provided sufficient academic justifications in regards subjective issue. In addition, Cruz et al. (2007) recommended that climate uncertainty means unpredictability of serious weather events such as flood, drought, others natural disasters, which can lead to a change of performance of farms. Also, environmental uncertainty explained the difficulty in making perfect forecasts regarding the future (Achrol and Stern 1988). Climate uncertainty is highly concentrated and manipulated matter in the agricultural industry and agri-business area. The earlier literature clearly showed that weather conditions have diverse effect – direct and indirect on production (Hodges. 1991; Peter, 1991; Darwin et al., 1995; Hoogenboom, 2000; Ogallo,, Boulahya & Keane, 2000). Prior studies have justified that climate change has significant pressures on the socio-economic and political status of Bangladesh.

However, it has active and unhelpful involvement in the achievement of agricultural growth like crop cultivation, dairy farming, forestation, fishing, etc.

Additionally, a number of empirical researchers like Siemes (2008) and FAO (2006) mentioned that the dairy industry has been affected by the climate situation regularly. As well, FAO (2006) demonstrated that dairy farming has multilevel roles in the climate change as a victim and the cause of the result. This study also found that the dairy produces emits of greenhouse gasses (GHGs) particularly methane, that has a contributory record on climate change. Further, FAO (2006) confirmed that the livestock sector is responsible for 18 percent of total anthropogenic GHG emissions measured in carbon dioxide (CO₂) equivalent. Among those, total dairy production relations for 4 percent of the total global anthropogenic GHG emissions (FAO, 2010).

In South Asia, dairy farming generates the largest share of emissions, combining large production of milk with relatively high emission per kg of milk. By contrast, Western Europe is ranked in the third place for its share of global emissions, even though it is the largest producer of milk (FAO, 2010). Dairy farming is a highly vulnerable to climate change caused by escalating the temperature, altering the rainfall pattern and rising sea level. These factors affected feed and water availability, animal health and breeds, and in turn milk production. The impacts of climate change on the performances of dairy farms are decreasing milk production, increase the animal disease risk and finally, reduce the animal welfare. The livestock sector is highly dynamic, and climate change will be an additional factor affect (FAO, 2010) which is unpredictable and uncertain. This literature support that climate uncertainty hinders and make deviates the farm performance from the standard, and today's researchers and professionals should take it into consideration for the sustainable performance in everywhere and particularly in the agricultural industry.

Earlier investigations substantiated that supply uncertainty, demand uncertainty, competitor uncertainty, government policy uncertainty and climate uncertainty as for the measurement constructs of environmental uncertainty (EU), but none has justified the measurement constructs of environmental uncertainty (EU) for the dairy industry in the context of the sample country. This study evaluated and justified environmental

uncertainty (EU) as moderating constructs that extend the performance of any organizations, like the sustainable performance. So, previous research findings corresponding to the present issues like the significance of supply uncertainty, demand uncertainty, competitor uncertainty, government policy uncertainty and climate uncertainty for formatting the environmental uncertainty (EU) as a whole. In spite of the appreciation regarding the contribution of supply uncertainty, demand uncertainty, competitor uncertainty, government policy uncertainty and climate uncertainty with the sustainability, environmental uncertainty (EU), but how it has been influenced environmental uncertainty (EU) is still relatively unexplored.

Thus, the researchers have determined the position measurement constructs, like supply uncertainty, demand uncertainty, competitor uncertainty, government policy uncertainty and climate uncertainty with environmental uncertainty (EU), but they are incapable to incorporating the influences of the environmental uncertainty (EU) in the dairy industry. So, the present study analyzed the influence of supply uncertainty, demand uncertainty, competitor uncertainty, government policy uncertainty and climate uncertainty in the environmental uncertainty (EU). Moreover, the effect of supply uncertainty, demand uncertainty, competitor uncertainty, government policy uncertainty and climate uncertainty as the measurement constructs of the environmental uncertainty (EU) will be examined and explored in this study.

2.11 Moderating Effect of Environmental Uncertainty (EU)

For justification of the moderating effect of environmental uncertainty, the studies have been reviewed many international scholarly research articles (e.g. Tsai & Huang, 2008; Kwaadsteniet et al., 2007; DeSarbo et al., 2005; Badri et al., 2000; Patel, 2011; Verdu et al., 2012; Wang et al., 2011; Chen & Chou, 2009; Bstieler, 2005; Jusoh, 2010; Wang et al., 2011; Swamidass, 1987) and found that significant influence of uncertainty on the organizational performances. In addition, Achrol, Reve & Stern (1983) recommended the relationship between the degree of environmental uncertainty and degree of adoption of crisis management and affiliation approaches for divergence resolution among the customers like channel members. In addition, environmental uncertainty can influence the preference of coordination strategies (Celly & Frazer,

1996). Furthermore, Celly & Frazier (1996) identified the environmental uncertainty creates pressure on a channel member's expectations on the belief of the task environment and make uncertainties about the endurance of encouraging market conditions. Uncertainty in technology, customer, or competitive environments, the farm must be able to accommodate to environmental change (Miller & Friesen, 1978, 1983; Utterback, 1979). Environmental uncertainty may engage an organization to respond more quickly to unanticipated change in order to endure (Lawrence & Lorsch, 1986, 1967; Covin & Slevin, 1989)

While, Swamidass & Newell (1987) explored that the relationship among the flexibility, uncertainty, and performance have been analyzed comprehensively for manufacturing systems. In addition, previous studies, like (Chandler, 1962; Downey and Slocum, 1975; Biggadike, 1979; Miles, Snow, Meyer & Coleman, 1978; Simons, 1987; Govindarajan, 1986; Gupta, 1987) have found an association between strategy and higher levels of environmental uncertainty. Conversely, a defender-type firm was connected with relatively low levels of environmental uncertainty (Miles et al., 1978; Miller, 1988; Miller et al., 1978). In addition, reported that the relationship between supplier partnership and operational cost performance is not strengthened by environmental uncertainty and three-way interaction among the supplier partnership. Many earlier studies showed that uncertainty has affected or influenced the respective dependent and independent variables of the manufacturing and non-manufacturing industry.

Despite the above significant effects of uncertainty in the manufacturing and the non-manufacturing industry, there has been no empirical research support on the effect of environmental uncertainty (EU) on the dairy industry as a whole. Meanwhile, only a few studies conducted for measuring the effect of environmental uncertainty (EU) in the agro- supply chain basically in the agricultural marketing issues. Thus, there has been no considerable empirical support on measuring the effect of environmental uncertainty (EU) between agricultural marketing channel relationship (AMCR); sustainable performance (SUP) as well as sustainability governance (SUG) and sustainable performance (SUP). Therefore, those insufficient and insignificant mixed

findings regarding the effect of the environmental uncertainty (EU) on the organizational performance have to the required further examination.

2.12 Sustainability

Sustainability is the oldest and enduring theory and it has come into approach only in the earlier period. Empirical research, like Pezzey and Toman (2002) mentioned that the concept of sustainability introduced by Thomas Malthus in 1798 focused on sustainability about Britain's rise in population sustainability from a fixed amount of land; in 1865, (1865/1977) thinks sustainability regarding the Britain's ever-increasing energy consumption sustained from a secure supply of coal (Jevons, 1906). In addition, after 1972 many types of research focused on the sustainability issues, such as Meadows et al. (1972) deliberated the sustainability of the total of the industrial revolution that focused on the finiteness of the planet's capacities. By this consecutive trend, in 1974 many researchers have been conducting a study on the issues of sustainability e.g Dasgupta & Heal (1974); Solow (1974); Stiglitz (1974) and Mebratu (1998)), as well as after the 1980s and in 1987 WCED (1987) contributed to the theory of sustainability. Till now, it has been used by the academic scholars, professional and managers in the different issues for ensuring the reasonable growth of the respective their mission.

There has no common perception regarding the concept of sustainability among the scholars and professional fields. The concept of sustainability was not found unique till today from academic scholars and professionals. Furthermore, WCED (1987) described that sustainability delineates the 'meeting the needs of the present without compromising the ability of future generations to meet their own needs' this concept is most common and highly established recognized the concept of sustainability in the world. In addition, sustainability is an issue of renewed focus as the world is facing more and more environmental risk (Srivastava, 1995). It makes an effort to equilibrium construct like the quality of human life in the broadest sense, namely: the economic, social and environmental objectives (OECD, 1997). Sustainability has echoed more brightly to incorporate 'triple bottom lines framework like environmental, social and economic (ESE) aspects (Carter & Rogers, 2008; Elkington 1998, 2004)

Today, organizations have come under mounting pressure to minimizing the impacts of the environment resulting in the production and consumption of goods and services (Roy, 2000). Sustainable business is characterized by its facets to balance 'triple bottom line's (i.e., Profit, planet, and people). Sustainability can be achieved only when social, economic and environmental aspects work jointly to accomplish enduring economic performance and benefits (Styger, 2010). The 'triple bottom line' (TBL) is an accountability framework for organizations to include social and environmental dimensions, besides the economic one (Slaper & Hall, 2011). Hence, sustainability refers to building long-term shareholders' benefits by the embracing the economic, social and environmental development (Dow Jones, 2005).

2.12.1 Sustainable Dairy Industry

The term sustainable dairy industry reflects the sustainable performance of the dairy industry. Sustainable performance has been recognized as a micro perspective matter for the sustainable development of the dairy industry. The word sustainable development has been used in many applications last few years since 1987, after publications Brundtland report. There have many criticisms about the sustainable development research, principally regarding the precise definition and application of the sustainable development. According to Vachon & Mao (2008) many issues have enclosed under the sunshade of sustainable development, such as policies, political systems, corporate citizenship, international trade, social equity/ justice, economic growth/development. This study concentrated triple bottom line framework such as three dimensions of the sustainable development to measure and test the sustainable development of the dairy industry like economic sustainability, social sustainability and environmental sustainability. That sustainability encapsulated under the flag of sustainable performance, which is micro perspective or view of the sustainable development of the dairy industry in Bangladesh.

Accordingly, for sustainable industrial development, it should be focused on issues at the macro level, such as: economic efficiency (innovation, prosperity, and productivity), social equity (poverty, community, health and wellness, human rights) and environmental accountability (climate change, land use, biodiversity) of the whole

industry. Therefore, simply environmental concerns such as reducing raw materials or eliminating hazardous waste are not professional enough to promote sustainable development (Maxwell et al., 2006). It must integrate social networks and create economic value through the system thinking. Some scholars, like Sinclair (2011) defined sustainable development as maintaining the economic advancement or the developing land; Geum & Park (2011) also considered sustainability as seeking long-term survival of the society. Thus, Chou et al., (2012) summarized sustainable development into two levels: first is to establish the property or the value (both tangible and intangible) for human needs as well as to create a harmless and cleaner environment for natural habitats; the second is to run organizations or mechanisms for the long-range planning.

Moreover, the sustainable performance in the agricultural industry has been addressed by the many empirical studies. Among them, FAO (1994) delineated that sustainable development is the management of natural resource in such a way to make sure the achievement and sustained satisfaction of human needs for present and future generations. This sustainable development (in the agriculture, forestry and fisheries sectors) protects land, conserves water, plant and animal genetic resources, and is environmentally non-degrading, technically appropriating, economically viable and socially satisfactory.

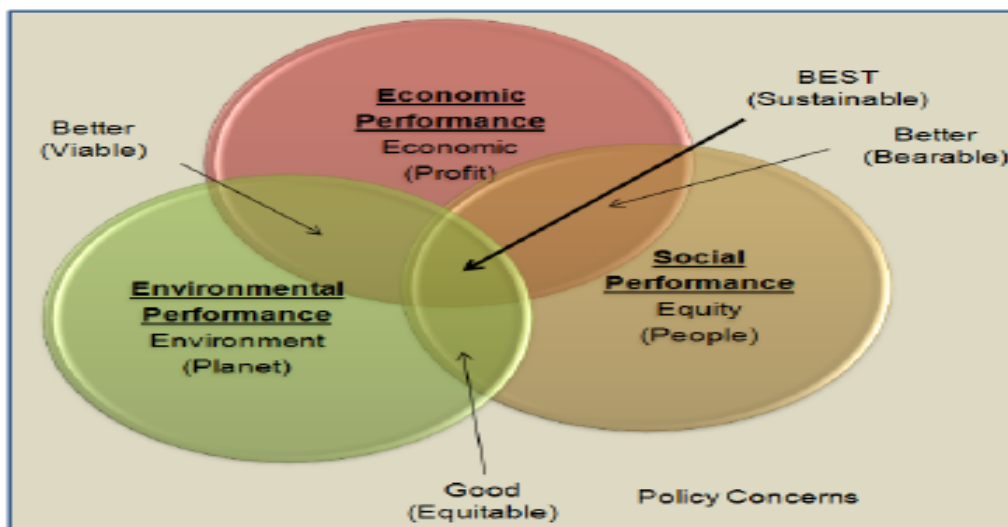
Furthermore, sustainable development delineated the macro level aspects and exhibits development of the whole issue like industry or sector. For attaining, this macro level every organization should contribute to the micro level of sustainable development which is called sustainable performance. When each organization's performance will be sustainable, then particular industry or sector will be sustainable. Hence, after evaluation of empirical studies, it has been concluded that in the organizational level sustainable development of the dairy industry addressed the sustainable performance of the dairy farm with economic sustainability, social sustainability and environmental sustainability that has principally focused as a construct for measurement and testing the sustainable development of the dairy industry in the context of Bangladesh. These measuring constructs have also a focused area of the triple bottom line framework

model of sustainability. As per ‘triple bottom line’ (TBL) context, sustainable performance is to make a balance between economic, environmental and social aspects, which has been recently discussed as the concept of three pillars: profits, planet, and people (Kemp & Martens, 2007).

2.12.2 Triple Bottom Line (TBL) Framework Model of Sustainability

Earlier researchers have built a concept about the historical philosophy regarding the ‘triple bottom line’ in the globe. It is found that ‘triple bottom line’ framework was introduced after World War II, and still now it is used for sustainability measurement all over the world in different industries and the nations. By this time, it has been found that the concept of ‘triple bottom line’ TBL is unique to the philosophers and scholars, but sometimes they found the similar thought that is not like 360-degree encirclement. Triple Bottom Line concept (TBL) concept was first used by Elkington (1994, 2004) and explained the present consideration and balancing economic, environmental and social goals. TBL concept induced the need for an integrated approach that has links to all three pillars (economic, environmental and social pillars) of sustainability. In addition, Sheth, Sethia & Srinivas (2011) concluded that ‘Triple Bottom Line’ of sustainability is the suggestion that measurement of the business result is based on not only economic performance, but also on social and environmental impacts.

Figure 2.4 Sustainability and Triple Bottom Line Model



Source: Author compiled from Carter & Rogers (2008)

Finally, Craig et al. (2008) stated that TBL suggests at the intersection of social, environmental, and economic performance, Sustainability can be achieved when they are addressed in an integrated manner as shown in figure-2.4 as above. An organization can be placed in the happiest or the best position by achieving a win-win solution for economic, environmental and social conditions (Carter & Rogers, 2008). Triple bottom line (TBL) incorporates the three dimensions of performance: social, environmental and financial and is also referred to as three Ps: people, planet, and profit (Elkington, 1994, 2004; “Global Reporting Initiative, 2011). It integrates the balancing the environmental account with the best financial and social accounts (Foran et al., 2005) a society and ecological agreement between community and business (Jackson, Boswell, & Davis, 2011). It also incorporates a closer focus on economic (financial factors), environmental (risk and requirements factors) and social (human factors) issues (Ekwueme, Egbunike, & Onyali, 2013).

In addition, according to earlier studies, it has found that historical record supported the triple bottom line concept to establish and apply in the business, non-profit, and governmental institutions to pull off their objects of the sustainability. Triple bottom line (TBL) subsequently first introduced for solving the of employment problems during World War II. Later, it has been found that wide range of economic investigation of the whole economy and regional scales was possible with it. Moreover, earlier studies endorsed that, TBL is employed for the solutions of national and international complex problems since 1970 to 2002 and till now. For instance, it was first applied for the oil crises in the 1970s, (Bullard & Herendeen, 1975), total living costs (Herendeen et al., 1981), household consumption (Herendeen, 1978a), trade (Herendeen & Bullard, 1976; Herendeen, 1978b), net energy considerations (Herendeen, 1988), and employment effects (Hannon et al., 1975; Herendeen & Sebald, 1975). More recently, the approach has been used to analyze the full chain energy cost of household consumption in the Netherlands (Besiot and Noorman, 1999), the footprint of international trade (Proops et al., 1999), and water use in the Spanish economy (Duarte et al., 2002). In the immediate Australian context of sustainable chain management issues, and others have developed a generalized analytical approach to whole-economy analysis (Lenzen, 2001), energy and greenhouse (Common and Salma,

1992; Lenzen, 1998), water (Lenzen & Foran, 2001), building design (Treolar et al., 2001), ecological footprinting (Lenzen and Murray, 2001), life cycle analysis (Lenzen, 2002), and consumer choice (Lenzen and Dey, 2002) c.f (Foran et al., 2005).

Through consideration of previous studies, it has proved some exploratory evidence on behalf of the application of TBL for ensuring sustainable performance (SUP) that are ultimately related to the subject of the proposed research. Further, Foran et al. (2005) identified that triple bottom line accounting is the widely advanced way, which can realize broader societal objectives for increasing shareholder value.

2.13 Measurement constructs (Dimensions) of Sustainable Performance (SUP)

The Global Reporting Initiative (GRI) is a multi-stakeholder process and independent institution that disseminates the applicable and appropriate ‘sustainability’ reporting guidelines. This guideline is used by organizations for reporting on the economic, environmental, and social measurements of sustainability (Global Reporting Initiative, 2002). Furthermore, FAO (2014) again contributed to the sustainability theory and practices through the development of ten principles for sustainable food value chain, which supported for measuring the performances as well as improving the performance of the agricultural industries. Among them, first three (principle 1-3) principles have developed for measuring the sustainable performance. Except above evidence, many empirical studies have been enclosed supporting by the parallel research findings of the ESE performance measurement of sustainable performance. Those empirical studies have positively supported the present study to consider sustainable performance like (economic sustainability, social sustainability and environmental sustainability) as an integrated aspect. It also addressed the relationship between agricultural marketing relationship (AMCR) as well as sustainability governance (SUG) and sustainable performance (SUP) in terms of economic sustainability, social sustainability and environmental sustainability.

2.13.1 Economic Sustainability (ECS)

The earlier literature of sustainability is based on the triple bottom line, economic performance or economic sustainability. It is a high-ranked variable on the sustainability or sustainable performances structure e. g. (OECD, 1997; Carter and Rogers, 2008; Elkington, 1994, 1998, 2004). In addition, Bartelmus (1999) mentioned that the economic sustainability has focused the long-term preservation of produced and natural capital, income or consumption. The economic sustainability of an organization extends beyond financial and is linked to both the social and environmental dimensions of sustainable development. It is also justifying concerns an organization impacts on the economic circumstances of its customers and on the economic system in terms of direct impacts and indirect impacts (GRI, 2006).

Moreover, many institutions and research houses concentrated their philosophies on economic sustainability measurement indicators or items, such as Economic sustainability refers to profitability, business uncertainty, market requirements, safety and quality, use of new technologies (Vasileiou & Morris, 2006). Economic sustainability: (revenues, operating costs, inventories), lead time and process time, productivity %, spending on local suppliers, investment on local infrastructure (UNMDG, GRI, Rainforest Alliance, UTZ Certified, and the 4C Association). In addition, Economic performance is measured by principle like return on investment (ROI), market share, and profit margin on sales. Also, Kaplan & Norton (1993) mentioned that economic indicators measure the farm performance justifying four perspectives: the customer, internal process, innovation, and financial perspectives.

In addition, FAO (2014) stated economic sustainability: (competitiveness, commercial viability, growth). In the first three principles, only principle-1 is highly supported for measuring economic sustainability. The **‘Principle 1’** has mentioned that sustainable development is economically sustainable I.e. ensuring the sustainability of business development; it starts with the recognition of considerable chance to add economic value. FAO (2014) defined four indicators such as; increased profits by farms; as increased worker wages; as increased value for money for consumers buying for economic sustainability.

By the evaluations of highly accepted sustainable performance indicators addressed by GRI (2002, 2011) economic performance indicator for stakeholder such as sales, the cost of goods sold, profit, wages, tax and subsidiaries etc. Those are details in the Table: -2.1.

2.13.2 Social Sustainability (SOS)

Social performance refers to all management practices contributing both to individual-level human safety and welfare, and societal-level community development. Sagacious research scholars asserted that social sustainability measurement means measuring personal management, relationship with value chain, community and local interests (Vasileiou & Morris, 2006); freedom of association & bargaining, working hour's compliance, wage compliance, labor equity or non-discrimination (UNMDG; GRI, 2002; Rainforest Alliance; UTZ Certified, and 4C Association) quality of life, peace of mind, illness and disease reduction, accident & injury reduction, health and wellness.

In addition, (FAO, 2014) stated that social sustainability (inclusiveness, equitability, social norms, social institutions and organizations), should be upgraded and additional assessment (additional profits and wage incomes in particular) to benefit the huge numbers of poor households. Hence, every stakeholder (farmers and processors, young and old, women and men etc.) should feel that they receive their fair share (win-win), and there are no social objection- able practices such as unhealthy work conditions, child labour, and mistreatment of animals or violations of strong cultural traditions. Unless this is the case, the model will not be sustainable in the medium term.

According to earlier discussions, **‘Principle-2’** stated ‘sustainable development is socially sustainable’ (FAO, 2014). Furthermore, FAO (2014) suggested four indicators, such as the first indicators is the number of smallholder benefit i.e. that see their profits increase.; the second indicator is the number and quality of jobs i.e. jobs include not only wage labour, but also jobs further downstream and even jobs in those in manufacturing industries that benefit most from the spillover effects of increased income; the third indicator relates to the improved functionality of marketing channel; the fourth indicator is associated less directly with nature, refers to the use of the social

objectives of the additional tax income generated by marketing channel. Tax revenues can be used to fund or subsidize transition support programs to assist those households that are excluded from marketing channel.

Additionally, GRI (2002, 2011) explored a few categories of indicators for measuring the social performance of the customers. From the amount of huge basket, only core indicators are attended and highly supported for measuring the social performance of the customers related to agricultural industry particularly the dairy industry. Among the list of dimensions guided by GRI (2002, 2011) following sub-dimensions have enlisted as viz: employment, labour management relationship, worker health and safety, training and education, non-discrimination, community, corruption and customer health and safety etc and those are details in the Table:- 2.1.

2.13.3 Environmental Sustainability (ENS)

Previous research contribution has proved that environmental sustainability is assessed by several measurement scales, e.g. (Maxwell et al. 2006). In terms of environmental sustainability create additional value without permanently depleting natural resources like water, soil, air, flora, fauna etc. (FAO, 2014). Many other researchers suggested that environmental performance is assessed through assessment of climate, land and soil quality, water for irrigation, natural resource management, environmental risk (Vasileiou and Morris, 2006); Carbon footprint, water usage, water and solid discharges, energy consumption (UNMDG, GRI, Rainforest Alliance, UTZ Certified, and the 4C Association); Material consumption, energy consumption, local impact, regional impact and global impact on water, soil, air, flora, fauna (FAO, 2014).

As mentioned earlier, sustainability **‘Principle- 3’** states that ‘Sustainable development is reflected by environmentally sustainable’. i.e. sustainability depends on minimizing the negative impacts on the non-renewable natural resources on which the Agri-food system critically depends (FAO, 2014). Besides this, FAO (2014) suggested that greater degree of operational control is needed for reducing the risks of dependency and minimizing the environmental footprint. This can be achieved by adopting improved

practices (e.g. conservation agriculture) and various forms of upgrading (e.g. irrigation, greenhouses, contract farming and public infrastructure).

Table 2.1 Sustainability Measurement Indicators

Indicator and Sub- Indicators	GRI	Indicator and Sub- Indicators	GRI
<i>Social factors</i>		<i>Environmental factors</i>	
Health and safety	Y	Air pollution	Y
Remuneration	Y	Quantity of water consumption	Y
Equal wage/no wage discrimination	Y	Disposing of pollutants (chemical waste, solid waste)	Y
Training and development	Y	Compliance with environmental legislation	Y
Job creation	Y	Performance of suppliers regarding the environmental issues	Y
Freedom of association	Y	Environmental impact on products	Y
Forced labour	Y	Environmental certification.	Y
Child labour	Y	<i>Economic factors</i>	
Employee turnover	Y	Sales	Y
Impact on community	Y	Cost of goods	Y
Customer health and safety	Y	Wages	Y
Absenteeism	Y	Net income before Tax (Profit)	Y
Child labour in the chain	Y	Tax	Y
Forced labour in the chain	Y	Return on investment (ROI)	Y
Compliance with health, safety and human rights of the suppliers.	Y	Subsidiaries	Y

Source: Author compiled from GRI (2002, 2011)

This study further identified various elements of environmental footprint includes: its carbon footprint, e.g. carbon emissions from energy used in the manufacture of fertilizer and for transport; its water footprint, i.e. how much water is being used in the production and processing of food; its impact on soil conservation, e.g. the depletion of nutrients and the limited availability of arable land; its impact on biodiversity, e.g. loss of natural habitats and the risks associated with large-scale monoculture; food waste and losses, and the associated complex links to profitability, consumer preference and packaging; and release of toxins into the environment, i.e. poisonous materials released into air, soil or water bodies at any stage operations.

Meanwhile, GRI (2002, 2011) stated that environmental performance indicators are categorised on the diverse aspects such as; material, energy, water use, biodiversity,

emission & waste and transportation for measuring environmental sustainability in the particular industry and these indicators have detailed in the Table:-2.1 has shown in above.

2.14 Significance of the ESE sustainability on the Sustainable Performance (SUP)

The significance and influence of ESE (Economic, Social and Environmental) sustainability with a triple bottom line framework have been empirically acknowledged by the earlier research studies e.g. (Styger, L. 2010; Kemp & Martens, 2007; Sinclair, 2011; Carter & Rogers, 2008; Craig et al., 2008 and Elkington, 2004). Those earlier studies have substantiated directly or indirectly regarding the sustainable performance or building sustainable development and growth. Like many others, FAO, GRI, UNMDG and 4C have developed the empirical supports in favor of the ESE performance as a measurement of sustainability in the diverse industry.

Despite the assertion of sustainability with triple bottom line theory, ESE sustainability is still relatively unexplored in the dairy industry in Bangladesh as a measurement dimensions of the sustainable performance. Moreover, earlier research failed to integrate the ESE sustainable performance, particularly with the mediation of sustainability governance (SUG) and moderation of environmental uncertainty (EU). Most researchers have used the ESE sustainability for measuring sustainable performance that does not ensure the long-term performance, i.e. lack of integration among the ESE sustainability. But in this study, ESE sustainability has been used as a measurement of sustainable performances. Moreover, the effects on ESE sustainability as dimensions of sustainability with a triple bottom line theory will be examined and explored as the desire of the dairy industry in Bangladesh. Hence, this will be essential to examine the role of ESE sustainability as a measurement of the sustainable performance (SUP) of the dairy industry in Bangladesh.

2.15 Existing Research Gap

The sustainable performance of the dairy industry is an emerging issue and most important concern in any economic status of the nations like developed and developing countries as well. Many earlier studies as discussed in the earlier sections explored the

responsible factors hurdle to reach the destinations over the times. Besides these modest factors, some other factors separately contributed to the sustainable performance of the dairy industry in Bangladesh. For evaluating of these circumstances, it required an extensive literature review that is extremely important for researchers to substantiate the existing research gap that was not covered by the existing research and studies. Through extensive literature review conducted in the sections 2.1 to 2.7. It has been found the substantial evidence for making it clear about the research gap. The following discussions have been enlightened to the rationale of the present research and this research gap.

Environmental uncertainties are often a very intimidating issue for the sustainable performance of the dairy industry. This issue has got high attention by the diverse group of customers through consideration of its frequency of disruptions and consequences. Despite the comprehensive research on the environmental uncertainty and its consequences, the hierarchical and multidimensional matter of environmental uncertainty (EU) has not yet been established and validated empirically in the dairy industry. A comprehensive measurement model of environmental uncertainty is yet to be developed. For mitigating the uncertainties, respective organizations are required to evaluate the understanding of environmental uncertainty which is needed to generate the measurements of environmental uncertainty. Hence, this study focuses on measuring and validating the multidimensional and hierarchical construct of environmental uncertainty (EU) in the context of the dairy industry in Bangladesh.

To mitigate the uncertainty for ensuring sustainable performance (SUP), marketing channel relationship is extremely important. Many academic researchers have concentrated on the relationship marketing and marketing channel relationship as a new paradigm of the marketing concept. These studies focused on the results and consequences of the relationship in the diverse field such as (Dyer & Singh, 1998) Although extensive studies on the relationship marketing issues such as agricultural marketing channel relationship (AMCR) the hierarchical and multidimensional issues of agricultural marketing channel relations have not been established and validated empirically till now as per the author's best knowledge. Therefore, this research is an

initiative to fill up the gap in the literature by developing a comprehensive multidimensional measurement model for AMCR in the context of the dairy industry in Bangladesh.

In addition, sustainability governance (SUG) is considered as a means for sustainable development. Besides these contributions, sustainability governance (SUG) motivates to minimize any form of vulnerabilities and uncertainties in the business and non-business operations that have empirical support. For this consideration, it has got attentions from the researchers and policy makers in regards to its performance and consequences. Despite the higher level of consideration of sustainability governance (SUG) in the contemporary subject matters in the academia, the hierarchical and multidimensional constructs of the sustainability governance (SUG) have not yet been developed and validated empirically as per the best knowledge of the author. Hence, the study has been motivated to fill up the existing research gap in the literature. For overcoming this research gap this study has developed a comprehensive multidimensional measurement model for SUG in the field of the dairy industry in Bangladesh.

Furthermore, the sustainable performance of the dairy industry has been a robust subject matter to the customers and policy makers under the frameworks of the triple bottom line (TBL). Previous empirical wisdom has contributed to the concept of development of the sustainability, such as (Malthus, 1798/1976; WCED, 1987; Carter & Rogers, 2008; Elkington, 1998, 2004). After this period, it has upgraded the desired concepts of the sustainability of the business and non-business organizations. In spite of having the substantiation regarding the impacts and consequences of the sustainability, many social leaders, policy makers and academia gave the concentration in this regards. But, measurement dimensions and hierarchical constructs of the sustainable performance (SUP) have not been established yet and validated empirically particularly in the dairy industry in Bangladesh. Therefore, this study has been conducted to investigate the aforementioned variables and relevant constructs of the sustainability in the context of the dairy industry in Bangladesh. With this purpose, this study has developed a comprehensive research model for measurement of the multidimensional

constructs and items for the sustainable performance (SUP) of the dairy industry in Bangladesh.

Finally, the link relationships between the hierarchical constructs such as AMCR, SUG and EU have highly influenced factors for the sustainable development of the dairy industry in Bangladesh according to the empirical knowledge. But, its validity has not been recognized and tested yet through any form of the methodological justification. Hence, this study supported to develop an initial model as per the consideration of the that existing literature gaps have been identified through an extensive literature review, and proposed an initial model that will be represented in figure 2.6 in the next.

2.16 Initial Research Model

This research is conducted with the aim of exploring the measurement constructs of the agricultural marketing channel relationship (AMCR), sustainability governance (SUG), environmental uncertainty (EU) and sustainable performance (SUP) of the dairy industry in Bangladesh. As earlier empirical studies (as discussed in section 2.1 to 2.7), this study is proposed to explore the effect of agricultural marketing channel relationship (AMCR) on sustainable performance (SUP) and sustainability governance (SUG) and investigation of the mediating impact of sustainability governance (SUG) on sustainable performance (SUP) as well as the moderating effect of environmental uncertainty (EU) in the relationship of sustainability with AMCR and SUP as well as SUG and SUP. To provide a clear picture, figure 2.5 is presented to propose the initial research model for the current research.

As shown in the model, agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) are modelling as the hierarchal-multidimensional (higher order) construct. More specially, the model asserted the trust, commitment, cooperation, power, satisfaction and communication reflecting the higher order construct agricultural marketing channel relationship (AMCR). Those reflective constructs were justified as the measurement according to the references of earlier studies, like (Anderson & Narus 1990; Anderson & Weitz 1992; Morgan & Hunt 1994; Batt, 2003; Ganesan 1994; Heide & John 1988; Zboja & Voorhees, 2006; Espejel, Fandos, & Flavian, 2008; Gyau & Spiller, 2008 and Dweyer et al.1987). In addition,

the model showed that economic sustainability; social sustainability and environmental sustainability reflecting the higher order construct sustainable performance (SUP). Those reflective constructs were justified as the measurement tool according to the empirical research references such as (Shrivastava, 1995; Sheth, Sethia & Srinivas, 2011; FAO, 2014; GRI, 2002, 2012, etc).

Moreover, the model demonstrates that sustainability governance (SUG) is hierarchal-multidimensional (higher order) and mediating construct. This model highlighted the business sustainability; policy integration; governance power and financial control to reflect the higher order construct sustainability governance (SUG). Those reflective constructs were justified as the measurement according to the references of earlier studies, like (Dauvergne & Listert, 2011; Duxbury & Dickinson, 2007; Kemp et al., 2005 and etc).

Besides, the model has exposed the environmental uncertainty (EU) which is also a hierarchal-multidimensional (higher order) and moderating construct. This model identified the formative construct like demand uncertainty, supply uncertainty, competitor uncertainty, government policy uncertainty and climate uncertainty those which are also represented as a measurement scale of environmental uncertainty as per the suggestions of the earlier studies, like (Badri, Davis & Davis, 2000; Van der Vorst, 2000; Li, 2002; Paulraj & Chen, 2007, etc).

Therefore, based on the empirical evidence and extensive literature review, the initial research model has proposed the link relationship among the higher order constructs like agricultural marketing channel relationship (AMCR) and sustainability governance (SUG), sustainable performance (SUP). Along with these relationships, this model is also targeted to prove the mediating of SUG and moderating effect on the higher order formative construct of environmental uncertainty (EU) as shown in figure 2.5 as follows.

Figure 2.5 Initial Research Model



Source: Author compiled from literature review

This initial research model may be supportive of developing a comprehensive research model, namely agricultural marketing channel relationship (AMCR) for sustainable performance (SUP) of the dairy industry under environmental uncertainty (EU) and this model will be a landmark in the agricultural marketing and relationship marketing literature and practices.

2.17 Theoretical Evaluation of the Higher Order Constructs and Their Relationship

This study presented theoretical and practical issues to establish and define the concept of agricultural marketing channel relationship. There are criticisms regarding the theoretical explanation which is presented for being the limitation of these studies. Similarly, there is a lack of speculative justifications of these studies to concentrate on the significance of the agricultural marketing channel relationship (AMCR) for the sustainable performance (SUP) of the dairy industry.

This initial model has developed based on the concept of some of the relevant theories, like social exchange theory (SET) and stakeholder theory. Many studies of the relationship marketing literature of used social exchange theory for building the relationship with the business and society. While Carter & Rogers (2008); Carter & Easton (2011) and others used stakeholder theory to explain the sustainability. Like many other scholars Dwyer et al. (1987); Arndt, German & Hunt (2003); Sweeney & Webb (2007) and Biggeman & Buttle (2009) have supported to the social exchange theory for relationship marketing. The reason for using the social exchange theory (SET) and stakeholder theory in this research is presented below.

Social exchange theory

A number of academic perceptions to develop that economics, law, and social psychology is being applied in relationship marketing. Among those theories, social exchange theory has been recognized and used by many empirical studies to enrich the field of the relationship marketing like Hallen, Johanson & Seyed-Mohamed (1991) and Heide, (1994).

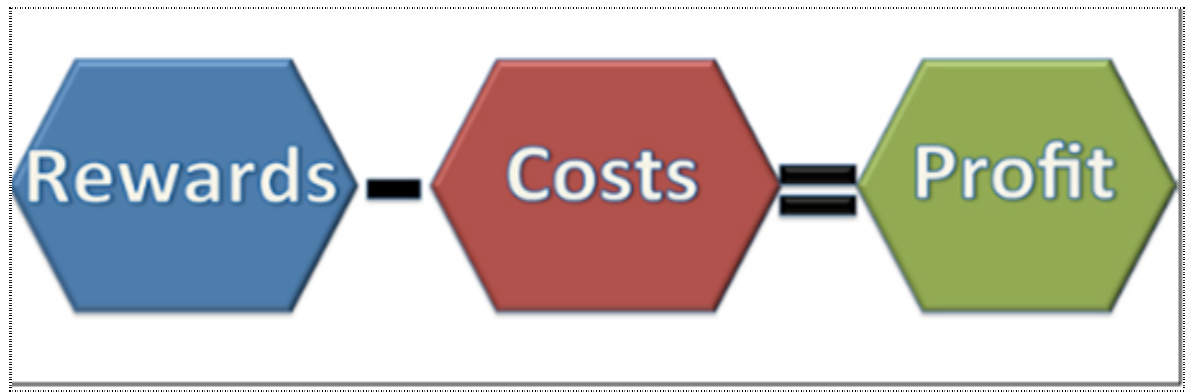
Social exchange theory has been used in marketing relationship as a theoretical base for commitment, trust, and relationship power. This theory explicated that relations are dependent on the parties' appreciation of trust, as well as their approaches towards communication and bargaining. With high, the level of trust develop more favorably whilst parties' bargaining games have less influence on relationship development

(Biggeman & Buttle, 2009; Arndt, German, and Hunt, 2003 and Sweeney & Webb, 2007).

Social exchange theory (SET) is a highly influential theory of organizational behavior, which is useful for theoretical ambiguities within SET remain (Cropanzano & Mitchell, 2005). Social exchange theory is a constructive technique by which human beings like men and women behave in relationships. It has focused on the economic terms of costs and rewards and applied it's in a give-and-take aspect of interpersonal relationships (Wang, 2004). The common perception regarding the social exchange theory is an explicated social modification and constancy that are practiced to agreed exchanges among the parties. On the other hand, the social exchange theory justified that personal relationships are built through personal analysis of costs and rewards as well as the evaluation of substitutes. It is also used moderately in the business world to involve mutually dependent and satisfying procedure dealings.

Social exchange theory justifies the relationship between the two parties by examining the costs and benefits of each other. The key point of the theory is that it assumes the two parties are both giving and receiving items of value from each other. In addition, Wang (2004) revealed that rewards and costs are essential on the basis of most social exchange theories. The rewards are exchanged resources that bring pleasure and satisfaction, while costs are exchanged resources that are perceived as a loss or punishment. Another study focused that rewards are positive elements of a relationship. Costs are also grouped as an element of having a negative value of a relationship like (time-cost, money cost, effort cost, etc). Furthermore, Monge & Contractor (2003) described that relationship is highly dependent on outcome satisfaction. According to the concept of the social-exchange theory, profit can be calculated by the following equation that has shown in figure 2.6 as follows.

Figure 2.6 Equation of Social Exchange Theory



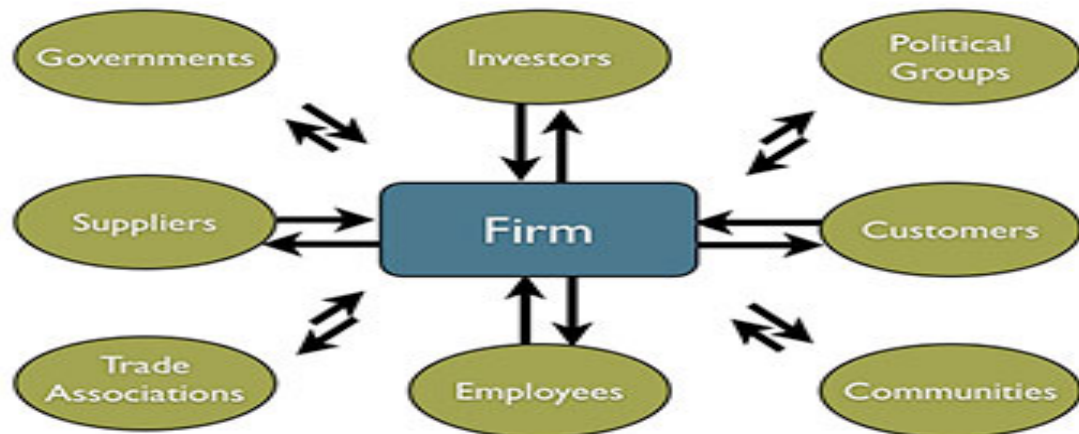
Source: Author compiled from literature

This theory exposed that partners will be motivated to build up a relationship when they get the assurance about the worth or the profit of relationship. Thus, the relationship is a subjective aspect that is highly influenced by the consecutive and congenial environment in the society or industry to ensure the mutual profit to all relevant stakeholders. Therefore, according to the empirical studies like Shtatfeld & Barak (2009) people are involved to those persons who contributed them by the rewards. In addition, Auld & Case (1997) stated reciprocity is a professed mechanism for new social relationship because people are prepared to be helped by others, expecting that the help will ultimately be returned.

Stakeholder theory

Stakeholder theory demonstrated that managers should make decisions considering the interest of all stakeholders. Stakeholders mean those individual or groups of parties who have a regular interest on the company performance. According to Freeman (1984) stakeholders are those who have an interest in the firm. The task of management is to maintain a balance in between the contradictory welfares and claims of stakeholders see in Figure 2.7 in detail as follows.

Figure 2.7 Contrasting Interest of Stakeholder



Source: *Author compiled from Donaldson & Preston (1995)*

Business should maintain the stakeholder's interest regularly, but if it proves itself unable to preserve the expected interest of the stakeholders; it may cause conflict among the stakeholders. Although there are conflicts of interest among the stakeholders over the period of time, the attention and interest of all stakeholders are to come together towards the sustainability of the organization in terms of economic, social and environmental sustainability (Colbert, Wheeler & Freeman, 2003). Hence, sustainable performance for a sustainable stakeholder's relation is highly concentrated by organizations (Perrini & Tencati, 2006). Therefore, sustainable development of the dairy industry is a stakeholder pressure by developing the need to ensure economic, social and environmental expectations (Carter & Rogers, 2008). Considering this, it can be argued that the agricultural marketing channel relationship (AMCR) is expected to develop the sustainable performance (SUP) of the dairy industry in the context of Bangladesh to satisfy the demands of the stakeholders. Thus, from the justification of the theories, like the social exchange theory and stakeholder theory; it can be assumed that organizations and their agricultural marketing channel relationship (AMCR) is the superior way to achieve long-term sustainability in the dairy industry.

2.18 Conclusion

This chapter highlighted the relevant literature related to the present research. Reviewed literature related to constructs, namely Agricultural marketing channel relationship (AMCR), Sustainability governance (SUG), Environmental Uncertainty (EU) and Sustainable performance (SUP) addressed in the initial research model have been critically analysed to identify the present research gaps in the existing literature. The selected constructs of the research model have been validated with the relevant theories, like social exchange theory (SET) and stakeholder theory. Finally, this chapter presented an initial research model which mentioned as synopsis the present research.

Chapter-3: Research Methodology

3.1 Introduction

This chapter highlights the particulars of research method. It is initiated with discussion regarding the suitability for using research method that concentrates on the underlying principle and the rationalization of the mixed method in the current research. After that, in the subsequent sections as below detail issues regarding the research methodology like research method, research process and so on are described.

3.2 Research Method

The mixed method has been adopted in this study. The mixed method is popular in social science research. It has been named like blended research, integrative, multi-method, multiple methods, triangulated studies, ethnographic residual analysis, and mixed research (Harrison & Reilly, 2011). Many earlier studies described the mixed method research from their respective concepts, like Johnson et al. (2007) ; Tashakkori & Teddlie, 1998, 2010); Creswell, (2003). Moreover, Greene et al. (1989) defined that mixed method as studies that include at least one quantitative method (designed to collect numbers) and one qualitative method (to collect words), where neither type of method is naturally linked to any particular inquiry paradigm.

In addition, application of the mixed method in the field of marketing research was not very accepted liked others social science research. But, today a little research found in the research archives in the globe that support the application of mixed method design in the marketing research phenomenon, e.g (Harrison & Reilly, 2011; Bahl & Milne, 2006; Hunt, 1994; Bryman, 2006). Furthermore, Bryman (2006) reported that sixteen nationalities of the uses of the mixed method in the research as alternative research designed. Among others, Hanson & Grimmer, (2007) endorsed the used of the mixed method in the marketing research through the reference of 173 articles that were published in the three prominent marketing journals published between 1993 and 2002. Those empirical references regarding the mixed method highly motivated the researcher for selecting a mixed method as a research method for this study.

According to Creswell (2003) there are four types of the mixed method research designs, such as the triangulation triangular design; the embedded design; the explanatory design; and the exploratory design. In addition, the triangulation design focused that the investigator must be collected and compare the data from both qualitative and quantitative methods for authenticating or finding the quantitative results with qualitative data. In addition, the embedded design is stated that collection of both qualitative and quantitative data. Further, the explanatory design suggested that collection and analysis of quantitative data according to the result of qualitative data. Finally, the exploratory design consists of an opposite sequence of explanatory design, which focused on qualitative data for exploring the phenomenon and builds up the second phase of quantitative data collection and analysis.

According to the earlier studies and objectives of the study approved for determining the appropriate mixed method for the current research. As discussed in section 1.5 on page 11, the main objective of this research is to explore the association between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). Based on the previous theoretical framework, the initial model, as shown in figure 2.5 has proposed. Based on the explanation of the research process, and objectives of the research, the triangulation design was selected for the present research. Furthermore, Creswell (2003) recommended triangulation design is a recognized and most universal approach for the mixed method.

3.3 Research Process

As an applied research method, mixed method mutually qualitative as well as quantitative methods were used. The research process described in the figure 3.1 that have been undertaken. The research process highlighted three subsequent phases' like literature review, qualitative study and quantitative study etc. All of the relevant matters have been covered in the present research process which will be discussed in the subsequent chapters were mentioned in figure 3.1 as a follows.

Figure 3.1 Research process

Literature Review	i. Review of the relevant literature ii. Determine the research gap in the existing literature iii. Developing an initial research model	Chapter-2
Qualitative Study	Contextualize the validate the initial model by field study i. Select interviewees ii. Conduct interviews iii. Analyse the interview data by the content analysis iv. Identify the factors and variables v. Compare the findings with the initial research model vi. Propose a comprehensive research model	Chapter-4
Quantitative Study	Develop research hypotheses and design questionnaire	Chapter-5
	Quantitative Survey i. Collect Data ii. Analyse the data using partial least squares (PLS) method	Chapter-6
	i. Discussion of the results & ii. Conclusion Future research direction	Chapter-7 & Chapter-8

Source: Author compiled from literature

This figure highly focused the process of the present research and provided an exhaustive outline regarding the total research. This figure provides a synoptic view about the research format.

3.4 Qualitative Field Study

According to Creswell (2003) a qualitative field study has been used in the exploratory phase of the research for examining the factors and variables which highlighted in the initial research model. This part of the report has been illustrated with the

methodological concept, which has been applied for qualitative research. The following sub-sections have discussed the particulars of the qualitative study has been used in the present research.

3.4.1 Sample Selection

For the selection of the sample, a judgment sampling technique was used. This technique is appropriate for collecting information and has been used most often during the exploratory stage of a research project (Cavana, Delahaye & Sekaran, 2001). According to Mores (1991) this is important to ensure that participants have shared experience regarding the particular situation. This study has focused key responsible persons, who are directly involved in the decision-making of the marketing channel as a principal respondent of the qualitative survey of the present study.

3.4.2 Data Collection

As a qualitative approach, an in-depth interview technique was used for collection of data. Respondents were asked to participate in semi-structured interviews that contained a set of questions to explore the measurement constructs and linking relationship among the higher order constructs. The questions have been developed on the basis of the framework of the initial model. Three topics were covered in the interviews; (i) the measurement factors and predictor constructs and criterion construct (ii) the mediating factors and (iii) moderating factors.

3.4.3 Data Analysis

After the interviews, transcriptions were developed and analysed by using 'Content Analysis' that proposed earlier studies like Wilkinson (2000). Two phases of analysis, such as inductive and deductive analysis were performed. This quantitative element of the research provides the considerable support to the appropriate analysis of the qualitative data. All constructs and dimensions of the analysis and literature review were substantiated. The findings were then compared to the initial model to build a comprehensive research model.

3.5 Quantitative Study

The quantitative study is used to make the explanation of constructs, dimensions and explored the links with the constructs and dimensions, which were developed in the final research model. The quantitative part of the present study was conducted by developing the research hypotheses and the questionnaire; pre-testing of the questionnaire; performing the pilot study; determining the sampling techniques; collecting quantitative data and analysis by using the partial least squares (PLS) method.

3.5.1 Developing hypothesis and Questionnaire

According to the comprehensive research model, relevant research hypotheses were developed. In the present research to substantiate the research objectives (06), six hypotheses were developed that can examine the significance of the relationship between the constructs in the model. A primary questionnaire was prepared to measure the diverse form of the constructs and tested the established hypotheses according to research model. The study chooses the closed- ended questions as a survey instrument at the time of questionnaire design. Empirical research recognized that PLS based SEM is employed Likert scale for measurement of the items in the research survey instrument. The study adopted the five-point Likert scale for the collection of data that extended the respondents agreement and disagreement with design statements (01- strongly disagree and 05 strongly agree).

It is noted that one set of questionnaire was given to dairy farmers as a primary agent of the agricultural marketing channel member in both the sample areas. This study could not incorporate other important agricultural marketing channel member's like retailers and consumers as the entity of the research. The details of the designed questionnaire were available for the future information of the readers and customers.

3.5.2 Pre-testing the questionnaire

The primary questionnaire was pre-tested by the stakeholder, professional, academician and others, who are not directly related to the subject of the research. This is called a

fashion of the research that is empirically believed as a good research questionnaire which shall be pre-tested before conducting the mass survey. According to earlier deliberation and evaluation, primary questionnaires were delivered to the 15 (fifteen) respondents, where 05 academicians (marketing and supply chain), 02 employees of government office and 05 dairy farmers and 03 commercial liquid milk processing companies. In which, the dairy farmers are the main respondents of the mass survey. Finally, 12 (80%) respondents returned the questionnaire with valuable observations. According to the opinion of those experts, necessary modifications were made and finally designed the research questionnaire for the mass survey. The whole process of pre-testing is explained in the chapter-05.

3.5.3 Pilot study

Finally designed questionnaire was tested on the basis of its applicability and identified the problems that may be faced by the respondents. Managers of the dairy farm were the prospective respondents of the pilot study and the respondents were selected from the list of society (co-operative) and dairy associations. The convenient sampling method was used for selecting the respondents of the pilot study. The respondents were primarily approached over the telephone and informed them regarding the objectives of the present research. From there, the expected respondents who showed their interest to participate in the survey were selected for collection of data. Total, 62 questionnaires provided to the respondents, among them, 55 completed questionnaires were received back from the respondents. The details of the pilot study were explained in the chapter-6.

3.5.4 Study of population and sampling technique

The population of the present study is defined as the farms in the dairy industry in Bangladesh and particularly, the dairy farms who are the main supplier of milk in the marketing channel. Since the purpose of the study is to develop a model that substantiates the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) in the dairy industry in Bangladesh. The dairy farmers are

considered as the target population of the study. Among the dairy farms having more than 20 cows were selected as a qualified sample for collection of data.

The survey was conducted for collecting data by using the means face to face personal survey of the dairy farms were situated in the Sirajgonj and Chittagong districts in Bangladesh. The details of respondents were collected from dairy association catalog and society list (cooperatives' list) in the respective districts. Total 400 respondents were selected from the sample areas and selected sample size is sufficient for PLS-based SEM analysis according to empirical studies. In the present study, samples were selected by the adoption of the random sampling techniques. The following table 3.1 demonstrates the sampling procedure as follows.

Table 3.1 Sampling Procedure Present Study

Sampling process	Sampling strategy	Remarks
Target Population	Dairy farms (Supplier)	To distribute liquid milk to targeted customers marketing channel members is highly important, dairy farmers are called suppliers. Whose were selected as a target population in this study?
Sampling frame	Two important regions (Sirajgong largest milk producing district, and Chittagong commercial city remarkable milk producing district).	These two districts represent the sampling area of the target population, particularly for dairy farms.
Sampling unit	Dairy farms (having more than twenty cows like grade A & B farm's) in the two areas.	These sampling units contain the elements of the target population to be sampled.
Sampling elements	All managers' of the dairy farm managers or the person responsible for management function of the farms.	Some dairy farms, there are no formal farms managers. So Moyshal or owner's performs the managerial functions.
Sampling Strategy	Random sampling	Samples selected randomly from dairy farms which have more than twenty cows.
Sample Size	320 completed samples.	55 Pilot study and 265 for the main study.

Source: Author compiled

3.5.5 Sample size determination

The size of the sample is important for any form of statistical analysis to achieve the expected power of a model. The study employed PLS-based SEM (Structural Equation Modelling) method to measure diverse constructs and to evaluate the proposed hypotheses in the model. Hence, selection of sample size should be determined with proper explanation of required sample size according to adapted research method and analysis tool. There are empirical recommendations regarding the sample size when research followed the partial least squares (PLS) -based Structural Equation Modelling (SEM) method. For examples, Chin, Marcolin & Newsted (1996) and Gefen, Strauband & Boudreau (2000) suggested the minimum requirement of the observations for PLS study which must be not less than 10 times the number of items within the most complex formative construct of the model and this has confirmed by the earlier study like Nunnally (1967).

On the basis of the above explanation, the required sample size for the present research is 30 responses (10x3) as the number of items are the highest complex formative construct. In this study climate uncertainty, demand uncertainty and political uncertainty used maximum three items in the complex formative construct in the proposed model. Therefore, total usable samples are 320 which are more than sufficient in comparison to the minimum sample size required according to the rule of thumb proposed by empirical studies like Chin et al. (1996) and Gefen et al. (2000).

3.5.6 Quantitative data analysis by SEM

This study adapted the PLS- based SEM (Structural Equation Modelling) for quantitative analysis of collected data. This is a second- generation data examination tools that support author's to manage a lot of constructs than an alternative data analysis tool regression equation. The following section discussed the reasons for using the PLS- SEM in the present research.

3.5.6.1 Rationale for using SEM (Structural Equation Modelling)

Structural Equation Modelling (SEM) is a multivariate analytical approach used simultaneously to test and estimate the complex causal relationships among constructs,

but the relationships are hypothetical or not straight observable yet (Williams, Vandenberg, & Edwards, 2009). In addition, Hair et al. (2014) supported the researchers to simultaneously estimate and test the complex theories with empirical data. The study used the SEM (Structural Equation Modelling) that has a different level of the merits mentioned in earlier studies, like (Barclay, Higgins & Thompson, 1995; Ullman & Bentler 2012). According to them, research will be enjoyed the following benefits like i) flexibility for assessing the measurement properties of the construct ii) explicitly compacted the measurement error iii) overcoming the limitations of first generation techniques like regression analysis. In addition, (Barclay et al., 1995) also addressed some limitations regarding the using SEM. But those limitations are nominal in comparison to the benefits of the method used in the present study.

The study preferred SEM (Structural Equation Modelling) as a quantitative data analysis tool for enjoying above benefits and addressing the comprehensive research findings regarding the subsequent research questions under the research model. The research model of this study has a large number of constructs and dimensions that cannot be examined by the first generation data analysis techniques like a regression-based model. Hence, by the justification of empirical research evidence present research selected second- generation data analysis technique SEM (Structural Equation Modelling) which is suitable for this study. It has found the logical evidence regarding the applicability of SEM (Structural Equation Modelling) for testing present research models like agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) under mediating and moderating effect.

3.5.6.2 Reason for using PLS-based SEM

The empirical studies surmised different types of SEM applications, like as covariance-based SEM (CB-SEM) for that used the software (LISREL, AMOS). On the other hand, Partial Least Square (PLS) - based SEM by the used software (Smartpls) that were advised for the prediction of the research model of the theoretical development.

In addition, earlier studies like Hair, Ringle & Sarstedt (2011); Ringle et al. (2012) and Chin (1995) confirmed that PLS –based SEM has been applied for the exploratory research. In addition, the theoretical aspect of CB- based SEM is an appropriate

method, when the objectives of the research are theory testing and confirmation. But, PLS-SEM is an appropriate method, when research objective forecasts for the development of theory. This is professional to perform a wider range of the sample sizes as well as a model complication. In addition more, Hair et al., (2011) addressed that construct's measurement properties are less defensive with PLS- based SEM, where constructs with smaller quantity items will be more able to use than those can be required for the CB- based SEM. Finally, empirical studies conclude that researchers should comprehend the goal of the analysis for choosing a suitable statistical method for the Structural Equation Modelling (SEM) application.

It has been argued on the incorporation of PLS- SEM for analysis of the data in the present study that is relatively innovative and not empirically used widely for the marketing research particularly for the context of the present study. The present study is an exploratory research in nature, while its efforts to explore the present condition and dimensions of environmental uncertainty, sustainability governance along with agricultural marketing channel relationship and sustainable performance of the dairy industry in Bangladesh. Also, it examines the relationship among the agricultural marketing channel relationship (AMCR), sustainability governance (SUG) and sustainable performance (SUP). In addition, the study explores the moderating effect of the environmental uncertainty (EU) on the sustainable performance (SUP) that has proposed in the present research model. There is no earlier research that deals with interrelationship among the constructs that are shown in the research model according to the best knowledge of the author.

Moreover, the purpose of the study is to establish the theory rather than the testing previous theory. Hence, it is rational to use the PLS- based SEM for the present study. The study used the both types of the constructs, like reflective construct and formative construct and items. For handling both reflective and formative indicators, PLS- based SEM is suitable method rather than CB- based SEM. The PLS- based SEM also supported to handle an extended model with a larger amount of the constructs that is shown in the comprehensive model of the research. These observations were

recommended by the earlier studies like Barclay et al. (1995); Chin (1995); Rai, Patnayakuni, & Seth (2006) and Ringle et al. (2012).

3.5.7 Partial least square (PLS) process

The PLS- based SEM method was used for the data analysis. This method included two processes, like i) assessment of the measurement model and ii) assessment of the structural model. Those processes recommended by the earlier studies like Hair et al. (2011 and Hair et al. (2012). In the assessment model, causal relationship between the manifest variables and a latent variable is required. The basis of these relationships is two types of measurement models that are available such as reflective and formative models (Hair et al., 2011). The present study incorporated both models of the indicators: reflective and formative in the research model. Hence, to assess a model of the present research, the author reviewed earlier recognized studies and selected (Hair et al., 2011) guidelines for assessment of the model. Following Table -3.2 represents the process of the PLS- based SEM analysis that is systematic and empirically hypothesized.

Table 3.2 Systematic Process of the Structural Equation Modelling (SEM) Analysis

Step	Type of the Item	Type of Measurement	Decision Parameter
Step-1 Assessment of measurement model	<i>Reflective</i>	Indicator reliability	More than 0.70 & t-value>1.65 (But this study accept more than 0.60 & t-value >1.65)
		Internal consistency	More than 0.70
		<u>Convergent validity</u> AVE (Average variance extracted)	More than 0.50
		Discriminant Validity AVE analysis	The AVE of each latent construct should be higher than the construct's highest squared correlation with any other latent constructs
		Indicator loading	An indicator's loading should be higher than all of its cross- loading
	<i>Formative</i>	Indicator weights	When all the indicator weights are significant, there is an empirical support to keep all indicators. Then conceptualized and t-value = 1.65

		Multi-collinearity	All indicator's variance inflation factor (VIF) value should be less than 0.5
Step-2 Assessment of structural model	Reflective and formative (Both)	Coefficient of the determination	R ² should be more than equal to 0.25
		t-value	Significance t-value= 1.65

Sources: Author Complied from Hair et al. (2011)

3.5.7.1 Specification of reflective or formative measurement

In the present research model, both reflective and formative measurement constructs were incorporated. Model specification for research is difficult due to inappropriate measurement model may cause the biased results (Henseler, Ringle & Sinkovics, 2009). The measurement model has classified into two different types namely, reflective and formative construct.

Reflective model is a nature of the model that is observed indicators are assumed to be reasons by the latent variable. The model association in that path of the arrow is from construct to the items, it indicates the hypothesis that constructs details the measurement model of the indicator variables (Hair, Ringle & Sarstedt, 2013). Hence, the reflective model is executed, while the statement is correlated with the effect variables. Finally, the model reflects that reflective model measures the manifestation of the constructs. It also has the highest degree of correlations between the items (Fornell & Bookstein, 1982). The following Figure 3.2 demonstrated the graphical presentation of reflective constructs in the model.

In addition, formative model refers the model structure that reflects the reverse direction of the causal relationship (Daimantopoulor & Winklhofer, 2001). It has a setup that is the path of the arrow is from the indicators to construct, specifying the statement that the items cause the dimension of the construct (Hair et al., 2013). Hence, it can be concluded that elimination of the items is a serious matter as the eradication of any item may change the meaning of the particular construct (Jarvis, MacKenzie & Podsakoff, 2003). The following Figure 3.2 demonstrated the graphical presentation of formative constructs in the model.

This demonstrated the relationship between the latent variables and manifest variables in the both the cases, like reflective and formative measurement models. The selection of the model (reflective or formative) is a highly challenging matter to the researchers and academicians. But sometimes it is very clear due to causal priority between the construct and items. Many previous studies, accused that a misspecification of the measurement model highly influences the outcomes of the research that are not acceptable by any means.

Figure 3.2 Reflective Measurement Model and Formative Measurement Model

Fig: 3.2 (a): Reflective Measurement Model

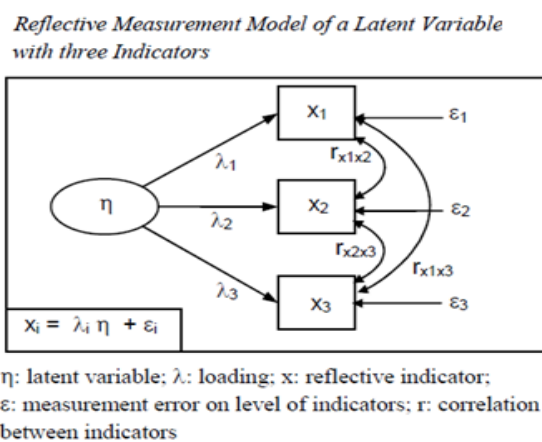
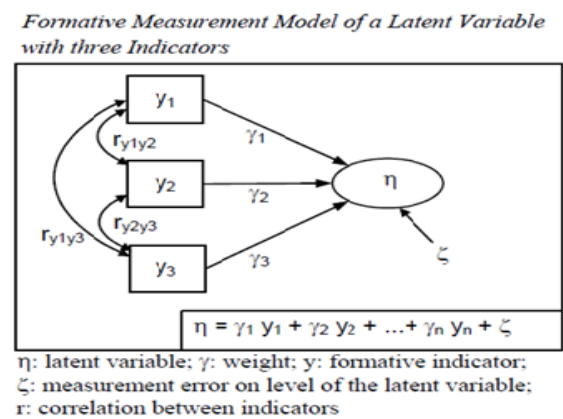


Fig: 3.2 (b): Formative Measurement Model



Source: Author compiled from Hair et al. (2011)

Hence, for better specification of the measurement model in the research, researchers should be examined earlier research findings from time to time. By considering the best research finding as per author's knowledge, the study followed the recommendation of Coltman et al. (2008) for choosing the either a reflective or formative measurement perspective. The guidelines are summarized in the Table- 3.3 as follows.

According to the guidelines of Coltman et al. (2008) and others, the study has developed a model as either reflective or formative. With recommendations of the previous studies and field study outcomes, construct related to the sustainable performance (SUP), agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) were considered as the reflective model; meanwhile, environmental uncertainty constructs were selected as formative in nature.

Table 3.3 A Framework for Assessing Reflective and Formative Model

Consideration	Reflective Model	Formative Model	References
<i>Theoretical Consideration</i> 1. <i>Nature of Construct</i>	The latent construct is existing.	The latent construct is formed.	Borsboom et al. (2003, 2004)
2. <i>The direction of causality between items and latent constructs.</i>	Causality from construct to items.	Causality from items to construct.	Bollen & Lennox (1991)
3. <i>Features of items used to measure the construct.</i>	Items are manifested by the construct.	Items define the construct.	Rossiter (2002); Jarivis et al, (2003)
<i>Empirical Consideration</i> 1. <i>Item inter-correlation</i>	Items should have high positive inter-correlations.	Items can have any pattern of the inter-correlation but possess the same directional relationship.	Cronbach (1951); Nunnally & Bernstein (1994).
2. <i>Item relationships with construct measurement and consequences.</i>	Items may have similar significance of the relationships with measurements/ consequences as the construct	Item may not have the similar significance of relationships with measurements/ consequences as the construct.	Bollen & Lennox (1991).
3. <i>Measurement error and collinearity.</i>	Error term in items can be identified.	Error term cannot be identified if the formative measurement model is estimated in isolation.	Bollen & Ting (2000)

Source: Author compiled from Coltman et al. (2008)

3.5.7.2 Assessment of the reflective measurement model

According to Table-3.2 for assessment of the measurement model at reflective model should be evaluated by the item reliability (indicator reliability), internal consistency, convergent validity (AVE) and discriminant validity (AVE analysis and indicator loading) those issues and measurement supported by Hair et al. (2011). In the following parts, the report elucidated the process and standard of the above issues for the present study.

Item reliability

Item reliability is examined through the item loading of each item with the constructs to confirm how well each item relates to the particular construct. Item loading has also specified the power of the items to measure a particular construct. In addition, Nunnally (1978) opined that items loading indicate the relationship between the items in the construct, such as low item loading indicates lower correlation whereas high loading indicates a higher correlation. In PLS, item reliability can be admitted through validations: (i) the item loading scores and their significance for the reflective measurement, (ii) item level weights and their significance for the formative measurement (Ringle et al., 2012; Hair et al., 2011).

There are differences in the research wisdom regarding the acceptable value of item loading. According to Hair et al. (2011) the item loading value should be higher than 0.7 but in exploratory research, 0.60 to 0.70 is considered suitable. By the similar approach, Barclay et al. (1995) suggested that the item loading threshold should be 0.707. They also suggested that the items with loadings less than 0.707 should be eliminated. It should not be rigid at the initial stage of loadings of 0.50 or 0.60 which is still acceptable, where Chin (1998a) and Hulland & Richard (1999) accepted the item loading threshold as 0.5. Referring to arguments and considering all the recommendations from the earlier studies, and convergent validity of the measurement model, present research adopted the item loading threshold level was determined as greater than 0.60 that has been used by Moorees & Chang (2006) which also has been recognized by Hair et al. (2011) for exploratory research.

Internal consistency

Internal consistency is applied to find the construct reliability focused on exploring the composite reliability to determine the internal consistency. It is also employed to establish the convergent validity to assure the relationship among the items in a construct (Hair et al., 2011; Fornell and Larcker, 1981). In PLS- based SEM internal consistency can be calculated by using the following formula:

$$\text{Internal consistency} = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum \text{Var}(\epsilon_i)}$$

In addition, Fornell and Larcker (1981) introduced internal consistency for measuring the reliability constructs in the second generation process. This second generation process is more appropriate than first generation process measuring reliability by Cronbach's alpha. Earlier studies revealed that the minimum threshold for internal consistency is 0.7 (Hair, Sarstedt & Ringle, 2012; Hair et al., 2011; Barclay et al., 1995; Fornell & Larcker 1981). However, there are conceptual differences regarding the cut-off point. Such as, Bagozzi & Heatherton (1994) and Henseler et al. (2009) suggested 0.60 as the cut-off point value for internal consistency. The cut-off value 0.60 is considered for internal consistency for this study.

Average variance extracted (AVE)

To appraise construct validity, the Average Variance Extracted (AVE) of a construct by its corresponding items is useful (Hair et al., 2011; Fornell and Larcker, 1981). It measures the variance explained by the particular construct with respect to its indicators (Fornell and Larcker 1981). The acceptable value of AVE recommended by Fornell & Larcker (1981) is 0.5 that has been supported by many others, such as (Hair et al., 2012; Hair et al., 2011). The AVE (average variance extracted) value of more than 0.5 manifests acceptable convergent validity as the underlying variable is able to enlighten more than half of the variance of its indicators on average (Henseler et al., 2009). The formula for calculating AVE is denoted by:

$$\text{Average Variance Extracted (AVE)} = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum \text{Var}(\epsilon_i)}$$

[Where, λ_i factor loading denotes the simple correlation between the item and its constructs (item loading), and $\text{Var}(\epsilon_i) = 1 - \lambda_i^2$ (the variance)]

Discriminant validity

Discriminant validity has been used in the reflective measurement model assessment, which examines the position where construct may differ from each other. In addition, discriminant validity evaluated by common variance among the items and constructs

have incorporated in the model. Earlier studies like Barclay et al. (1995); Henseler et al. (2009) and Hair et al. (2011) suggested two analytical measures for the assessment of discriminant validity, such as i) evaluation between the square root AVE of the constructs and the relationship among the constructs and ii) cross-loading matrix evaluation at the item level.

The prerequisite for satisfying the conditions of discriminant validity is the off-diagonal elements (the association of latent variables) which shall be less than or equal to the diagonal elements (square root of the AVE) in the subsequent rows and columns (Hair et al., 2011; Barclay et al., 1995; Fornell & Larcker 1981; Henseler et al., 2009). Furthermore, in order to justify the criterion of discriminant validity during the cross-loading matrix, items loading within a construct may be higher than its loading with any other constructs (Hair et al., 2011; Barclay et al., 1995; Chin, 1998b).

3.5.7.3 Assessment of the formative measurement model

The earlier studies like Jarvis et al. (2003); Bagozzi & Heatherton (1994) and Hair et al. (2011) recommended that formative measurement model does not require assessment values that used in the reflective model assessment. To evaluate a formative model at the item level, it is significant to appraise whether each item supports to the formative index through deliberate meaning. According to earlier studies like Hair et al. (2011) and Henseler et al. (2009) the formative construct can also be evaluated by statistical examination of the construct and item levels. Significance item weight and loading are helpful in this assessment. Another empirical study like Cenfetelli & Bassellier (2009) and Hair et al. (2011) recommended that an item shall not be incorporated into the formative index, if both item weight and item loading are irrelevant. Conversely, Fornell, Lorange & Roos (1990) supported the addition of all formative items still, if the item weight is very low or negative because, in the case of the formative construct, elimination of an item is the eradication of a part of the construct (Bollen & Lennox, 1991).

This is also important for the researcher to verify the redundancy of the formative items (Hair et al., 2011; Henseler et al., 2009). In this regard, scholars should observe the variance influence factor (VIF) to analysis the degree of multicollinearity for the

formative indicators (Hair et al., 2011; Henseler et al., 2009). A VIF value of 5.00 or less is satisfactory. If the VIF value is more than 5.00, it means that 80% of an indicator's variance is due to the outstanding formative items related to the similar construct (Hair et al., 2011; Henseler et al., 2009). The study used some guidelines that are accepted and recognized by the empirical studies like (Afthanorhan, 2014) and following Table 3.4 represents the decision guidelines used for present research.

Table 3.4 Decision Guidelines for Assessment of the Formative Construct Model.

Validity Types	Criterion	Particular	References
<i>Indicator validity</i>	Indicator weight	Path coefficient should be greater than 0.10 or 0.20	Chin (1998b); Lohmoller (1989).
	Variance inflation factor (VIF)	VIF should be higher than 0.20 but lower than 5.00	(Hair et al., 2011; Henseler et al., 2009).
<i>Construct Validity</i>	Inter-construct correlations	When the correlation between the construct is lower than 0.85 that indicates that the construct differs sufficiently from other. That differs sufficiently from providing a significance construct. Where ($r < 0.85$)	Mackenzie et al. (2005); Bruhn et al. (2008)

Source: Author compiled from Afthanorhan (2014).

3.5.7.4 Assessment of the hierarchical and multidimensional construct

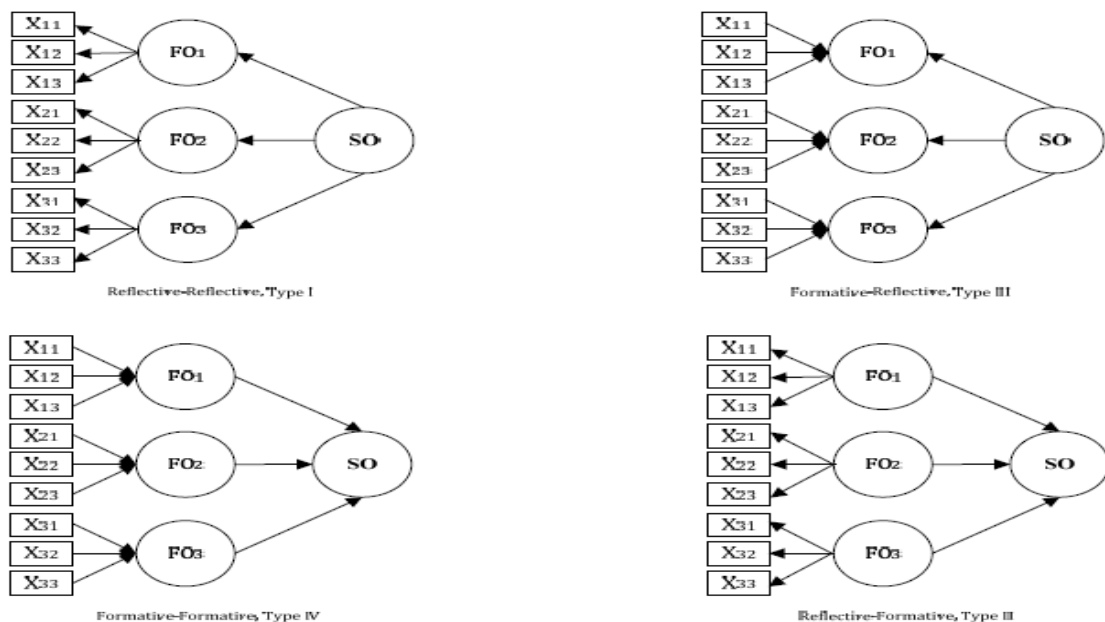
The present research model incorporates the hierarchical and multidimensional measurement constructs. Thus, the hierarchical construct and its evaluation are important. The following sections of the report elucidate the details of the hierarchical construct. In addition, Jarvis et al. (2003) stated that hierarchical construct refers to the multidimensional construct that has more than one measurement dimension. In a wider sense, a multidimensional construct consists of more than one interrelated dimensions and subsists in the field of multidimensional (Law, Wong & Mobley, 1998). Many empirical studies focused the importance of selecting appropriate constructs and reminded that failure to correct multidimensional construct will lead to a poor model result and fit (Polites, Roberts, & Thacher, 2012). Hence, this is very important for the

researcher to carefully define the constructs and sub-constructs with appropriate evaluation and recommendation.

Stages and modes of hierarchical construct

Hierarchical and multidimensional models are illustrated by two types, like (i) the number of levels in the model (e.g. second-order or third-order level) and (ii) the associations (formative vs. reflective) linking the constructs in the model (Ringle et al., 2012). A higher order construct is reflective (type I and III in Figure 3.3), while a higher-order construct is formative (type II and IV in Figure 3.3) (Ringle et al., 2012; Wetzels, Odekerken-Schroder & Van Oppen, 2009). A higher-order construct may be multi levels, like second-order, third-order or fourth order, but the second-order level is the most extensively observed hierarchical model in the literature. A second-order hierarchical latent variable model can be classified into four types based on the relationship between: (i) the first-order latent variables and their manifest variables, and (ii) the second-order latent variable and the first-order latent variables (Ringle et al., 2012; Jarvis et al., 2003) that are shown in Figure 3.3.

Figure 3.3 Four Types of Hierarchical Latent Variable Model



Source: Author compiled from Becker, Klein, & Wetzels, (2012); Chin (1998b).

Figure 3.3 demonstrates the types of hierarchical latent variable model for enriching the understanding of hierarchical and multidimensional constructs. ***The reflective-reflective type I model*** is correct when the objective of the study is to discover the general factor of several related, yet different reflective constructs. ***The formative-reflective type III model*** is useful when a higher-order construct is characterized by the general part of a number of indices that are theoretical to measure the same thing. ***In the reflective-formative type II model***, the lower-order constructs are reflectively measured constructs which form a general concept. ***In the formative-formative type IV model***, the lower-order constructs are considered by formative indicators and the formative indicator to ultimately form a general theory at a higher-order level (Becker, Klein, & Wetzels, 2012; Chin 1998b).

Higher-order reflective construct in the research model

According to literature reviews and field study outcome, this has been apparent in the higher-order level agricultural marketing channel relationship (AMCR) is measured by the first-order constructs: trust, commitment, power, satisfaction, cooperation and communication. In addition, mediation construct is another higher-order level construct ‘sustainability governance (SUG)’ measured by the first-order construct followed by business sustainability, integration, governance power and financial control. Moreover, criterion construct ‘sustainable performance (SUP)’ is measured through the first-order constructs: economic sustainability, social sustainability and environmental sustainability. It is logical to measure all higher-order and first-order constructs on the reflective construct models in both the levels according to the reference of the earlier studies.

Higher-order formative construct in the research model

Moderation construct is also a higher-order level ‘Environmental uncertainty (EU)’ construct that is measured by the first order construct: demand uncertainty, supply uncertainty, competitor uncertainty, government policy uncertainty, climate uncertainty and political uncertainty. It has logical to measure all higher-order and first-order

construct in the formative construct models in the both levels as regard to the earlier studies.

Approaches to measuring the hierarchical construct

Three different approaches were used to measure the hierarchical construct such as i) the repeated indicator approach, ii) the two-stage approach and iii) the hybrid approach. These approaches were recommended by the earlier studies like Lohmoller, (1989); Ringle et al. (2012); and Wilson & Henseler, (2007) respectively. According to the Lohmoller (1989) and Becker et al. (2012) ***the repeated indicator approach***, a higher-order level construct may be measured by the first-order constructs measured indicators that have been used in all the dimensions of the first-order. In addition, ***the two-stage approach*** projects the construct score for the first-order constructs score and subsequently the higher-order latent variable in the separate second-order stage analysis (Wilson & Henseler, 2007). Besides these, ***the hybrid approach*** splits the items of the each construct (first-order) and employs one-half to approximate the first-order construct and remaining another half to estimate the second-order construct (Wilson & Henseler, 2007).

After a comprehensive evaluation of all the approaches, the present study has selected the second approach, namely ***‘two-stage approach’*** for measuring hierarchical constructs as the best approach and decided to use this approach. Therefore, the study employed latent variable scores as the substitute of the first-order constructs as the exploit of the coefficient of determination (R^2) value for the criterion constructs (Lohmoller, 1989). This is recognized that ***‘two-stage approach’*** can estimate a composite higher-order model in a careful way without requiring the lower-order construct. Furthermore, in first-order formative and second-order formative constructs, the two-stage approach makes minimum measurement bias also which is the variable model of the present study. Hence, under these circumstances to maximize the comprehensiveness of the research result two-stage approach has been used in the present study.

3.5.7.5 *Assessment of the structural model*

To examine the reliability and validity of the model the study used structural model. According to the previous studies like Hair et al. (2011) the structural model appraises and examines the statistical significance of the hypothesized relationship among the constructs in the research model by investigating the path loading and coefficients among the latent constructs.

PLS –SEM has many advantages that the method is effective for estimation of the coefficient of determination (R^2) value, which is normally used to justify the power of the model and to explain and expect the endogenous latent variables (Hair et al., 2011; Ringle et al., 2012). To examine the explanatory power of the model, it is required to assess the R^2 values of each construct (Hair et al., 2011) but for assessing the R^2 value, there are many opinions regards the acceptability of the R^2 value in the research. In addition, Hair et al. (2011) recommended that R^2 (R-square) value of 0.75, 0.50 and 0.25 for the endogenous latent variable can be evaluated as substantial (0.75), moderate (0.50) and weak (0.25) respectively. On the other hand, a significant number of the studies, for example (Santosa, Wei, & Chan 2005) support an even lower R^2 (R-square) value is acceptable as a value of the coefficient of determination (R^2). Along with R^2 values are considered to be the path of coefficient and t-values of the hypothesized relationship which were measured for the assessment of the significance of the relationship between the constructs in the research model according to guidelines suggested by Hair et al. (2011). Hence, the bootstrapping method is chosen for data analysis. It is considered as an advanced and popular method than others, like Jackknife method (Chin, 1998a).

3.6 Conclusion

This chapter describes the methodology applied in this research. In the early section, the research paradigm and the issues related to the existing methods (quantitative and qualitative) are discussed. Then the rationale and justification for choosing the alternative view that is the mixed method, which combines the qualitative and quantitative approaches are discussed. This chapter also described the data collection process that is (i) a field study, (ii) a pilot study and pre-testing questionnaire (iii) a

national survey and others data analysis and measurement standards that have been followed in the present request. To present a lucid representation the final section of this chapter presents the synopsis of the research process with the major procedures and chapter related to each process.

Chapter- 4: Qualitative Analysis and Comprehensive Research Model.

4.1 Introduction

This chapter presents the analysis of the data, which have been collected from the field study through semi-structured interviews from 19 decision makers of marketing channel such as dairy farms in Bangladesh. This qualitative approach performed to modify the initial model proposed earlier in figure 2.5. Since this research is conducted in Bangladesh and most of the theories were adopted based on a western perspective. Hence, the field study is necessary to ensure the model is valid and relevant in the research context of the host country. In addition, the field study aims at exploring the dimensions of the constructs as proposed in the model. This chapter starts with the overview of the process that has been undertaken in this method. Then, the findings of the content analysis involved inductive and deductive stages are provided. Based on this analysis, a field study model is developed, and a comparison is made with the initial model. Consequently, a comprehensive research model describing the relationship between agricultural marketing channel relationship and sustainable performance with triple bottom line frameworks is established and proposed in the final part of this chapter.

4.2 Overview of the Field Study

4.2.1 Interview Questionnaire Development

The main features of the model have been incorporated by Agricultural marketing channel relationship (AMCR), Sustainability governance (SUG), environmental uncertainty (EU) and Sustainable performance (SUP). Total eleven (11) questions were designed for the field study. The table-4.1 elucidated the details of the relevant questions.

The first section explores the fundamental idea of the agricultural marketing channel relationship (AMCR) in the dairy industry in Bangladesh. The first questions were designed in that regards. It was asked to the respondents regarding the number of channel member's relationship and the measurement dimensions in the dairy industry and examined the connections among the first-order constructs with second-order

construct along with associations of AMCR with others mediating and criterion variables in the proposed research model.

Table 4.1 Issues and Related Questions in the Field Study

Topic	Questions Number	Particular of Questions
1. To explore the agricultural marketing channel relationship (AMCR)	1.	Concept of AMCR a) Definition of AMCR b) Members of the AMCR (Agricultural Marketing channel relationship) and flows.
	2.	Dimensions of the AMCR (Agricultural Marketing channel relationship)
	3.	The role of AMCR on the sustainable performance (SUP) and sustainability governance (SUG).
2. To investigate the mediating effect of sustainability governance (SUG)	4.	Concept of Sustainability Governance (SUG) a) Perception of SUG b) Integrated parties of the SUG
	5.	Dimensions of the SUG (Sustainability Governance).
	6.	Mediating effects of sustainability governance (SUG) on the sustainable performance (SUP).
3. To discover the moderating effect of environmental uncertainty (EU)	7.	Concept of Environmental uncertainty (EU)
	8.	Dimensions of the EU (Environmental uncertainty)
	9.	Moderating effect of the environmental uncertainty in sustainable performance (SUP)
4. To examine the sustainable performance with triple bottom line frameworks	10.	Concept of Sustainable performance (SUP) a) Perception of sustainability b) Understanding about the triple bottom-line frameworks (TBL) like ESE performance.
	11.	Dimensions of the Sustainable performance (SUP)
	12.	The importance of agricultural marketing channel relationship for sustainable performance of the dairy industry in Bangladesh.

Source: Author Compiled from literature

In addition, the second section examines the basic concept of the sustainability governance (SUG) in the dairy industry in Bangladesh that is related to farms and other customers' participation regarding the controlling of the sustainable performance of the

dairy industry. In this regards, in the second question, the respondents were asked about the relationship of the sustainability governance and sustainable performance. It also asked about the measurement dimensions and their relationship with sustainability governance.

In addition, the third section discovered the new perception regarding the moderating effect of the environmental uncertainty (EU) in the associations as an initial research model. Different structures of questions were asked to respondents regarding the present concept of environmental uncertainty (EU) vigilance at present in the dairy industry in Bangladesh that are faced by the farms or entities. Besides that, it also asked regarding the dimensions of the environmental uncertainty (EU) particularly Bangladesh perspectives. Then, invited respondents were asked to share their opinion about the moderating effects of the environmental uncertainty (EU) on the relationship between the higher-order constructs as proposed in the research model.

In the last topic, the focus is given to the investigation of the sustainable performance (SUP) of the dairy farms that represent the sustainable dairy industry. This section posed few questions about the issues of sustainable performance in the context of the dairy industry in Bangladesh. Beside these, it further asked respondents to share their opinion regarding the mediating effect and moderating effect on the sustainable performance. Based on respondents' feedback, the comprehensiveness of the model is increased and finds depth- knowledge of the higher-order construct, like (Agricultural marketing channel relationship, sustainability governance, environmental uncertainty, and sustainable performance) and measurement constructs of all higher-order construct. It also examines the relationship of dimensions consequentially. A complete set of a questionnaire for the field study is developed and represented in appendix-1.

As empirical research wisdom, before conducting a final field study, a pilot study conducted to test the understandability and the applicability of the questions and acquire an idea regards to the length of the interview. In addition, other relevant issues were discovered. Five respondents, including three potential participants and two researchers, participated as a part of the pilot study. According to the feedback from the pilot study, all questions were relevant according to initial research model, but a few modifications like (easy wording) were advised regarding the use of sentences and concepts as per respondents' academic knowledge. Finally, a number of modifications

were made to the question set. Then the final interviews were conducted with 19 respondents from the dairy farm managers (11) and other marketing channel members particularly manager of the milk process companies (08) in Bangladesh.

4.2.2 Sample Selection and Data Collection

In this part of this research, a convenience sampling technique was selected to choose the sample of the field study. Through personal contacts, the names of 19 potential participants were gathered, comprising managers and above from the dairy farmers (Supplier) in Bangladesh. Managers were selected as they are more responsive to agricultural marketing channel and sustainability issues and are willing to talk about their experiences and ideas.

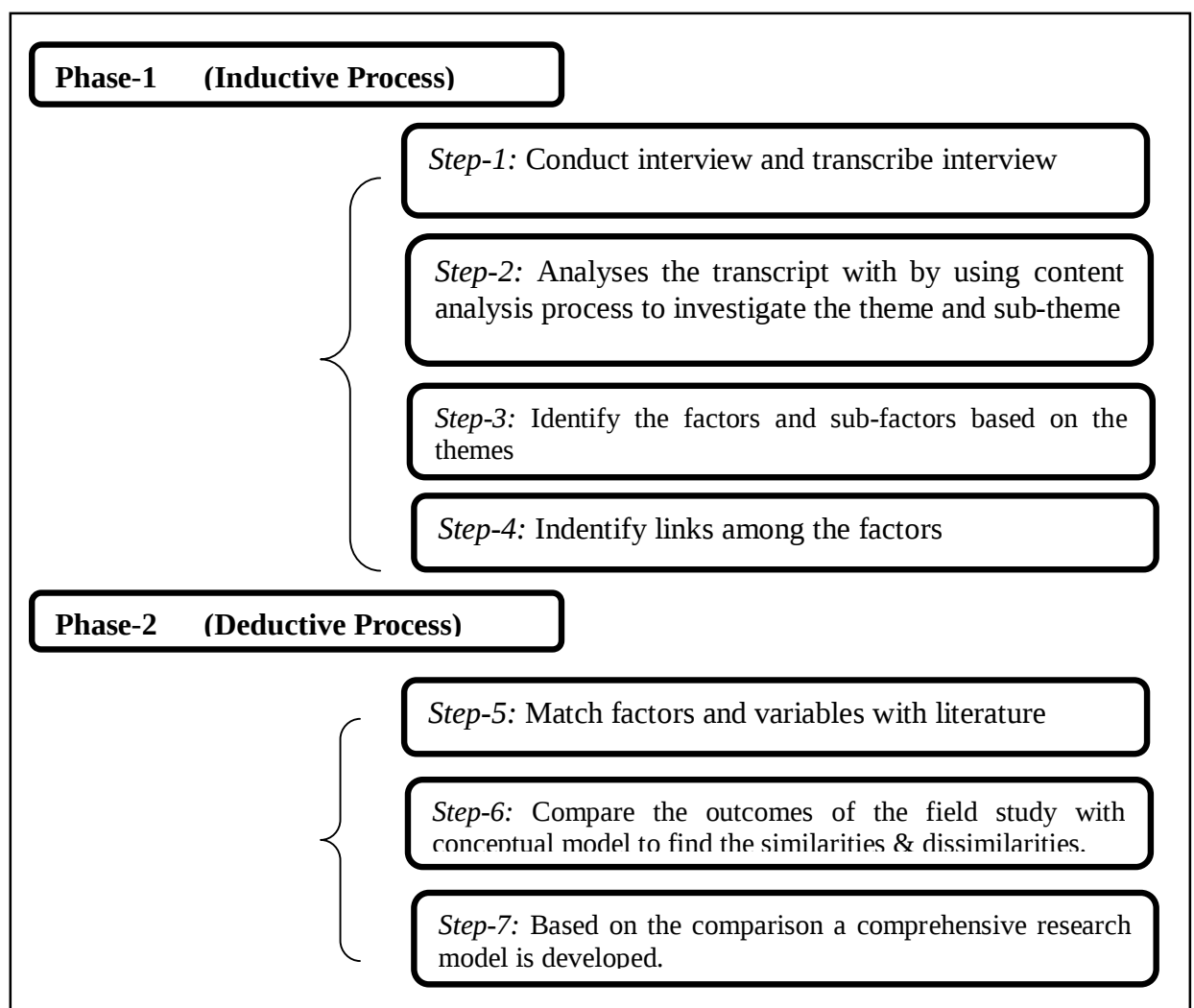
Those managers of the Dairy farms were approached through email and mobile communication and invited them to participate in the field study. The response was rather encouraging as 19 of them agreed to be interviewed. On the day of the interview, it has ensured that their participation was fully voluntary and kept confidentially of their data. The interviews were recorded with the permission of the participants. Remarks were taken throughout the interview. The interviews lasted on average half an hour each. After the interview, the data were transcribed verbatim (word for word) immediately. The interviews were conducted mainly in English, as the working language (official language) in Bangladesh. But, there was some 'Bangla' questionnaire for those participants who are not fluent in English. Therefore, during the data transcription, particular attention was given to maintaining the participants' original meaning. For detailed checking on this matter, participants were contacted for validation.

4.2.3 Data Analysis

For evaluation and analysis of qualitative data, content analysis was deployed to conclude the relationship between the concepts, the interview data, and the theoretical framework. This analysis has been applied in previous research (Xu & Quaddus, 2005) to examine the affluence of the qualitative data to transform into quantitative data for statistical analysis.

The content analysis focused on the examination of data in a systematic and replicable way (Wilkinson 2000). Along with, Siltaoja (2006) exposed that content analysis can be used in various ways. Therefore, in this study, two steps of the process, namely inductive and deductive analysis was carried out to endorse the themes by using the raw data as required to fulfill the objective of the exploratory study. Also, Cavana, Delahaye & Sekaran (2001) asserted the procedures of conducting a content analysis detail. Thus, present study adapted content analysis as a tool for analysis of qualitative data. Following figure 4.1 details the process of field study was identified variables.

Figure 4.1 Process and tools of the qualitative field study



Source: *Author compiled from literature*

In the first stage of analysis (inductive), the themes, sub-themes, factors, subfactors and a number of free nodes were identified and later tree nodes were developed from a set of relevant free nodes with similar concepts. Each tree node was thus considered as a

prospective construct. The constructs developed from each interview were compared. Finally, a field study model is shown in figure 4.2 was developed based on all the significant constructs and dimensionalities. The findings were frequently reviewed in order to enhance the reliability. The first phase of the qualitative data analysis was finalized at that point.

This second phase of content analysis was followed by further more specific data, which is a deductive analysis. This phase is critical phases where the model of the field study figure 4.2 and the initial model in figure 2.5 are reviewed. There are three steps involved in this phase. Firstly, the field study model and the initial model, are compared to assess the significant construct and dimensionality. Secondly, findings from the field study were revisited in order to determine the most significant construct that represents the measurement factors and the links among the components in the process. Thirdly, explanation between the literature review and the field study on the finalized construct is carried out. As a result of these three steps, a comprehensive model for this research is proposed as shown in figure 4.3. The findings of this process are explained in the following section.

4.2.4 Participants' Description

The table-4.2 demonstrated the profile of the participant in this field study. Different levels of marketing channel members of the dairy industry in Bangladesh were participating in the field study.

Table 4.2 Participant Description

Participant	Position	Profile	Types of company
P1	Director marketing	Private	Milk processing company
P2	Assistant manager	Private	Milk processing company
P3	National Consultant	Private	Milk processing company
P4	Consultant	Private	Commercial Customer
P5	Chief Dairy Extension	Private	Milk processing company
P6	General Manager (Dairy)	Private	Milk processing company
P7	Manager Marketing	Private	Milk processing company
P8	Marketing director (Dairy)	Private	Commercial Customer
P9	Deputy General Manager	Private	Dairy Co-operative Society
P10	Senior Assistant Manager	Private	Dairy Co-operative Society
P11	Chief Executive Officer	Private	Commercial Supplier
P12	Managing Director	Private	Commercial Supplier
P13	Entrepreneur Farmer	Private	Commercial Supplier
P14	Entrepreneur Farmer	Private	Commercial Supplier

Conti.....			
P15	Entrepreneur Farmer	Private	Commercial Supplier
P16	General Secretary Dairy	Private	Commercial Supplier
P17	Vice President Dairy farm	Private	Commercial Supplier
P18	General manager	Private	Commercial Supplier
P19	Manager operation	Private	Commercial Supplier

4.3 Finding of the Field Study (1st Stage: Inductive Analysis)

This part of the report presents the findings of the field study, based on the first stage of content analysis. The findings are present in four sub-sections; firstly, findings related to the influence of measurement factors of the agricultural marketing channel relationship (AMCR); secondly, findings interrelated to the influence of mediating factors; thirdly, findings associated with the moderating factors in the relationship of mediating factors and independent factor; finally, findings correlated to the outcome factor like sustainable performance (SUP). In addition, each subsection stands for the findings related to the dimensions of the relevant construct.

4.3.1 Findings of Measurement Construct

The role of agricultural marketing channel relationship (AMCR)

Based on the content analysis, all participants (N=19) were agreed that agricultural marketing channel relationship (AMCR) has influenced on the sustainable performance (SUP) of the dairy industry. According to the participants' opinions, agricultural marketing channel relationship (AMCR) is an indicator of the better performance of the business. It commended that the benefits of the agricultural marketing channel relationship (AMCR) in the business as well as in the agricultural business phenomenon. Participant P5, for example, explained that: *“A supportive marketing channel relationship lucid the path of the higher business performance and non-business performance of the dairy industry. While, marketing channel members are committed to supporting the marketing of agricultural produce like dairy milk in Bangladesh.”*

Furthermore, participant P15 also justified the association between the agricultural marketing channel relationship (AMCR) and sustainable performance in the agricultural business particularly in the dairy industry in Bangladesh.

On the other hand, stand to the content analysis of all participants (N = 13) were agreed that agricultural marketing channel relationship (AMCR) also supported the understandings and implications of the governances for sustainable development of the dairy industry. In accordance with the participants' agricultural marketing channel relationship (AMCR) facilitates the formulation and implications of the governance issues for sustainable development of the dairy industry. P4 explained that: *"Agricultural marketing channel relationship made the pressure with collaborative guidance for monitoring and sustainable development"*

In addition, participant P16 addressed the importance of the agricultural marketing channel relationship (AMCR) (Channel member relationship) for proper formulation and implementation of the governance for sustainable development of the dairy industry. As he said *"Marketing channel relationship is a supporting measurement of sustainability governance. A mutually understandable relationship between the customers may bring highly acceptable governance mechanism that is an emerged to the present stand of the society"*

Based on the above references and content analysis, 4.3 have presented the illustration of the links among the agricultural marketing channel relationship (AMCR), sustainable performance (SUP) and sustainability governance (SUG). These links match the proposed model described earlier in the initial model. Table 4.3 demonstrates that all participants of the fields play a significant role in determining this particular link among the factors.

Based on Table 4.3, the findings of the table delineated that agricultural marketing channel relationship (AMCR) is an important factor for making sure the sustainable performance (SUP) in the dairy industry. In particular, the effect of the agricultural marketing channel relationship (AMCR) on the sustainable performance (SUP) and sustainability governance (SUG) has been justified according to the individual experience of the samples. Thus, the links of associations, like agricultural marketing channel relationship (AMCR) to the sustainable performance (SUP) and sustainability governance (SUG) have been evaluated.

Table 4.3 Links among AMCR, SUP and SUG

AMCR Link	Participants																			Freq
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
AMCR→ SUP	y	y		y	y	y		y	y		y	y	y	y	y	y		y	y	15
AMCR→ SUG		y	y	y		y	y		y	y	y	y		y		y	y	y		13
*Note: AMCR= Agricultural Marketing Channel Relationship, SUG = Sustainability Governance, SUP= Sustainable Performance.																				

Source: Author compiled from field study (2017)

By the content analysis study, it has found that (n=15) all samples agreed about the higher order construct, particularly agricultural marketing channel relationship (AMCR) has played a significant role in the sustainable performance (SUP) explicitly sustainable dairy industry in Bangladesh. Furthermore, qualitative study justified the link relationship between constructs, such as agricultural marketing channel relationship (AMCR) and sustainability governance (SUG). The content analysis accompanied the messages of respondents about their observations regarding the role of agricultural marketing channel relationship (AMCR) with sustainability governance (SUG) i.e. (n=13) samples agreed about the link relationship between AMCR and SUG.

With regards to the dimension of agricultural marketing channel relationship (AMCR), the content analysis of data demonstrated the six dimensions respectively. Following Table 4.4 demonstrated the findings of the dimensions.

Table 4.4 addressed six important dimensions for measuring agricultural marketing channel relationship (AMCR) in the sample country. Among the six dimensions, the content analysis supported the most significant dimension, namely 'Trust' (n=15) all samples have given the similar opinion regarding the importance of trust as a measurement tool of the relationship. In addition, 'Satisfaction' was found the highly essential in the list of the dimensions that (n=16) all samples except P15, P8 and P19 have agreed about the significance of this dimension.

Table 4.4 Dimensions of Agricultural Marketing channel relationship (AMCR)

AMCR Dimensions	Participants																			Freq
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Trust	y		y	y	y	y		y	y	y		y	y		y	y	y	y	y	15
Commitment		y	y			y	y			y	y		y	y	y		y	y		11
Co-operation	y	y	y	y	Y			y	y		y	y		y	y	y	y		y	14
Power	y			y		y	y	y	y	y		y	y	y	y	y		y	y	14
Satisfaction	y	y	y	y	y	y	y			y	y	y	y	y		y	y	y	Y	16
Communication	y		y		y	y		y	y	y	y	y	y		y	y	y	y	Y	15
*Note: AMCR= Agricultural Marketing Channel Relationship (Commercial Farmer to Commercial Buyer)																				

Source: Author compiled from field study (2017)

In addition more, ‘Communication’ has found (n=15) and ‘Co-operation’ was also found (n=14) wherever both have been justified equally important dimension in the list. Moreover, the dimension explicitly ‘Power’ has initiated an important dimension that is (n=14) maximum samples were agreed on the role of the power for measuring the channel relationship in the sample industry. Finally the dimension namely ‘Commitment’ addressed as a poor dimension in comparison to others by the samples, which has found that (n=11) i.e. except eight samples remaining have been supported that commitment has a role as a dimension of agricultural marketing channel relationship (AMCR).

4.3.2 Finding of Mediating Construct

Sustainability Governance (SUG)

In the analysis of the sustainability governance (SUG), the purpose of the study is to examine the role of the sustainability governance (SUG) as a mediating construct to the output constructs of sustainable performance (SUP). Surprisingly, maximum respondents agreed about the mediating effect of the sustainability governance (SUG) on the sustainable performance (SUP) of the dairy industry in Bangladesh.

According to the remarks of respondents, the relationship between sustainability governance (SUG) and sustainable performance (SUP) have been proposed as shown in Table 4.5. Maximum samples of the survey i.e. (n=14) perceived that sustainability

governance (SUG) has link relationship with sustainable performance (SUP), which justified sustainability governance (SUG) supported to the dairy farm for sustainable achievement in the particular industry like the dairy industry in the Bangladesh.

Table 4.5 Relationship between Sustainability Governance (SUG) and Sustainable Performance (SUP)

AMCR Link	Participants																			Freq
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
SUG→SUP	y	y	y		y	y		y	y	y	y		y		y	y		y	Y	14
*Note: AMCR= Agricultural marketing channel relationship, SUG= Sustainability Governance, SUP= Sustainable Performance.																				

Source: Author compiled from field study (2017)

Regarding the dimensions of the sustainability governance (SUG), the qualitative analysis found four major dimensions that were mentioned consistently by the respondents.

Table 4.6 Dimensions of Sustainability Governance (SUG)

SUG Dimensions	Participants																			Freq
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Business Sustainability	y	y		y	y	y		y	y	y		y	y	y		y	y		y	14
Governance Power		y			y		y	y		y	y	y		y			y			09
Integration	y		y	Y			y		y	y	y		y	y		y		y	y	12
Financial Control		y			y			y	y	y			y		Y		y	y		09
*Note: SUG= Sustainability Governance																				

Source: Author compiled from field study (2017)

The above Table 4.6 demonstrates all these dimensions, which include ‘Business sustainability (n= 14), ‘governance power’ (n= 09), ‘Integration (n=12) and ‘financial control (n=09). This Table 4.6 illustrated the perceptions of participants regarding the measurement tools (dimension) of SUG in this study. Where, all samples except P3, P7, P11, P15, and P18 were agreed that ‘Governance power would be used as dimensions of SUG. In addition, except samples P1, P3, P4, P6, P9, P13, P15, P18 and the P19 remaining was confirmed that ‘Governance power’ would be exploited as dimensions of SUG. Besides this, (n=12) respondents were showing similar perception about the employment of ‘Integration’ as a dimension of SUG. In addition, only half of the

samples (n=9) were paid earnest responses regarding the ‘Financial control’ as a dimension of sustainability governance (SUG) in the present study.

4.3.3 Findings on Moderating Factors

This part represented the findings of the qualitative analysis related to the moderating effect of the environmental uncertainty (EU) and sustainable performance in the dairy industry. With the consideration of the dimensional analysis, only a few dimensions of environmental uncertainty (EU) are presented.

Environmental Uncertainty (EU)

Based on the content analysis, all samples (n=19) perceived that environmental uncertainty has a moderating effect on the sustainable performance and all participants supported that the effect of environmental uncertainty (EU) would be an effect of complication of the achievement of the sustainable performance. According to the opinion of the participants, environmental uncertainty slows down or reduces the spirit of performance achievement of any particular for a farm like dairy farms. As described by the participant P3 and P6.

P3 respondent said that *“Environmental uncertainty is an unseen and unexpected occurrence that reduced the expected performance of the dairy industry. It has included many issues, like demand; supply; climate and political matter which reversely moderates the performances of farms in the dairy industry”* Besides this, P6 respondent said *“It is an uncertain and unconscious issue that suddenly focused and dominated the total natural performance and highly changes the existing situations”*

In addition, the influence of an environmental uncertainty (EU) as a moderating effect on the sustainable performance (SUP) of the dairy farm is also emphasized by the participants. They agreed that although they have taken many prevention and awareness programs for reducing any type of the hitches of the operation of the dairy farms, they have still affected by the different types of the uncertainty factors. Thus, the justification of the effect of the environmental uncertainty needed to consider. Samples P1 and P10 emphasized that *“Environment is an uncertain and unexpected situation, but the reactions of the environment are extremely fuzzy in regards to the customers. Interestingly, both samples emphasized that environmental uncertainty robustly*

discriminates the organizational performance among them who have suffered today and tomorrow. But in the long run, both are in the crisis for natural and artificial behaviors.

Beside of this justification, the moderating effect of the environmental uncertainty in the association between Agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) as well as the relationship between sustainability governance (SUG) and sustainable performance (SUP) can be expected. Thus, Table 4.7 demonstrated the links as said earlier.

Table 4.7 Links between Environmental Uncertainty (EU) and Sustainable Performance (SUP)

EU Links	Participants																			Freq
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
AMCR* EU → SUP	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	19
SUG* EU → SUP	y	y	y	y		y	y	y	y	y	y	y		y	y	y	y	y		16
*Note: EU= Environmental Uncertainty, SUG= Sustainability Governance, SUP= Sustainable Performance, AMCR = Agricultural Marketing Channel Relationship.																				

Source: Author compiled from field study (2017)

The earlier Table 4.7 explored the participant's view regarding the moderating effect of environmental uncertainty (EU) on the connection between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). All participants (n=19) showed similar experiences about the environmental uncertainty (EU) effect on the link of agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) i.e. AMCR*EU and SUP. Additionally, maximum participants (n=16) presented their deliberation regarding the moderating effect of environmental uncertainty (EU) on the relationship between sustainability governance (SUG) and sustainable performance (SUP) i.e. SUG*EU and SUP. In the term of the dimension, the qualitative analysis explored five more significant dimensions for measuring the effect of environmental uncertainty.

Table 4.8 Dimensions of Environmental Uncertainty (EU)

EU Dimensions	Participants																			Freq
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Demand Uncertainty	y	y	y	y	y	y	y	y	y	y	y		y	y	y	y		y	y	17
Supply Uncertainty	y	y	y		y	y	y	y		y	y	y		y	y		y	y	y	15
Competitor Uncertainty	y	y		y	y	y		y	y	y	y		y	y	y	y	y		y	15
Government Policy Uncertainty		y	y	y	y		y	y	y	y	y	y	y	y	y		y	y	y	17
Climate Uncertainty	y	y	y	y	y	y	y	y	y	Y	y	y	y	y	Y	y	y	y	y	19
*Note: EU= Environmental Uncertainty																				

Source: Author compiled from field study (2017)

Table 4.8 presented the findings of the qualitative study about the dimension of the moderating construct. Except for P12 and P17 outstanding participants demonstrated that ‘demand uncertainty’ is a crucial dimension environmental uncertainty. In addition, (n=15) samples showed their justification about the ‘supply uncertainty’ and ‘competitor uncertainty’. Meanwhile, participants (n=17) presented common perception regarding the ‘government policy uncertainty’, as well as all samples agreed about the ‘climate uncertainty’ as a dimension of environmental uncertainty.

4.3.4 Finding of Sustainable Performance (SUP) with Triple Bottom Line Frameworks Components

With the purpose of exploring the sustainable performance (SUP) practices, samples were asked to explain the sustainability frameworks that are extremely used in the contemporary period for measuring the sustainability. Based on their description, a qualitative analysis particularly content analysis was conducted to determine the components of the sustainability frameworks and relationship among the components. Whole, findings exposed that the sustainability frameworks involve three components, particularly ‘economic sustainability’, ‘social sustainability’ and ‘environmental sustainability’.

In the term of the relationship among the components of sustainable performance (SUP), all respondents agreed about the complexity of components relationship.

According to samples, theoretically when people talk about the sustainable performance, then there are aware of the three performances at a time for examples ‘economic sustainability’, ‘social sustainability’ and ‘environmental sustainability’. The participants explained the measurement constructs of the sustainable performance under triple bottom line frameworks. The Table 4.9 demonstrated by the findings related to the dimensions of sustainability under triple bottom line frameworks.

Table 4.9 Dimensions of Sustainable Performance (SUP) with TBL

Dimensions of SUP	Participants																			Freq
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Economic Sustainability	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	19
Social Sustainability	y		y	y			y	y	y		y		y	y	y	y	y		y	14
Environmental Sustainability	y	y	y		y	y		y		y	y	y	y	y	y	y		y	y	15

*Note: SUP= Sustainable Performance

Source: Author compiled from field study (2017)

Table 4.9 demonstrated the results of the qualitative analysis in the context of samples perception regarding the dimensions of sustainable performance (SUP). Whereas, the highest number of respondents (n=19) shown their observation regarding ‘economic sustainability’ with the other dimensions. In this qualitative study it has been found that the second largest number of respondents (n= 15) have been shown their response about the ‘environmental sustainability’ But, interestingly minimum respondents (n=14) concentrated in the ‘social sustainability’ as a dimension of sustainable performance (SUP). Hence, after qualitative analysis of the data, it was validated that sustainable performance reflected by the three dimensions, such as ‘Economic sustainability’; ‘Social sustainability’ and ‘Environmental sustainability’.

4.3.5 Finding the other Relevant Factors

As said earlier, primary purposes of field study is to examination of the initial model as proposed earlier and assessing the applicability of the model on the sample industry and country. The study also focuses on the exploration of issues and topics related to present research in order to enrich the explanatory power of the model. Based on the qualitative analysis, a new fact has been found regarding the dimension of

environmental uncertainty. The participants (n=10) highlighted the factor ‘political uncertainty’ is an important dimension for sample country and industry. All samples justified their views with a strong shade of evidence. They told that *‘milk is a highly perishable product in the basket of the agricultural and non-agricultural product. In addition, farmers could not control the production size immediately because mammal has produced it by the nature and blessing of God’*. Hence, according to sample opinion among others uncertainty, sometimes ‘political uncertainty’ considered as principal uncertainty in the sample industry and the country.

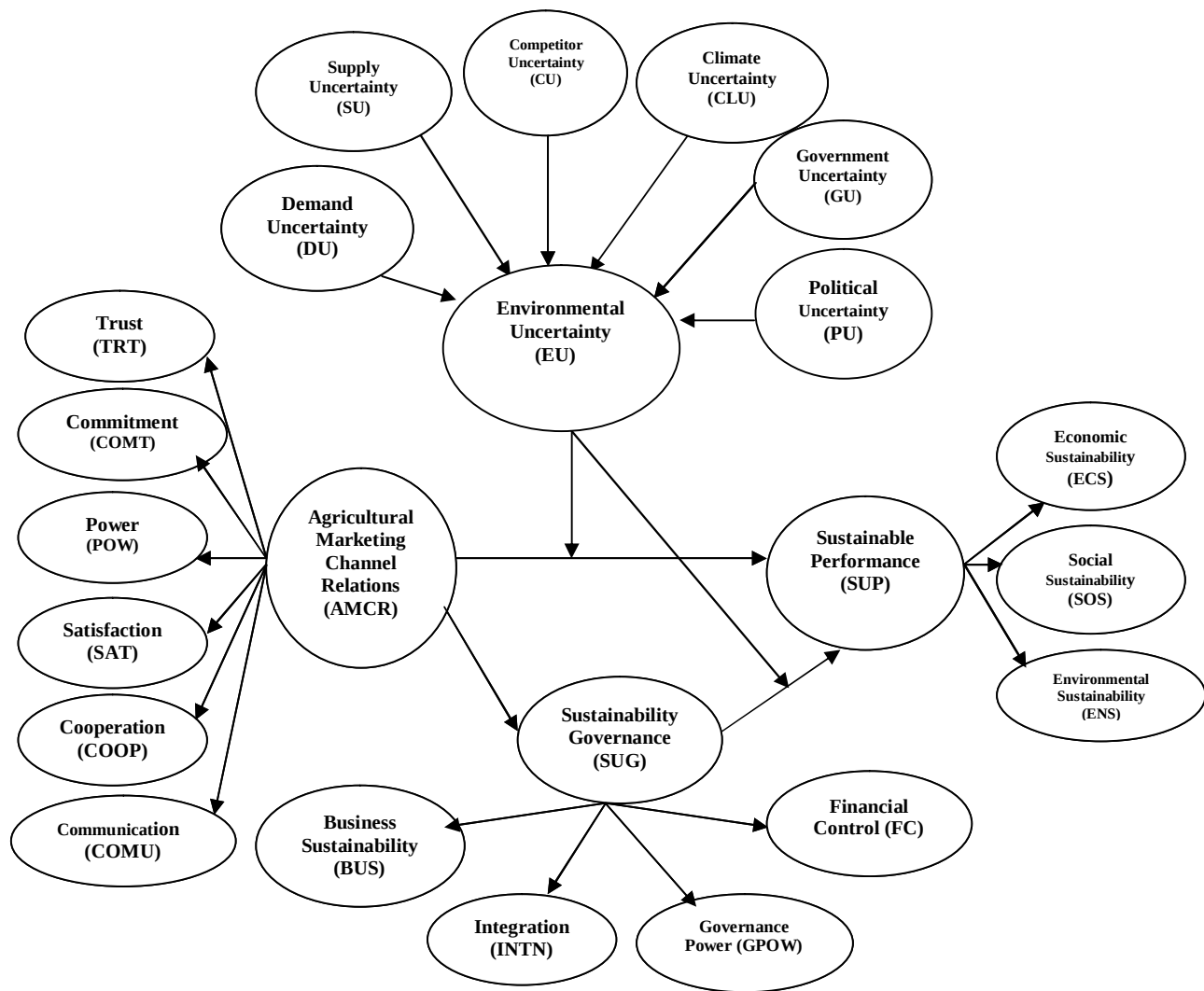
In the field study period, participants were introduced to a few new dimensions in the first order constructs, like in AMCR (shared value, empathy, social communication, and psychological preparation), SUG (good governance) and EU including political uncertainty. But, a maximum of the proposed new dimension did not find repetition by the other participants except political uncertainty. Hence, according to the concept and principle of content analysis, those new dimensions were not making nodes in the field study model.

4.4 Field Study Model

Based on the content analysis the field study model was developed. The procedure was to develop a field study model combining the entire constructs and dimensions in order to provide the quantitative elements for the research. As a result of this comparison, figure 4.2 is proposed. This model indicates that qualitative data provide a unique contribution to the subject of factors and variables that influence the sustainable performance.

According to the model, a variety of factors can be assumed by explaining the influence of the sustainable performance. In addition, beside the factors that have been anticipated in the earlier in the initial model, as discussed in the figure 2.5 such as (demand uncertainty, supply uncertainty, competitor uncertainty, government uncertainty and climate uncertainty) there is another dimension found by the content analysis particularly ‘political uncertainty’. The findings also proposed dimensions of the sustainable performance under triple bottom line (TBL) frameworks like economic sustainability, social sustainability and environmental sustainability. Finally, the model provides a full representation of sustainable performances.

Figure 4.2 Field Study Model of the Research



Source: Author compiled from field study (2017)

Moreover, it developed dimensions of the constructs in the model that are valid and reliable. The field study result addressed the complete analysis of the first stage (inductive phase). Therefore, in the next part, the analysis is carried out that involves the deductive phase as described in the above figure 4.2.

4.5 Comparison between Findings of the Field Study and Initial Model (2nd Stage: Deductive Analysis)

This phase is comparatively more significant, where the models from the quantitative and qualitative analysis are reviewed. There are three steps in this phase. In the first step, a comparison between the initial model and the field study model was carried. In the second step, the findings of the field study were cross-checked in order to select the

highly significant constructs that represent the measurement dimensions of the sustainable performance (SUP). This step has drawn attention for careful efforts. According to the investigation, findings related to the factors of the sustainable performance (SUP) were determined.

With different factors that were included in the initial research model for measuring the first order construct like AMCR, SUP, SUP and EU. One dimensional factor, such as ‘political uncertainty’ mentioned earlier was consistently introduced by the participants as measurement dimensions of environmental uncertainty. As shown in table 4.10, near about 52.63% (n=10) of respondents perceived that political uncertainty could format the environmental uncertainty. Thus, additional analysis of political uncertainty was included as a formative dimension of the environmental uncertainty.

Table 4.10 Findings Related to Political Uncertainty

EU Dimensions	Participants																			Freq
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Political Uncertainty	y		y	y	-	y		y		y	y	-	y		y			y		10
*Note: EU= Environmental Uncertainty																				

Source: Author compiled from field study (2017)

In the third step, all the selected constructs and dimensions derived from the second steps are justified with the existing literature. An incorporated table is developed to show the explanation of this dimension. This process has been carried out to ensure the capability and adequacy of the dimensions based on the empirical studies. As a result, a comprehensive research model that included the appropriate findings from the field study as shown in figure 4.2 and the initial model as shown figure 2.5 were developed. Therefore, figure 4.2 illustrated in this comprehensive model.

4.5.1 Findings of Political Uncertainty

As mentioned earlier, findings of content analysis addressed that ‘political uncertainty’ is a dimension of environmental uncertainty. Almost, all participants highlighted that this dimension could influence the way of constructs relationship with sustainable performance in other dimensions of the same moderating construct. Participant P3, P8 and P11 for example, in justification of their opinion about the influence of political uncertainty stated;

“Political contribution for any development is very important. But unfortunately, in our country like Bangladesh post-election political demonstration i.e. the strike has harmed the regular performances of business and non-business operations. By this consequence, the strike has influenced the distribution channel disruption and demand fluctuation for dairy milk and dairy product in this country. Thus, this is important to us, for calculating the effect of uncertainty from the political demonstration.” (P3)

In addition, another participant also emphasized that political uncertainty hindered the economic performance of the sample industry. As mentioned by the participant P11

“Political demonstration can make the disruptions in the regular operations, sometimes for a company losing their property and others. By this way, farms failed to fulfill their target of financial return from dairy projects. Political demonstration highly affected the agricultural industry, particularly the dairy industry for processing and distribution of liquid milk.” (P11)

Besides this, some respondents addressed that political uncertainty influences the social and environmental performance the dairy industry. As discussed earlier respondent P3, P15 and P18 for example, in describing as stated;

Due to political demonstration farms have been losing regularly. As a result, many workers lose their jobs and the existing employees can not enjoy the regular wages. So, social performance dimensions were very much neglected by producers as well as environmental dimensions has mistreated farmers” (P8).

4.6 Justification of the Findings in the Literature Review

This part of the report shows the evaluation regarding the selection of higher-order constructs and measurement dimensions on the basis of literature review. It is focused that the selected factors and dimensions have been derived from the field study. Hence, this evaluation developed the competency and adequacy of every constructs and dimension in the existing literature. Following the Table-4.11 represents the constructs and the dimensions that have been the finalized and the major sources of the related literature support.

Table 4.11 Justification of the Findings of the Field Study with Literature

Construct	Dimensions	Sources
Agricultural marketing channel relationship (AMCR)	Trust	(Anderson & Narus 1990; Anderson and Weitz 1989, 1992; Anderson & Narus 1990; Ganesan 1994; Heide & John 1988; Morgan & Hunt 1994; Wilson (1995); Batt, 2003; Zboja & Voorhees, 2006; Field Study
	Commitment	Anderson & Weitz 1989, 1992; Anderson & Narus 1990; Ganesan 1994; Heide and John 1988; Morgan & Hunt 1994; Wilson, 1995; Field Study.
	Satisfaction	(Anderson & Narus 1990; Anderson & Weitz 1989, 1992; Anderson & Narus 1990; Ganesan 1994; Heide & John 1988; Morgan & Hunt 1994; Wilson (1995); Boniface, 2011; Field Study
	Power	Anderson & Weitz 1989, 1992; Anderson & Narus 1990; Ganesan 1994; Heide and John 1988; Morgan & Hunt 1994; Batt, 2003; Wilson, 1995; Field Study.
	Co-operation	Benton & Maloni, 2005; Brown et al., 1995; Maloni & Benton, 2000; Frazier, G.L, 1983b; Wilson, 1995; Field Study.
	Communication	Anderson & Weitz 1989, 1992; Anderson & Narus 1990; Ganesan 1994; Heide & John 1988; Morgan & Hunt 1994; Field Study.
Sustainability Governance (SUG)	Business Sustainability	Dauvergne & Listert ,2011; Field study
	Integration	Duxbury & Dickinson, 2007; Kemp et al., 2005; Field study
	Governance power	Dauvergne & Listert ,2011; Field study
	Financial control	Duxbury & Dickinson, 2007; Kemp et al., 2005; Field study
Sustainable performance (SUP)	Economic sustainability	GRI (2002, 2011); FAO (2014); 4C; UTZ; UNMDG ; Field study
	Environmental sustainability	GRI (2002, 2011); FAO (2014); 4C; UTZ; UNMDG ; Field study
	Social sustainability	GRI (2002, 2011); FAO (2014); 4C; UTZ; UNMDG ; Field study.
	Demand uncertainty	Li (2002); Paulraj & Chen (2007); Field study

Environmental Uncertainty (EU)	Supply uncertainty	Van der Vorst (2000); Li (2002); Paulraj & Chen (2007); Field study
	Competitor uncertainty	Li (2002); Field study
	Climate uncertainty	Cruz et al (2007); Field study
	Government policy uncertainty	Javidan (1984); Badri et al.(2000); Von & Bos (2005); Field study
	Political uncertainty	Chowdhury & Quaddus (2015); P'astor & Veronesi, 2010; Durnev, 2010; Field study

Source: Author compiled from literature review and field study (2017)

As shown in the aforementioned table, each construct and dimensions have justified according to the main references of the existing literature.

4.7 Comprehensive Research Model

As discussed earlier, an assessment was conducted between the initial model and the findings of the field study to justify the selected constructs and dimensions. Hence, this part puts forward a comprehensive model for the current research as verified by Figure 4.2. The comprehensive model, 'agricultural marketing channel relationship (AMCR) and sustainable performance (SUP)' refers that sustainable performance is required for the marketing channel relations for enhancing the sustainability. This model has four higher-order constructs: Agricultural marketing channel relationship (AMCR), sustainability governance, (SUG) environmental uncertainty (EU) and sustainable performance (SUP). Agricultural marketing channel relationship (AMCR) measured by the dimensions: trust, commitment, satisfaction, power, cooperation and communication. In addition, sustainability governance (SUG) is measured through the dimensions: business sustainability, integration, governance power and financial control. Moreover, the outcomes construct sustainable performance (SUP) is measured through the dimensions: economic sustainability, social sustainability and environmental sustainability. Finally, the moderating constructs environmental uncertainty (EU) is measured by the dimensions: demand uncertainty, supply uncertainty, competitor uncertainty, climate uncertainty, government policy uncertainty.

Except the newly generated dimension construct related to environmental uncertainty in the field study (political uncertainty as shown in the Table 4.11 all higher-order constructs and dimensions are discussed in Chapter 2. In the moderating construct (environmental uncertainty part) of the comprehensive model, a new dimension, namely “political uncertainty” was added along with the traditional uncertainty dimensions like demand uncertainty, supply uncertainty, competitor uncertainty, climate uncertainty, governmental uncertainty. According to the participants, the dairy farm has been suffering the political instability that harms the distribution system and it reduces the financial performance. Maximum respondents pointed out that at the time of political unrest or instability channel members were unwilling to participate in the channel performances such as they showed an unwillingness to buy the liquid milk for processing and value creation. Hence, the dairy farm (producers) could not sell the liquid milk to the target customers and they tried to sell in the local market with nominal price. But in maximum time unsold milk was damaged. Thus, it has been evident that political uncertainty is also an important dimension for measuring the environmental uncertainty in the dairy industry in Bangladesh.

Literature support for Political Uncertainty

Earlier studies recognized that political uncertainty is a burning issue in the globe at present. It is not only prioritizing matter for the Asian and African countries but also it is prominent in Europe and the United States. The concept of the political uncertainty is underlying and ideological. It refers to the political uncertainty is unpredictable and unknown circumstances, where a citizen or organizations have no forecast regarding the political issue and governmental behavior at a particular time. Basically, political uncertainty reflected by the political instability or political situation is highly unstable that has made the uncertain situation for the economic efficiency of investment and tumbling of the social desirability and environment will be degraded. On this regards many empirical studies explored the political uncertainty key dimensions and factors in the different industries like the financial sector (P’astor & Veronesi, 2010; Durnev, 2010) environmental sector and agricultural sector.

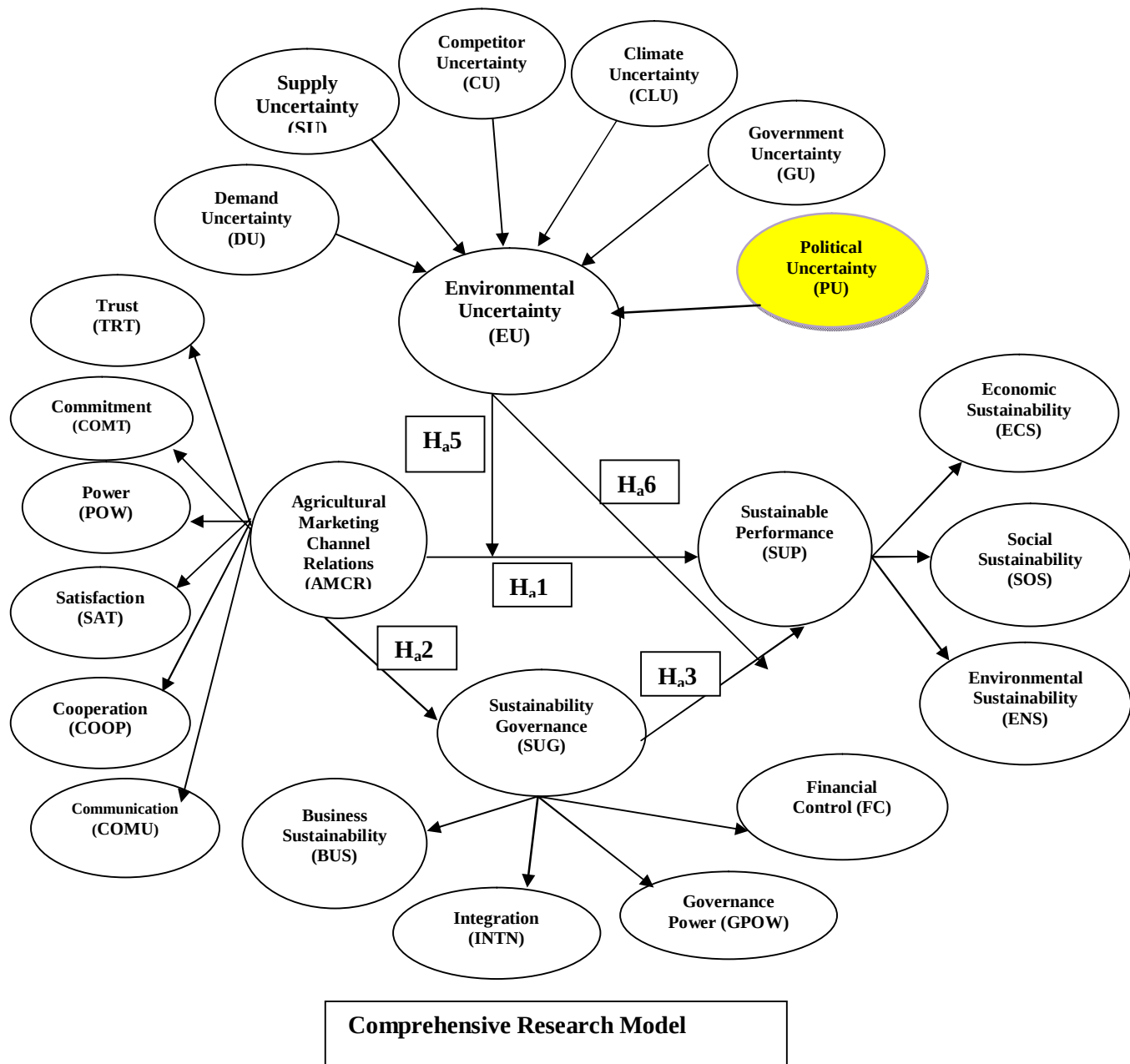
Many pedantic studies remarked that the government is motivated by both economic and non-economic objectives: it exploits the investors’ welfare, as a social planner would, but it also takes into account the political costs (or benefits) associated with

adopting any given policy. These costs are uncertain, as a result of which investors cannot fully anticipate which policy the government is going to choose. Uncertainty about political costs is the source of political uncertainty in the model (Pástor & Veronesi, 2010). But in this study, interpret political uncertainty mainly as uncertainty regarding the political instability as well as pre-election and post-election violence. Thus, political uncertainty recognized powerful dimension in the list of the environmental uncertainty manifest construct in the research model that has explored by the field study through the qualitative analysis. After evaluation of field study findings, it has concluded that except consideration of political uncertainty the concept of uncertainty may not clear and complete.

Following comprehensive justification between the initial research model and field study model, a comprehensive research model has been developed and shown in Figure 4.2.

This figure characterizes a comprehensive and final model that can be tested according to research hypothesis: agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) that have been developed by the subsequent process. At the first stage, an initial research model shown in figure 2.5 was developed. Then, at the second stage, the initial research model was contextualized and validated by the findings of the field study. A field study model showed figure 4.2 was developed at this stage. A new dimension, namely 'political uncertainty' as shown in Table 4.11 was incorporated from the field study. At the third stage, comparison was made between the initial research model and the field study model. Finally, developed a comprehensive model or final testable, which shown in figure 4.3 as follows.

Figure 4.3 Comprehensive Research Model



Source: Author compiled from field study (2017) and literature review

4.8 Conclusion

This part of the thesis demonstrated the findings of the qualitative field study and proposed research model. The main purpose of the field study was to examine the practical background of the initial model and applicability that found and proposed as per justifications of the literature review. Through face to face interview techniques, 19

interviews were conducted for the collection of the qualitative data from the targeted sample that represents the proposed research according to research methods. Inductive and deductive phases were employed in the content analysis technique for qualitative field study data. A relevant measurement construct, like political uncertainty, was explored which were further scrutinized in the light of the literature review. Based on the comparison between the conceptual model and the field study model, a comprehensive model was developed. This model demonstrates the dimensions and the structural relationship among political uncertainty in the context of the dairy industry in Bangladesh. In the next chapter (Chapter 5), hypotheses will be developed from this comprehensive model which will be further examined with quantitative data (Chapter 6).

Chapter-5: Hypothesis and Questionnaire Development

5.1 Introduction

As presented in chapter four the field study has been confirmed about the multidimensional constructs, which can influence the sustainable performance of the dairy industry in the context of Bangladesh. Through qualitative analysis, have been justified the dimensionalities of each construct in the earlier discussions. In addition, a new measurement construct has explored included in the comprehensive model for the current research. According to this model, this chapter presents the hypotheses in consideration of the field study which were evaluated by the relevant literature. More specifically, the research hypotheses examine the relationship among the constructs as proposed in the model, which includes '*agricultural marketing channel relationship*', '*sustainability governance*', and '*environmental uncertainty*' with '*sustainable performance*' were also established. Following the proposition of the research hypotheses, the development of the survey instruments in order to test these hypotheses are also reported in the remaining of this chapter.

5.2 Hypothesis Development

5.2.1 Hypothesis regarding the Agricultural marketing channel relationship (AMCR) to Sustainable Performance (SUP)

Channel members' transactions and relationships are considered as an old form of relationship that began from the trading of goods and services. These relationships were developed in a natural way and continued for ensuring the quality products and services (Wilson, 1995). In the agricultural marketing domain, channel member relationship refers the producers' and others cooperation and communication regarding their produces with each other channel members. The channel members are interested for building up a single supplier for creating pressure to increase quality and decrease inventory, establish just-in-time structure, and reduce time to market that are outcomes of the channel members' relationship. Besides this, buyer- supplier collaborative practices are highly effective for improving delivery and quality performance, cost performance, competitive advantage and organizational performance. All of above statements supported the outcomes of the relationship among the channel members. These results proved that a strong marketing channel relationship can support to

increase the business performances that were mostly financial performance. On the other hand, sustainable performance is defined to make a balance between economic, environmental, and social aspects in the 'triple bottom line' (TBL) context (Elkington, 1997) which has been recently discussed as the concept of three pillars: profits, planet, and people (Kemp & Martens, 2007).

According to earlier studies, marketing channel members' relationship contributes to the business performance, particularly on economic performance. Many supplement research studies supported the role of the marketing channel relationship, particularly suppliers and buyers' relationship for overall performance. For instance, Redondo & Fierro (2005) stated that creating, developing and maintaining lasting customers-suppliers' relations enrich the organizational profitability that partially endorsed the overall performance developed by relationship.

Most of the empirical studies noted a better relationship for better performance. Their studies did not highly emphasize the ESC (economic, social and environmental) performance as focused by sustainable performance model (Elkington, 1997). But, in the qualitative study, the respondents were asked about the connection between agricultural marketing channel relationship (AMCR) with sustainable performance (SUP) (economic, social and environmental) of the dairy industry in Bangladesh. Among the respondents, maximum respondents opined that obviously better relations with channel members will enhance power to reduce the risk and cost of production and supported to offer quality products to the people within the reasonable price with minimum utilization of natural resources with higher level consciousness about the planet. Based on the above arguments and support of qualitative research findings, it can be hypothesized that:

Hypothesis 1 (H_{a1}): Agricultural marketing channel relationship (AMCR) has a positive relationship with sustainable performance (SUP) of the dairy industry in Bangladesh.

5.2.2 Hypothesis Related Agricultural marketing channel relationship (AMCR) to Sustainability Governance (SUG)

Governance creates a competitive advantage to the organization, which reduce unpredicted situations of deployment and development of resources (Sanders & Carpenter, 2003; Smith et al., 2005). In addition, Kooiman, (1993) state that governance is implicit an approach to social coordination, unlike governing, guiding, control along with managing society. Furthermore, Young (1994) described that governance is involved in determining and operating social organizations capable of settling disputes, facilitating cooperation and alleviating communal action problems. Structures of governance are extended from the local and regional to the national and international, and different modes of governance predominate in diverse spheres of social life. Also, governance structures organized negotiation process, determine objectives, influence motivations, set standards, perform allocation functions, monitor compliance, impose penalties, initiate and/or reduce conflict, and resolve disputes among actors (Eden & Hampson, 1997). Whereas, sustainability governance (SUG) is a form of governance structure that encircled customers, like (i) public sector, (ii) private sector, and (iii) civil society together for governing the operations of any organizations and individuals according to the standard of sustainable development (Delma & Young, 2009). Outcomes of the governance were highlighted consequently, but sustainability governance (SUG) can be performed better than the conventional governance structure due to structural or framework benefits.

Agricultural marketing channel relationship (AMCR) demonstrated the relationship of the private sector customers. But, the relationship reflected by the dimensions such as trust, commitment, power, cooperation, satisfaction and communication. Also, those dimensions may increase the power of the customers for better governance in the field of the dairy industry in Bangladesh for sustainable performance. Many empirical studies were addressed for the importance of the governance in the different sectors and highlighted the outcomes of the proper governance along with mentioned ways of governance. But, those studies did not mention the impact of the relationship on the sustainability governance (SUG) specifically in the domain of agricultural marketing.

On the basis of empirical studies, it was asked of the respondents in the qualitative study regarding the link relationship of (AMCR) in sustainability governance (SUG).

Maximum respondents told that maximum level of the relationship with the customers represented the maximum level of communication among them. Hence, maximum relationship with agricultural marketing channel relationship (AMCR) may maximize the power of governance for sustainable development of the dairy industry with just time sharing knowledge and experiences among the customers, particularly channel members. These empirical and field study arguments lead to hypothesize that:

Hypothesis 2 (H_{a2}): Agricultural marketing channel relationship (AMCR) has a positive relationship with sustainability governance (SUG) of the dairy industry in Bangladesh.

5.2.3 Hypothesis regarding the sustainability governance (SUG) and Sustainable performance (SUP)

Sustainability governance (SUG) has explained as a governance structure with integrated governance approach, where all stakeholders' interact with each other as a requirement of the governance construction. The findings of the different studies recommended that the absence of a good governance mechanism may incorrectly deploy the financial resources and the suffering quality of resource deployment decisions. Thus, through efficient monitoring, governance should influence the effect of a farm's dynamic capability on its performance. In addition, Smith et al. (2005) have justified the consistent interests of shareholders regarding the governance. Therefore, governance can effectively facilitate marketing managers' capability to make economic value-maximizing deployments by reducing diversions that lead to inefficient marketing capability as well as enhance the monitoring and control of production activities, while improving the overall performance of farms (Bhagat & Bolton, 2008; Gompers et al., 2003). Basically, greater monitoring and control ease opportunism and preserve farms' incentives to share knowledge with their managers. Farms can more confidently pool their capabilities with their managers (Core et al., 2006). Under such circumstances, an efficient system of governance should facilitate the credibility and commitment of managers (Lehrer, Tylecote & Conesa, 1999).

Sustainability governance (SUG) controls the disruptions and vulnerabilities as well as reducing the policy debates among the customers in the context of the sustainable performances. Sustainability governance (SUG) supported to engage all stakeholders to

formulate the policies and building a collaborative structure for implementation of the pre-designed policies that bring mutual benefits to all. Those have been recognized as outcomes of the sustainability governance. Those benefits of sustainability governance (SUG) in organization and industry are indirectly confirmed by earlier studies.

Sustainability in the context of 'business sustainability' has been identified in a variety of concepts. Traditionally in the social research, it has focused on corporate social responsibility (CSR) e.g. (Adizes & Weston, 1973) and in the environmental research, it has been focused on environmental management e.g. (Shrivastava, 1995). The researchers who support on the meaning of WCED in a wider concept to recognize sustainability as a three-dimensional construct incorporates such as economic, social and environmental dimensions (Bansal, 2005; Gladwin & Kennelly, 1995). In addition, Bansal (2005) illustrated that i) economic affluence as a principle promotes a sagacious quality of life organizations and society ii) environmental honesty as a standard guarantee that human activities do not decay nature or environmental resources iii) social equity as a standard indicates that all social members have equal admittance to social resources and opportunities.

But, sustainable performance (SUP) is not free from any type of disruptions and conflicts as well as a conventional and autocratic policy that has made obstacles on the way to the sustainable performance of any particular organizations and industries. Such as failure of different types of social issues such as poor working conditions, failure to address safety and health factors, labor unrest and dissatisfaction, reputation loss in the market and others (Chowdhury, Sarker, & Afroze 2012; Sellnow & Brand 2001; Ageron, Gunasekaran, & Spalanzani, 2012. On the other hand, society apprehension as regards environmental issues has increased significantly as customers, regulatory bodies and non-governmental organizations (NGOs) are increasingly demanding organizational programs to manage environmental issues (Carter & Easton, 2011; Gupta, 1995). In the field study period, it was found that many types of social pressures to the dairy farm and farmers regarding the quality, environment and social status (dignity). Those circumstances demonstrated the complexities of the sustainable performance. According to justifications of the recommended outcomes of the governance such as (e.g. Smith et al., 2005; Bhagat & Bolton, 2008; Gompers et al., 2003; Core et al., 2006; Lehrer et al., 1999) it has been identified that remarkable

hindrances of the sustainable performance (SUP) will be overcome through adaptation of the sustainability governance (SUG).

Besides this empirical evidence, it also asked respondents of qualitative study about the relationship between the sustainability governance (SUG) and sustainable performance (SUP) in the dairy industry in Bangladesh. Among them, majority respondents have supported the relationship between the sustainability governance (SUG) and sustainable performance (SUP). Based on the above theoretical and qualitative opinions motivated for hypothesized that:

Hypothesis 3 (H_{a3}): Sustainability governance (SUG) has a positive relationship with sustainable performance (SUP) of the dairy industry in Bangladesh.

5.2.4 Mediation role of (SUG) between (AMCR) and (SUP)

The dimension of the agricultural marketing channel relationship (AMCR) has addressed the role of the relationship on the performances of any particular organizations or individual. By extensive review of earlier studies as discussed in the chapter-2, the relationship has a positive influence on the performance of the organization. It has found that better marketing channel relationship not only enhances the economic performance of organizations but also supports to establish social equality and environmental integrity which have reflected the sustainable performance. According to empirical studies e.g. Chowdhury et al. (2012); Sellnow & Brand (2001); Carter & Easton (2011); Gupta (1995) performances of organizations were regularly disordered by the many shapes of vulnerabilities and pressures from inside and outside of the industry. These circumstances are not pleasant situations for any organizations. Those unpleasant situations made a negative impact on the expected performances of the organizations and create tremendous pressure on the legal authorities to reduce the difficulties of natural performances of the stakeholders.

Meanwhile, many earlier studies e.g. Smith et al. (2005); Bhagat & Bolton (2008); Gompers et al. (2003); Core et al. (2006); Lehrer et al. (1999) were recommended governance can make a support to ascertain normal performance, particularly the pressure by indoors and outside connections in the industry. Governances considered as the fundamental issue of administration in the marketing channels (Stern, 1969). By this perception (Williamson, 1999) has recommended different plans, market structure–

based approaches like coercive pressures, market reliance (Frazier, 1983b) and relational standards (Zhang, Cavusgil, & Roath, 2003; Heide, 1994) inducement systems (Jap & Ganesan, 2000). These strategies were prescribed to repress partner farms' competitively improved and promoted desired behaviors. In addition, those strategies were substantiated by two most popular theories like the transaction cost approach and social exchange theory. Many theories like social exchange theory and relational contracting theory support to develop and maintain a long-term mutual relationship.

A research paper Uzzi (1999) stated that relational strategies focused on an endogenous system which enhanced the exchange performance through flows of public information with social attaches, rather than influence a by third parties. Apparently, those categories of governance strategies harmonize each other and can emerge concurrently in marketing channels (Heide & Wathne 2006; Jap & Ganesan, 2000). Hence, sustainability governance (SUG) is a governance strategy that compiled basic concept of market-based strategy and relational strategies of governance for making an accession to reduce the on- transferable business and non-business vulnerabilities. This also assists in achieving the natural performance of an organization that has been focused on sustainable performance. The success factors of channel governance propose that successfully develop the farm's individual performance and encouraging distributors to team up and progress channel relationships (March, 1994). While, satisfied distributors are willing to have long-term channel commitment and superior channel performance, which can be assured by the manufacturers or customers also.

In addition, according to empirical evidence, it was also asked respondents in the qualitative study regarding the mediating effect of the sustainability governance between the agricultural marketing system (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh. Among the respondents, the majority agreed that an appropriate governance mechanism like (sustainability governance) may reduce the vulnerabilities and other hindrances from internal and external customers and others, who facilitate the sustainable performance of the dairy industry in Bangladesh. Hence, the results of the field study and empirical confirmations exposed for hypothesized that:

Hypothesis 4 (H_{a4}): Sustainability governance (SUG) mediates the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh.

5.2.5 Moderated role of environmental uncertainty (EU)

Environmental uncertainty is an undesirable situation, in the globalization era and it has different shapes in the business and non-business sectors. Many scholarly studies were highly concerned about the environmental uncertainty. Uncertainty defines an unpredictable situation that has arisen due to lack of proper information regarding subject to matters. Furthermore, empirical studies, like Galbraith (1973); Milliken (1987); Downey et al. (1975) have detailed the uncertainty in the earlier discussion (literature review). Furthermore, Duncan (1972) delineated ‘environment’ as a physical and social issue that arrive from outside of the organizational boundaries that are taken into consideration during decision-making. Besides this, Burns & Stalker (1961) stated that environmental uncertainty may be the consequence of the modification of market operations and in technology.

Environmental uncertainty is calculated as a significant measurement for several constructs linked to marketing channel member behavior. In addition, Achrol, Reve & Stern (1983) asserted that an environmental uncertainty would direct to more implementation of problem-solving and influence strategies for disagreement resolution among channel partners. According to Celly & Frazier (1996) outcome based coordination efforts are unlikely to serve as motivators during the period of environmental uncertainty. Environmental uncertainty holds a powerful influence to drive the marketing channel partners to their choice and in this way, the doubts are highlighted regarding about the durability of positive market conditions. Thus, it has concluded that perceptions of environmental uncertainty will prevent the channel members’ sentiment of promise towards the relationship. External environment leads to building inter-farm relationships. Therefore, exogenous factors may moderate the effects of the focal constructs on performance. To provide a more comprehensive evaluation of the different frameworks, many studies have evaluated the contextual effects across the theoretical perspectives. Environmental uncertainty, most frequently studied the exogenous factors, plays a solution role in the inter-organizational

relationships and socioeconomic and environmental performances of any organization like the dairy industry in Bangladesh.

Besides, the empirical and theoretical substantiations the study asked the respondents regarding the moderating role of the environmental uncertainty and its measurement construct. Among the respondents of the qualitative study, highest numbers of respondents were mentioned that the producers (farmers) and other channel members are regularly affected by the environmental uncertainty. They highly focused on the environmental uncertainty and the influence of it on the performances (ESE) in the agricultural industries due to the nature of products and market structure in the developing countries like Bangladesh. As a sufferer, respondents further mentioned that in Bangladesh agricultural products are highly perishable like liquid milk producers have been suffering from many types of uncertainty factors, which made hindered or negative effect on the regular (ESE) performance of any dairy farm and industry.

With empirically identified measurement constructs of the environmental uncertainty, respondents were recommended another measurement construct such as political uncertainty for the dairy industry in Bangladesh. For justifying their recommendations, respondents highlighted the previous year's (1971-2014) political unrests along with the behavior of marketing channel members as the causes of farmer's financial and non-financial losses. After analysis of that data, it was found that situations were really horrible and unjustified for any farmers who are living in the middle class and upper lower classes in the society. The evidence of empirical study and qualitative study highly motivated to take the following hypotheses as proposed:

Hypothesis 5 (H_{a5}): Environmental uncertainty (EU) has negatively moderated the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh.

Hypothesis 6 (H_{a6}): Environmental uncertainty (EU) has negatively moderated the relationship between sustainability governance (SUG) and sustainable performance (SUP) of the dairy industry in Bangladesh.

5.3 Summary of Hypothesis Development

Finally, there are six (06) hypotheses described and shown in a different level of relationship based on the comprehensive research model as proposed in an earlier chapter presenting all the hypotheses as developed above. The following Table 5.1

exhibited the summary of the research hypotheses that proposed by the justification of literature review and field study results.

Table 5.1 Summary of Developed Hypotheses and Statement

Link	Hypothesis	Effect	Hypotheses statement
AMCR $\longrightarrow$ SUP	Hypothesis-1 (H _{a1})	Positive (+)	An agricultural marketing channel relation (AMCR) has a positive relationship with sustainable performance (SUP) of the dairy industry in Bangladesh.
AMCR $\longrightarrow$ SUG	Hypothesis-2 (H _{a2})	Positive (+)	Agricultural marketing channel relationship (AMCR) has a positive relationship with sustainable governance (SUG) of the dairy industry in Bangladesh.
SUG $\longrightarrow$ SUP	Hypothesis-3 (H _{a3})	Positive (+)	Sustainability governance (SUG) has a positive relationship with sustainable performance (SUP) of the dairy industry in Bangladesh.
AMCR $\longrightarrow$ SUG $\longrightarrow$ SUP	Hypothesis-4 (H _{a4})	Positive (+) / Negative (-)	Sustainability governance (SUG) mediates the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh.
EU*AMCR $\longrightarrow$ SUP	Hypothesis-5 (H _{a5})	Negative (-)	Environmental uncertainty (EU) has negatively moderated the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh.
EU*SUG $\longrightarrow$ SUP	Hypothesis-6 (H _{a6})	Negative (-)	Environmental uncertainty (EU) has negatively moderated the relationship between sustainability governance (SUG) and sustainable performance (SUP) of the dairy industry in Bangladesh.

[Note: symbol of * demonstrates the interaction effect of the moderating variable]

Source: Author compiled from literature review

In addition, figure 4.3 represented the illustrated hypotheses in the research model. In order to experiment these hypotheses, a set of questions were developed. The next section provides the particular of the development of the questionnaires that used in the present study for collection of primary data to test the proposed hypotheses.

5.4 Questionnaire Development

5.4.1 Overview of the Questionnaire

To collect the respondents' opinion throughout the survey, a structured questionnaire has been developed on the basis of empirical studies, theories and relevant academic and non-academic literature in the present research. The questionnaire has been designed to substantiate the research hypotheses according to the comprehensive research model shown in figure 4.3. Generally, the questionnaire was enclosed with 112 (One Hundred Twelve) questions. It was divided into two important sections. Where, section-1 demonstrates the information about the demographic backdrop of respondents. This part includes 08 (Eight) questions. On the other hand, section-2 was segmented into four parts including 104 (One Hundred Four) questions according to the focus point of the research. The first part of the section-2 (Part-A) represents the measuring items and condition of the 'Agricultural marketing channel relationship (AMCR), particularly sample farm relationship with a buyer in the distribution channels as well as commercial milk processing company relationship with their customers. In addition, the third part (Part-B) characterizes the dimensional items of mediating construct like 'Sustainability Governance (SUG)' and the fourth part (Part-C) highlighted the items of moderating construct that manifested the measures in the 'Environmental Uncertainty (EU)' mostly the forces and influences the natural performance of the constructs. Finally, (Part-D) was embodied with measurement items of the sustainable performance (SUP) with three specific dimensions like economic, social and environmental sustainability.

The matter of 'Common Method Bias (CMB)' has been measured in developing the questionnaire of the present research. According to Meade, Watson and Kroustalis (2007) Common Method Bias (CMB) demonstrates the "degree to what correlations are changed due to a methods' effect". In addition, Schwarz et al. (2008) addressed that CMB arises "while the same technique is used to measure correlations between variables'. Different sources of 'Common Method Bias' (CMB) are associated with 'items characteristic effects' have been determined by earlier research (Podsakoff, MacKenzie & Podsakoff, 2003). The examples of this bias include; 1) 'reverse coded or negatively worded items' and 2) '(SDB) Social Desirability Bias' (Podsakoff et al., 2003; Meade et al., 2007). For reducing partiality 'reverse coded' items used such

statements within a positively worded statement are avoided. This method is accepted as respondents might be unconscious of the irregularity of the statement questions contrasted with other statements. Significantly, the method was used undertaken for controlling the ‘Common Method Bias’ and enhance the reliability of the measurement.

5.4.2 Measurement Instrument

5.4.2.1 Questionnaire Section 1: Demographic

The proposed of the section-1 is designed to attain the information regarding the respondents, including in the research in term of their ‘designation’, ‘age of the farm’, ‘farm size’, ‘number of employees’, ‘nature of employment’, ‘types of ownership’, ‘taxpayer’, types of customers’.

Table 5.2 Represents the Items and the Relevant Reference

Item	Variables	Measures	Reference
D1	Taxpayer	Nominate taxpaying status	Field study
D2	Age (Business Experience)	Open ended	Zabid & Alsagoff 1993; Field study
D3	Number of Employees	Open ended	Kelley et al. 1990; Field study
D4	Designation	Nominate the level of position	Ramasamy & Ting 2004; Field study
D5	Types of farm ownership	Nominate ownership status	Field study
D6	Farm Size (Total number of Cow in farm) or (Total annual production for commercial milk processing company)	Open ended	Livestock (2012); Bonaface (2009); Field study
D8	Types of Customer	Nominate the customer types	Field study

Source: Author compiled from literature review and field study (2017).

All questions in the section are measured by the nominal scale. In the questionnaire, the questions are related to the farm size (D6) on the based on the number of cows available at the farm. In the context of the study, the item of ‘Total number of Cow’ is referred to as a benchmark to select the commercial dairy farm as proposed in the earlier section. This is regular with earlier studies which supported this item to determine the size of the farm (Boniface et al., 2012).

5.4.2.2 Questionnaire Section 2: Constructs of Comprehensive Research Model

In this section of the questionnaire, the focus is to measure the influence of the constructs, such as independent variables (Agricultural marketing channel relationship), mediating variable (Sustainability Governance) and moderating variable (Environmental Uncertainty) in the dependent variable (Sustainable Performance) in this section as proposed in the comprehensive research model of the present research.

5.4.2.3 Agricultural Marketing channel relationship (AMCR)

The construct of the Agricultural marketing channel relationship (AMCR), the six measurement constructs such as ‘trust’, ‘commitment’, ‘satisfaction’, ‘power’, ‘communication’ and ‘cooperation’ were measured by six items for each respectively. The measurements were developed to justify the extent to which farm relationship is with the buyers. All items of constructs were derived from the empirical research studies such as Morgan & Hunt (1994); Doney and Cannon (1997); Anderson & Narus (1984); Heide et al. (1992); Anderson & Narus (1984); Cannnon & Perreault (1999); Redondo & Fierro (2005) and others were made reference to the subsequent table. In addition, items selection was also made by the field study. In the Table, 5.3 represented the details of the items selected and the references to justify the measurements. Respondents were asked to show their extent agreement to each statement based on the five-point Likert scale, with responses ranging from the ‘strongly disagree (1)’ to ‘strongly agree (5)’.

Table 5.3 Measurement Items Related to Agricultural Marketing Channel Relationship (AMCR)

S.L	Constructs	Items	Item Statements	Sources
01	Trust (TRT)	TRT1	Buyer keeps its promises to farm.	Doney & Cannon (1997); Redondo & Fierro (2005); Field study.
02		TRT2	Buyer has always been sincere with the farm.	Redondo & Fierro (2005); Larzelere & Huston (1980); Doney & Cannon (1997); Field study.
03		TRT3	We shared information with the buyer.	Redondo & Fierro (2005); Zaheer et al.(1998); Field study.
04		TRT4	Buyer trusts on the farm.	Morgan & Hunt (1994); Doney & Cannon(1997); Larzelere & Huston (1980);

				Field study.
05		TRT5	Buyer consideration on what is right for us.	Morgan & Hunt (1994); Larzelere & Huston (1980); Field study.
06		TRT6	Buyers level of integrity.	Morgan & Hunt (1994); Larzelere & Huston (1980); Field study
07	Commitment (COMT)	COMT1	Cares about the long-term success of buyer	Garbarino & Johnson (1999); Field study.
08		COMT2	Farm has something to buyer that we are very committed to each other	Morgan & Hunt (1994); Flynn et al.(1990); Hennig- Thureau et al.(2002); Field study.
09		COMT3	Buyer is very important to us.	Hennig- Thureau et al.(2002); Field study.
10		COMT4	The farm has something to a customer that is intending to maintain it definitely.	Morgan & Hunt (1994); Flynn et al.(1990); Field study.
11		COMT5	The customer deserves from us that our maximum attention to maintaining this.	Morgan & Hunt (1994); Flynn et al.(1990); Hennig- Thureau et al.(2002); Field study.
12		COMT6	Our farm agreed to make decisions that would benefit buyers.	Gregory et al. (1995); Field study.
13	Satisfaction (SAT)	SAT1	We received frequent customer complaints	Voss & Blackmon (1994); Field study.
14		SAT2	We are satisfied with the services we get from our buyers	Anderson & Narus (1984); Benton & Maloni (2005); Cannon & Perreault (1999); Field study.
15		SAT3	We would like to discontinue selling to buyers*.	Skinner et al. (1992); Benton & Maloni (2005); Cannon & Perreault (1999); Field study.
16		SAT4	Our customer is a good company to do business and I recommended to others.	Skinner et al. (1992); Benton & Maloni (2005); Cannon & Perreault (1999); Field study.
17		SAT5	Customer offering price satisfactory compared to that of competitors' offers	Matzler et al.(2007); Field study.
18		SAT6	Price received from buyers reflects the quality of the product.	Zeithaml (1998); Field study.
19	Power	POW1	Our customer withholds important supports from us if we don't comply with their demands.	Skinner et al. (1992); Bazzyar et al.(2013) ; Field study.
20		POW2	Our customer business threatened us to deal with another customer in order to make submit to their demands.	Bazzyar et al.(2013); Field study.

21	(POW)	POW3	Our customer offers incentives when we are reluctant to cooperate.	Bazyar et al.(2013); Field study.
22		POW4	Our customer has no right to expect our cooperation*.	Brown et al.(1995); Gaski (1988); Field study.
23		POW5	The customer has a lot of experience and knowledge.	Weiling et al. (2009); Field study
24		POW6	The information provided by buyers is logical and just time.	Weiling et al. (2009); Field study.
25	Communication (COMU)	COMU1	Customers do not understand our production process and ability*.	Heide et al.(1992); Field study.
26		COMU2	My farm informs buyers as soon as possible of any unexpected problems.	Anderson & Narus (1984); Field study.
27		COMU3	Our customer keeps us very well informed about what is going on the effectiveness of my investments.	Anderson & Weitz, 1992; Field study.
28		COMU4	Our customer does not hesitate to explain to me the pros and cons of present business*	Anderson & Weitz, 1992; Field study.
29		COMU5	The channels of communication are well understood.	(Greenbaum et al.,1983); Field study.
30		COMU6	Price change information shared by customer timely.	Matzler et al. (2007); Field study.
31	Cooperation (COOP)	COOP1	We co-operate with buyers with respect to forecasting and production planning	Morgan & Hunt (1994); Field study.
32		COOP2	We co-operate buyers with respect to process the product.	Morgan & Hunt (1994); Field study.
33		COOP3	We do not co-operate extensively with a customer with respect to inventory holdings*.	Morgan & Hunt (1994) Field study
34		COOP4	We co-operate with a customer with respect to information and communication technologies.	Morgan & Hunt (1994); Field study
35		COOP5	No matter who is at fault, problems are our joint responsibilities.	Cannnon & Perreault (1999); Heide & Johan (1992); Minand mentzer (2004); Field study
36		COOP6	We must work together to be successful.	Cannnon & Perreault (1999); Heide & Johan (1992); Field study

(* reverse scored)

Source: Author compiled from literature review & field study (2017)

5.4.2.4 Sustainability Governance (SUG)

Table 5.4 reveals constructs, namely ‘sustainability governance’ the four measurement constructs, particularly ‘business sustainability, ‘integration’, ‘governance power’ and ‘financial control’ which were used to measure through multiple (nine) dimensions and supporting items. Those aforementioned items supported the understanding the influence of the construct on the dependent variable like sustainable performance (SUP). All dimensions and items were derived from the empirical and highly recognized articles on these issues that were published in the international journal as well as findings of the field study that supported the major constructs of the comprehensive research model. The concept of sustainability governance (SUG) was not well developed and matured in the business research and development till today. But, scholarly academic research and business strategy regarding the concept of governance for sustainable development has been conducted by a few number of MNCs and items of the construct were selected from those references such as Dauvergne & Listert (2012); Duxbury & Dickinson, (2007); Kemp et al., (2005) were made references and that was justified through a qualitative study. Table 5.4 represents the details of the items selected and the references to justify the measurements. Sustainability governance (SUG) items are administrated on the five-point Likert scale, with responses ranging from the ‘strongly disagree (1)’ to ‘strongly agree (5)’. Respondents were asked to evaluate the extent to governance condition of an industry as well as the strategic leadership of a farm for sustainable performance (SUP).

Table 5.4 Measurement Items Related to Sustainability Governance

S.L	Constructs	Sub-Dimension	Item	Item Statements	Sources
01	Business Sustainability (BSUT)	Corporate sustainability	BSUT1	We are aware regards to sustainability	Dauvergne & Listert, 2011; Field study.
02			BSUT2	We have a goal for sustainable performance	Dauvergne & Listert, 2011; Field study.
03			BSUT3	We do a campaign for environmental protection.	Dauvergne & Listert ,2011; Field study.
04			BSUT4	We made a partnership with NGO for environmental protection.	Dauvergne & Listert ,2011; Field study.
05			BSUT5	We do not considerate consumerism*.	Dauvergne & Listert ,2011;

		Corporate Consumerism			Field study.
06			BSUT6	We have a concentration on greening effort through the value chain.	Dauvergne & Listert ,2011; Field study.
07	Integration (INTN)	Adaptive management	INTN1	Multidisciplinary knowledge group working for the formulation of the policy and decision making.	Duxbury & Dickinson, 2007; Kemp et al., 2005; Field study.
08		Stakeholder participation	INTN2	Participation of customers (public, private and civil society/ Ngo) for decision making.	Duxbury & Dickinson, 2007; Kemp et al., 2005; Field study.
09			INTN3	Customers and others internal and intrapersonal department are not communication*.	Field study.
10			INTN4	Stakeholder's integration for ICT supports plan and integration.	Field study.
11	Governance power (GPOW)	Channel control	GPOW1	Private brand or customer pressure for reducing cost.	Dauvergne & Listert ,2011: Field study.
12			GPOW2	Private brand or buyers building a relationship and supporting to costs down through eco-efficiencies.	Dauvergne & Listert ,201: Field study.
13			GPOW3	Private brand or buyer's asked certificate or any code of conduct about the product.	Dauvergne & Listert ,2011: Field study.
14		Partnering for power	GPOW4	Buyers are connected with others facilitating organization (public, private and civil society).	Dauvergne & Listert, 2011; Field study.
15		Guiding governments	GPOW5	The government does not directly regulate the operations of the production and distribution*.	Dauvergne & Listert,2011: Field study.
16			GPOW6	Government indirectly regulated the operations of the production and distribution through co-regulation.	Dauvergne & Listert ,2011: Field study
17			GPOW7	The government makes pressure to the customer for paying a fair price.	Field study.
18	Financial	Full-cost	FC1	Authority gives the benefits guarantee for sustainable performance (eco-efficiencies).	Duxbury & Dickinson, 2007; Kemp et al., 2005; Dauvergne &

	Control (FC)	Accounting			Listert ,2011; Field study.
19			FC2	Authority declaration of penalties for defective performance (excessive carbon emission, Anti-social activities, financial corruption).	Duxbury & Dickinson, 2007; Kemp et al., 2005; Dauvergne & Listert ,2011; Field study.

(* reverse scored)

Source: Author compiled from literature review and field study (2017)

5.4.2.5 Moderating Construct Environmental Uncertainty (EU)

While six measurements, particularly ‘supply uncertainty (SU)’, ‘demand uncertainty (DU)’, ‘competitor uncertainty (CU)’, ‘government policy uncertainty (GU)’, ‘climate uncertainty (CLU)’ and ‘political uncertainty (PU)’ were originated from earlier research studies and field study. All of the academic researchers and practical observation supported to make out appropriate items for measuring the existing vulnerability in the farm performances. The Table 5.5 demonstrated the items in details for entrusting the particulars of the items of the environmental uncertainty (EU) that have been found as a moderating construct of the proposed model. The table encompasses the sources of the items in details and items statement for justifying the sense about the measurement of the environmental uncertainty.

Table 5.5 Measurement Items Related to Moderating Construct Environmental Uncertainty

S.L	Constructs	Items	Item Statements	Sources
01	Supply Uncertainty (SU)	SU1	Delivery time and quality of dairy support product are unpredictable.	Van der Vorst 2000); Li (2002); Paulraj & Chen (2007); Field study.
02		SU2	Price change of dairy support product is predictable to farm*.	Van der Vorst (2000); Li (2002); Paulraj & Chen (2007); Field study.
03	Demand Uncertainty (DU)	DU1	The volume of buyer demand is difficult to predict for the farm.	Li (2002); Paulraj & Chen (2007); Field study.
04		DU2	Customer's buying behavior change is unpredictable.	Li (2002); Paulraj & Chen (2007); Field study.
05		DU3	The customer always expects a discount.	Li (2002); Paulraj & Chen (2007); Field study.
06	Competitor Uncertainty (CU)	CU1	Competitors' actions are unpredictable.	Li (2002); Field study.
07		CU2	Competition is unpredictable due to intensifying in the	Li (2002); Field study.

			domestic and the international market.	
08	Government Policy Uncertainty (GU)	GU1	Effect of government production and distribution policies unpredictable.	Javidan (1984); Badri et al. (2000); Von & Bos (2005); Field study.
09		GU2	The guaranteed price from government regulation is predictable*	Javidan (1984); Badri et al.(2000); Von & Bos (2005) Field study.
10	Climate Uncertainty (CLU)	CLU1	Drought occurrence and its duration are unpredictable.	Cruz et al (2007); Field study.
11		CLU2	Flooding occurrence and its duration are unpredictable.	Cruz et al (2007); Field study.
12		CUL3	The temperature varies and duration is unpredictable.	Cruz et al (2007); Field study
13	Political Uncertainty (PU)	PU1	Prophecy of change of the government and pre-election situation is unpredictable.	Chowdhury& Quaddus (2015); Field study.
14		PU2	The influence of political demonstration and duration is unpredictable.	Field study.
15		PU3	The amount of business loss by political demonstration is unpredictable.	Field study.

(* reverse scored)

Source: Author compiled from literature review and field study (2017)

Through scrutiny of the aforesaid table, it has found that selected items of uncertainty were highly recommended by the pure and partial academic and non- academic studies like Van der Vorst (2000); Li (2000); Paulraj & Chen (2007); Cruz et al. (2007); Li (2000); Paulraj & Chen (2007); Javidan (1984); Badri et al. (2000); Von & Bos (2005) as well as item references from the qualitative study. The table, 5.7 also stand the details of the items selected and the reference to justify the measurements. Uncertainty items are managed on the five-point Likert scale, with reply ranging from ‘strongly disagree (1)’ to ‘strongly agree (5)’. Respondents were asked to appraise the point to the uncertainty condition of an industry that influences the regular performance of the supporting variables of the farm for sustainable performance.

5.4.2.6 Questionnaire Section 3: Sustainable Performance (SUP)

In order to determine the construct namely ‘sustainable performance’ under the ‘triple bottom line framework,’ that was acknowledged as a model of ‘sustainability’ by the Elkington (1994) in earlier. This model specified 3’Ps (Profit, People and Planet) for sustainable performance by the later on Elkington’s (1994) concept of the sustainability

has been appreciated by the pedantic research in the multiple disciplines such as Sheth et al.(2011); Craig et al., (2008); Carter & Rogers (2008); WCED (1987); OECD (1997); DETR (1999). All of the aforesaid wisdom justified the thought of predecessors and addressed the balance of three performances, particularly ‘economic performance’, ‘environmental performance’ and ‘social performance’ for measuring the sustainable performance of any particular industry.

5.4.2.6.1 Economic Sustainability (ECS)

Eight items were determined for measuring the economic performance (ECS) of the dairy farm in the industry. Those items were explored from the empirical academic research and reports, yearbook of development partners. These items were found through the extensive review of earlier research and field study at the grassroots level for ensuring the sources of the items for economic performance.

Table 5.6 Measurement Items Related to Economic Sustainability (ECS)

S.L	Dimension	Items	GRI Code	Measuring Statements	Sources, References
01	Sales	ECS1	EC1	Our farm milk ‘Net Sales’ is as much as we expected in each year.	GRI (2002, 2011); Field study.
02	Cost of goods sold	ECS2	EC2	‘Cost of goods sold’ is the minimum to we expect.	GRI (2002, 2011); Field study.
03	Profit	ECS3	EC6	My farm made the maximum profit as we desired or predicted earlier.	GRI (2002, 2011); FAO (2014); 4C; UNMDG; Field study.
04	Wages	ECS4	EC5	My farm paid standard payroll and benefits (Including wages, pension, and other benefits) to employees.	GRI (2002, 2011); FAO (2014); Field study.
05	Tax	ECS5	EC7	My farm never paid taxes on income*	GRI (2002, 2011); FAO (2014); Field study.
06	Subsidiaries	ECS6	EC9	My farm has received subsidiaries (Tax relief, and other types of financial benefits)	GRI (2002, 2011); Field study.
07	Productivity	ECS7	-	The productivity of per head cow is much as expected before.	4C; UNMDG; UTZ; Field study.

(* reverse scored)

Source: Author compiled from literature review and field study (2017)

Table 5.6 demonstrated the items list, including references that are extremely patronized by the house of sustainability research like GRI. From a lot of items suggested by GRI (2002) for sustainability in the different industry as well as a country, for this study following GRI Coded such as (EC1, EC2, EC5, EC6, EC7 and EC9) item were selected as relevant items. Table 5.6 also signifies the details of the items selected and the reference to justify the measurements. ‘Economic performance’ items were governed on the ‘Likert five-point’ scale, with responses ranging from the ‘strongly disagree (1)’ to ‘strongly agree (5)’. Respondents were requested to evaluate the extent of the economic performance of the dairy farm for the sustainable performance.

5.4.2.6.2 Environmental Sustainability (ENS)

Whereas, six dimensions were defined, particularly ‘energy’, ‘water use’, ‘soil conservation’, ‘bio-diversity’, ‘emission & waste’, ‘toxins’ for measuring the environmental sustainability (ENS) of the dairy farm in the industry.

Table 5.7 Measurement Items Related to Environmental Sustainability (ENS)

S.L	Dimension	Items	GRI Code	Measuring Statements	Sources, References
01	Energy	ENS1	EN3	Farm used direct energy by primary source (Electricity).	GRI (2002, 2011); Field study.
02	Water Use	ENS2	EN5	The farm used water for farming and processing of the dairy product.	GRI (2002, 2011); Field study.
03	Soil Conservation	ENS3	-	Dairy farming makes soil conservation very high degree rate.	FAO (2014); Field study.
04	Bio-diversity	ENS4	EN7	Dairy farm does not effect on bio-diversity.*	GRI (2002, 2011); Field study.
05	Emission & Waste	ENS5	EN8	Dairy farm emission Greenhouse gas and Carbon in the earth	GRI (2002, 2011); FAO (2014); Field study.
07		ENS7	EN11	Farm waste and loss link profitability.	GRI (2002, 2011); FAO (2014); Field study.
08	Toxins	ENS8	-	The farm does not release materials in air, soil, water at any stage in the food chain*.	FAO (2014): Field study.

(* reverse scored)

Source: Author compiled from literature review and field study (2017)

Eight items were discovered under the six dimensions from the earlier research reports conducted by the concerned organizations and the investigation field study data was collected from the marginal farmers and customers. The Table 5.7 illuminated the item's catalog counting the references that are supported by sustainability research organizations similar to GRI. Commencing the recommended items by GRI (2002, 2011) for sustainability in different industries as well as countries this study focused on the GRI coded such as (EN3, EN5, EN7, EN8, EN11) items were selected as found pertinent items. For now, these items were highly emphasized by customers and United Nations support organizations, like GRI (2002); FAO (2014); 4C; UTZ; UNMDG as well as field study findings also supported these items for measuring economic performance of a farm. In table 5.9 also indicates the details of the items and the references to justify the measurement of sustainable performance (SUP). 'Economic performance' items were applied on the 'Likert five-point' scale, with the responses ranging from the 'strongly disagree (1)' to 'strongly agree (5)'. Respondents were requested to appraise the degree to the environmental performance on dairy farms for sustainable performance of the dairy industry.

5.4.2.6.3 Social Sustainability (SOS)

Although other eight dimensions, namely 'employment', 'labour management relationship', 'health and safety', 'training and education', 'non-discrimination', 'community', 'corruption', 'customer health and safety' were determined for measuring social sustainability (SOS) of the farm in the dairy industry. Merely sixteen items were explored under aforesaid dimension from the empirical knowledge and field study data of marginal farmers for ensuring the real picture of social performances of the farms in the dairy industry.

Table 5.8 represents the items directory alongside the references that are testified by the GRI. The item recommended by the GRI (2002, 2011) for sustainability in diverse industries and countries is selected for this study and the field study data analysis also used for justifying the relevance of items in the context the dairy industry in Bangladesh. This study followed GRI coded items such as (LA1, LA2, LA12, LA13, LA5, LA9, HR4, SO4, SO2, and PR1). The table also signifies the details of the items selected and the reference to justify the measurements. 'Social sustainability' items were governed on the 'Likert five-point' scale, with responses ranging from the

‘strongly disagree (1)’ to ‘strongly agree (5)’. Respondents were requested to evaluate the extent to social sustainability of the dairy farm for sustainable performance of the dairy industry.

Table 5.8 Measurement Items Related to Social Sustainability (SOS)

S.L	Dimension	Items	GRI Code	Measuring Statements	Source
01	Employment	SOS1	LA1	The farm used (Full time or part time) labour.	GRI (2002, 2011); Field study.
02		SOS2	LA2	Farm average turnover rate in your farm very poor.	GRI (2002, 2011); Field study.
03		SOS3	LA12	The Farm provided worker benefits beyond those legally mandated.	GRI (2002, 2011); Field study.
04	Labour management Relationship	SOS4	LA13	The farm has provision for worker participation in decision making and corporate governance.	GRI (2002, 2011); Field study.
05	Worker Health and Safety	SOS5	LA5	The farm has practiced on recording and notification of occupational accidents and diseases.	GRI (2002, 2011); Field study.
06	Training and Education	SOS6	LA9	Farm arranged the training programs for every category of worker.	GRI (2002, 2011); Field study.
07	Non-discrimination	SOS7	HR4	The farm has a policy and procedure for preventing all forms of discrimination among the worker.	GRI (2002, 2011); Field study.
08	Community	SOS8	SO4	The farm received the award for best result in social, ethical and environmental performances.	GRI (2002, 2011); Field study.
09	Corruption	SOS9	SO2	The farm does not receive complaints against the organization and worker corruptions*.	GRI (2002, 2011); Field study.
10	Customer health and safety	SOS10	PR1	The farm has a policy for preserving customer health and safety during production and distribution.	GRI (2002, 2011); Field study.

(* reverse scored)

Source: Author compiled from literature review and field study (2017)

5.4.3 Measurement Scale

In terms of the measurement scale, in the ‘section one,’ demographic measurement was done by open-end and closed answers. In the ‘section two,’ participatory parts of the questionnaire were designed by ‘Likert Five Point Scale’ to measure the respondents’ expressed opinion of the extent of their agreement and disagreement with each given statement. The example to desire ‘neutrality’ answer is universal in conducting research in Asian countries, including Malaysia, India, and Pakistan (Trompenaars & Turner, 1998) and this tendency has also been found in the subcontinent like Bangladesh.

Similarly, the 'Likert Five Point Scales' 'strongly disagree (1)' to 'strongly agree (5)' was used in 'section-two' and its included parts (Part-A, Part-B and Part-C) of the questionnaire that measures the three measurements of the 'agricultural marketing channel relationship (AMCR); sustainability governance (SUG) and environmental uncertainty (EU). In addition, 'section-three' measures the measurements of the criterion construct sustainable performance (SUP) by the three parts like economic sustainability (ECS), environmental sustainability (ENS) and social sustainability (SOS). Therefore, this measure has been used to find the actual information of the samples and justify the samples if necessary. Finally, their open-ended answer will be sorted out later by the researcher in the analysis part.

5.4.4 Pre-Testing Procedure

To experiment the legitimacy of the questionnaire unexpected responding as well as non-responding problems, a pilot test was conducted. The allocation of the questionnaire was carried out on three groups of respondents; researchers, outsiders and potential respondents, according to the suggestions of the empirical research, like Frazer & Lawley (2000). These groups of respondents were chosen to make sure the procedure, lucidity and applicability of the questionnaire.

About 05 (five) questionnaires were sent to a set of researchers from multi-disciplines. Researchers were selected on the basis that "they understand the study's purpose and they have similar training as the researcher" (Frazer & Lawley, 2000). Thus, their feedback can reflect the accomplishment of the questionnaire to meet the research objective. For the group of outsiders, 03 (three) questionnaires were sent. This group was not involved in the research and not was related to the topic specifically. This group was targeted with the aim of getting feedback on whether they understood the questions generally. In addition, their feedback can be universal in terms of the richness of the questionnaire. As for the potential respondents, 15 (fifteen) questionnaires were sent to ensure the questions are applicable and relevant to the research topic. On the whole, 14 questionnaires were received from the pre-test respondents finally.

This test, however, does not aim to conduct a detailed analysis but rather to use a simple frequency. The main purpose is to test the validity and suitability including the layout and wording of the questions. In addition to that, the test was proposed to find

out the time taken from the samples in answering the questionnaire. Generally, the findings of the pre-testing study showed that all the questions in the questionnaire were understandable and appropriate in the research context. A few adaptations were taken on the questionnaires basis for justifying of the sample feedback, like an easy sentence, understandable wording, and layout issues.

5.5 Conclusion

This section confirmed the hypotheses which were developed in regards to the final research model. The reasonable justifications of the hypotheses were also explained associated with the empirical studies and the field study results. Overall, six (06) hypotheses were established to illustrate the associations among the constructs as proposed in the comprehensive research model shown in figure 4.3. Finally, the chapter explained the measurement item improvement processes leading to the survey questionnaire design. The measurement items were derived from both the literature and the field study outcomes. Excluding the demographic variables, 104 (one hundred four) items were developed for the questionnaire. The designed questionnaire finally processed by a pre-testing process for improvement of the questionnaire. In addition, the pre-tested questionnaire was subjected to the pilot study to test its validity. Then, the final questionnaire was prepared for the survey, which is described in the subsequent chapters.

Chapter-6: Survey and Quantitative Data Analysis

6.1 Introduction

Earlier chapters have addressed the hypothesis and questionnaire to test the comprehensive research model that has been proposed earlier. A national field survey was conducted on the dairy farms of the Bangladeshi dairy farms. As a result, data from 400 respondents were collected. Chapter -6 represents the empirical data analysis through the Partial Least Square (PLS) based on Structural Equation Modelling (SEM) techniques. As described earlier section 3.6.7, there are three parts of analysis in the current research.

The first part examines the association between Agricultural marketing channel relationship (AMCR) and Sustainable performance (SUP), including the relationship between agricultural marketing channel relationship (AMCR) and sustainability governance (SUG), to investigate the relationship between sustainability governance (SUG) and sustainable performance (SUP). The second part of analysis focuses on the mediating effect of sustainability governance (SUG) in the sustainable performance (SUP). The final part of analysis explores the moderating effect of environmental uncertainty (EU) on the association of agricultural marketing channel relationship (AMCR) and sustainable performance (SUP), as well as the association of agricultural marketing channel relationship (AMCR) and sustainable performance (SUP).

This chapter starts with the overview of the national survey that has been undertaken to enclose the particulars of this method. Then, a descriptive analysis of the survey respondents is represented. Following this, the results based on the three parts of analysis are presented.

6.2 Pilot Study

After the evaluation of the pre-test procedure, a pilot survey was performed with the purpose of justifying the applicability of the data. A pilot survey was conducted on 62 respondents with a set of pre-test structured questionnaires. Finally, 55 responses were found complete from the samples who are the targeted respondents in the sample survey. Data were collected through a structured questionnaire under five-point Likert scale ‘strongly disagree (1)’ to ‘strongly agree (5)’. In the study, the questionnaire was

administrated by face to face. The respondents were motivated and asked to give necessary comments on the comprehensibility and complexity of the questions (items) in the survey. Some participants were made comments on the understandability of the theme of the words and ideas. They highly noted on the wording and translated the questionnaire in their native language (Bangla). Along with 23 other participants addressed that the survey instrument was long and there were so many questions. With due respect to the respondents' recommendation, this is a reality that it could not be avoided due to the complexity of the nature of the research (exploratory research) model. In addition, the right conceptualization of a large number of constructs in the model required a huge number of items. It also found that some respondents were scored extremely in some items like strongly agree and strongly disagree. The questions were again examined and made a few adjustments to the structure and wording and finally, the questionnaires were translated into the native language (Bangla) for increasing the comprehensiveness of questionnaires to the samples. Reverse coding and passive statements were coded correctly to minimize the biases of the samples that were supporting the recommendation of earlier studies like (Rossi, Wright, & Anderson, 1983).

6.3 Descriptive Analysis of Survey

In the present research, data were collected through face- to- face personal survey of the dairy farms situated in Chittagong and Sirajgonj region. Samples were collected from the manager and owner of (who are the responsible for management of the farm operation) Bangladeshi "Class A and Class B" size dairy farmers using random sampling techniques. As mentioned earlier, Class A and Class B-size farm have been defined by the number of cows available in the farm at present. The research benchmarks the "Class A and Class B" size dairy farm, according to the Gazette published by (Livestock, 2012). Livestock (2012) addressed that more than twenty cows are 'B' grade farm and more than fifty cow farm is 'A' grade farm. Based on this category the field study has been taken to the concern group and customers, particularly DLS (Dhaka Office) and made a cross check with dairy farmers association in Bangladesh particularly at Chittagong district (Metropolitan and District). Thus, the result has been found similar to (Livestock, 2012). For selection of the samples for data collection author has collected a list of the dairy farm in the sample areas from the

Dairy Farm Owner Association (DFOA) of Chittagong District and society lists (co-operative member farm list) from the Milk Vita for being the largest sample area of Sirajgong district which is considered as a directory for selection of the appropriate samples used in the present study.

After justification of the present status of the sample, randomly 400 samples were selected, where 240 samples from the sample area No 1 (Sirajgonj District) and 150 samples from the sample area No 2 (Chittagong District). In order to collect the primary data from the field survey, this is a laborious and difficult job for the researcher to attain sample response and willingness to participate in the research activities. To overcome these challenges, the researcher has applied much-appreciated approach “personal contact” with the targeted respondents and shared the substance of the survey and to answer any question. This approach supported the successful completion and it has found some positive change in respondent’s cooperation at different stages of the data collection.

6.3.1 Response Rate

According to earlier studies, like Cui (2003) response rate is the major problem of survey-based research. In sub-continent countries like Bangladesh, it becomes difficult to collect the standard rate of sample response. But, it is important to enhance the involvement of the respondents in the research by motivating samples to participate in the research. To make the standard and acceptable solution of the response rate problem, a technique named ‘Total Design Method (TDM)’ was followed that was established (Dillman (1978) for a design questionnaire. As a part of this procedure, it was included to prepare a good appearance of the questionnaire (Heberline and Baumgartner, 1978). According to the suggestions of earlier studies, the questionnaire of the present research was designed in a booklet format with attractive to increase the appeal of the respondents to the questionnaires. Moreover, native translation (Bangla) of the questionnaire made it convenient, attractive as well comprehensible to respondents. It also assured the respondents of their privacy and anonymity.

According to the total responses to the survey, samples were interviewed from the sample areas. For collection of data, researchers’ were communicated with samples and shared about the purposes of the study among the samples showing an unwillingness to

share their opinions. Then reluctant samples were approached by ‘Dairy Association’ and ‘Co-operative Society’ as a result maximum of the samples agreed to respond. Hence, these two phases of responses, like first time agree to response and second time agrees to response named as ‘first wave’ and ‘second wave’. The data were reviewed to look for the error in the form of invalid data, including a blank questionnaire or missing values and those questionnaires came from the farm less than 20 cows on the dairy farm. Many research scholars, like Jackson (2008); Alreach & Settle (1995) have supported this procedure for clean data in the research process, and the present research carried out this process for clean primary data.

Table 6.1 Survey Response Rate

Respondents	Sample Number	Percentage (%)
Total Target Population	400	100
Total Responses	365	91.25
Pilot Survey	62	17.22
First phase (Sirajgonj District)	195	48.75
Second phase (Chittagong District)	108	27
Unusable Samples	45	11.25
Total usable samples	320	80
First wave (First-time response)	239	74.69
Second wave (After motivation response)	81	25.31

Along with in the Table 6.1 survey response rate the review, 91.25% of samples were found through responses, 17.22% of samples were collected through pilot survey and 45 questionnaires i.e. 11.25% were found to be incomplete according to missing values, as well as size of farm and those were deleted to avoid the fallacious result in the analysis. As a result of this process, 320 usable questionnaires were finalized, which indicates 80 % response rate according to the target population of 400. Meanwhile, in the 320 usable sample’s responses, it has been found 239 samples i.e. 74.69% response was found enthusiastically and 81 samples i.e. 25.31% response was found after motivating the samples from helpful customers of the dairy industry in Bangladesh.

6.3.2 Data Examination

It is important to verify the properties of the collected data before conducting the final analysis. According to Neuman (2000) researcher should evaluate the responses of each individual questionnaire before forwarding the information from the questionnaires to

software for statistical analysis for ensuring the usability of the data. Finally, all questionnaires were investigated to find out the inappropriateness or incompleteness of the responses and out of 365 respondents only 17 responses were found incomplete and removed them from the data set. After scanning of raw data, it has been found that some missing values were not considerable in a number of questions. Finally, according to earlier studies such as Roth & Switzer (1995) missing values were imputed by the estimated means method. It was mentionable that estimated means method has been evaluated as a more popular method for solving the missing value problem to the researchers. Then the data set was further examined to identify whether there was any outlier problem. Finally, 35 cases were found outlier from the data set shown in Table 6.2 as follows.

Table 6.2 Data Examination

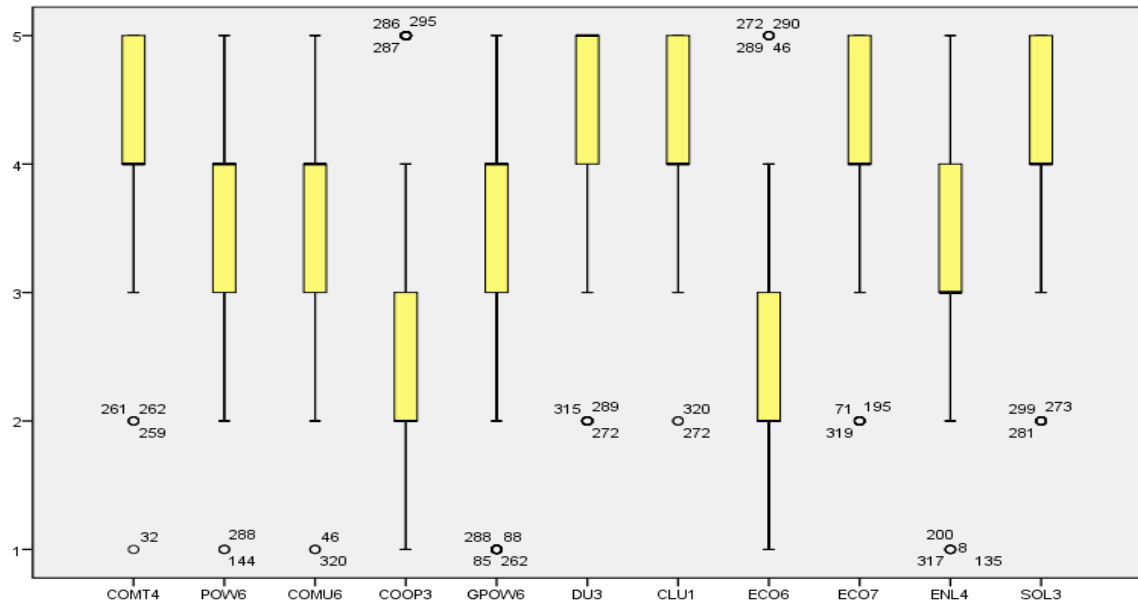
Scale	Outlier Cases
COMT4	32, 259, 261, 262
POW6	144, 288
COMU6	46,320
COOP3	5, 286, 287,295
GPOW6	85, 88, 288
DU3	3, 289, 315
CLU1	272, 320
ECO6	46,272, 289, 290
ECO7	16, 71,195, 319
ENL4	8, 135, 200, 317
SOL3	273, 281, 299

Sources: Generated by SPSS IBM, 2000

Moreover, box plot analysis was performed to expose the extreme outliers in the data set. The extreme outliers were detected if there are any points beyond the outer fence of the box (Fig- 6.1). The outer fence of the box plot was determined by the calculation of lower outer fence $Q1-3*IQ$ and $Q1+ 3*IQ$ for upper outer fence respectively. For identifying the outlier by the box plot researcher used SPSS – IBM 20 software. The Figur 6.1 shown the outlier box plot, this figure demonstrated those 34 cases outliers that belong to 28 individual responses. Finally, these responses were separated and removed from the data set. By the consideration of the above, the overall the survey responses addressed that total 45 responses were having invalid responses including seventeen (17) incomplete responses and twenty-eight (28) outliers. As a result, the

total number of usable responses was 320, samples that used finally for quantitative study and analysis.

Figure 6.1 Box plot analysis



Sources: Generated by SPSS IBM, 2000

6.3.3 Sampling Error and Non- response Bias

Non-response bias is a hitch in a survey research that reduces the acceptability of samples in favor of populations. In the survey research, sample data must be represented the populations and data from the respondents and not- respondents (with the first wave and the second wave) should be analogous for improved the legitimacy of the outcomes of the research. To make an evaluation between the two waves of data, all items were tested. Firstly, the Kolmogorov–Smirnov test was used to check whether the data were normally distributed or not. The result of the normality test is shown in Table 6.3 as follows.

Table 6.3 Kolmogorov–Smirnov Test of Normality

Tests of Normality							
Factors	Kolmogorov-Smirnov ^a			Factors	Kolmogorov-Smirnov ^a		
	Statistic	Df	Sig.		Statistic	df	Sig.
TRT1	.260	320	.000	GPOW2	.318	320	.000
TRT2	.224	320	.000	GPOW3	.286	320	.000
TRT3	.293	320	.000	GPOW4	.296	320	.000
TRT4	.258	320	.000	GPOW5	.244	320	.000
TRT5	.329	320	.000	GPOW6	.322	320	.000

TRT6	.231	320	.000	GPOW7	.197	320	.000
COMT1	.269	320	.000	FLEV1	.228	320	.000
COMT2	.269	320	.000	FLEV2	.282	320	.000
COMT3	.205	320	.000	SU1	.301	320	.000
COMT4	.244	320	.000	SU2	.259	320	.000
COMT5	.211	320	.000	DU1	.258	320	.000
COMT6	.261	320	.000	DU2	.276	320	.000
SAT1	.197	320	.000	DU3	.229	320	.000
SAT2	.277	320	.000	CU1	.258	320	.000
SAT3	.300	320	.000	CU2	.282	320	.000
SAT4	.281	320	.000	GU1	.267	320	.000
SAT5	.300	320	.000	GU2	.245	320	.000
SAT6	.226	320	.000	CLU1	.247	320	.000
POW1	.281	320	.000	CLU2	.248	320	.000
POW2	.255	320	.000	CLU3	.253	320	.000
POW3	.266	320	.000	PU1	.263	320	.000
POW4	.337	320	.000	PU2	.290	320	.000
POW5	.275	320	.000	PU3	.272	320	.000
POW6	.278	320	.000	ECO1	.300	320	.000
COMU1	.349	320	.000	ECO2	.229	320	.000
COMU2	.283	320	.000	ECO3	.248	320	.000
COMU3	.239	320	.000	ECO4	.325	320	.000
COMU4	.234	320	.000	ECO5	.249	320	.000
COMU5	.288	320	.000	ECO6	.232	320	.000
COMU6	.305	320	.000	ECO7	.272	320	.000
COOP1	.242	320	.000	ENL1	.239	320	.000
COOP2	.285	320	.000	ENL2	.233	320	.000
COOP3	.297	320	.000	ENL3	.211	320	.000
COOP4	.180	320	.000	ENL4	.226	320	.000
COOP5	.311	320	.000	ENL5	.235	320	.000
COOP6	.261	320	.000	ENL6	.334	320	.000
BSUT1	.263	320	.000	ENL7	.187	320	.000
BSUT2	.285	320	.000	SOL1	.358	320	.000
BSUT3	.305	320	.000	SOL2	.264	320	.000
BSUT4	.219	320	.000	SOL3	.259	320	.000
BSUT5	.292	320	.000	SOL4	.266	320	.000
BSUT6	.275	320	.000	SOL5	.274	320	.000
INTN1	.307	320	.000	SOL6	.317	320	.000
INTN2	.278	320	.000	SOL7	.286	320	.000
INTN3	.319	320	.000	SOL8	.213	320	.000
INTN4	.235	320	.000	SOL9	.279	320	.000
GPOW1	.241	320	.000	SOL10	.255	320	.000

Sources: Generated by SPSS IBM, 2000

The Table 6.3 demonstrated that the test of all the items was significant at $p < 0.05$. Hence, the study found that alternative hypothesis was accepted, i.e sample data were not normally distributed that is highly important for any non-parametric test. Therefore, to make sure the appropriateness of the data, Mann–Whitney test was conducted to test the non-response bias by using non-parametric test, which is usually applied to verify

the diversity between two independent samples suggested by Malhotra et al. (2004). In addition, Groves (2006) recommended that it should ensure the samples that the data are not diversified significantly from the population. In this regards, the study highly searches the difference between the first waves who respondents early (n= 239) and the second wave who respondents late (n= 81) in the terms of the responses corresponding to the scale of measurement items. This test was conducted to experiment the hypothesis that ‘there were differences in the responses between the first wave and the second wave of data’. The difference between samples was evaluated based on some selected scale items for this study. For the measurement of Z-values based on the construct, the study selected the factor randomly from the list of factors for respective constructs. The test result is depicted by table 6.4 in the follows.

Table 6.4 Mann–Whitney Test Result

Constructs	Z- value	Significance (1 tailed)
TRT	-.446	.656
COMT	-.715	.475
SAT	-.660	.509
POW	-.092	.927
COMU	-.361	.718
POW	-.092	.927
COMU	-.220	.826
COOP	-.697	.486
BSUT	-1.583	.114
INTN	-.229	.819
GPOW	-1.366	.172
FLEV	-.537	.591
SU	-.518	.604
DU	-0.574	.566
CU	-1.178	.239
GU	-.615	.539
CLU	-1.622	.105
PU	-1.792	.073
ECS	-.659	.510
ENS	-.760	.447
SOS	-1.819	.069

Sources: Generated by SPSS IBM, 2000

In Table 6.4, it is explicated that z-values are not significant at ($p=.05$): Hence, the hypothesis is rejected and null- hypothesis is accepted. As a result, this has proved that there was no difference between the two waves of data. From this result, it can be disclosed that non-response bias did not exist in the dataset that has been used for testing the hypotheses.

6.3.4 Common Method Variance

More critical limitation of the survey data is the occurrences of ‘Common Method Bias’ that is perhaps intimidation to the validity of the conclusions in the survey research (Podsakoff et al. 2003). Different programs have been taken to minimize the change of threat in the research according to empirical evidence, like (Podsakoff et al. 2003). The programs are first, at the time of data collection of the respondents carefully selected who has relevant knowledge regarding the constructs and items as per requirements. Secondly, the respondents were ensured that the ambiguity of their responses would be preserved. Thirdly, the questions were constructed to be simple and precise to circumvent ambiguity. Required terminologies were discussed with relevant examples for better comprehensiveness of the items and constructs to the respondents. Fourthly, the study attempted to avoid double-barreled questions. Finally, the order of independent and dependent variables in the survey was distanced.

In addition, as per the recommendation of empirical studies like Podsakoff & Organ (1986) the ‘Harman One-Factor Test’ was applied. According to this test, all the items i.e. 104 items were entered into a factor analysis. The unrotated factor solution emerged 1 (one) factor where this 8.432% variance extract was found. In addition, all items were entered in the factor analysis again. The unrotated factor result explored 34 latent factors with Eigenvalue greater than 1 (one). The cumulative variance for the factors is 68.124% and no single factor is holding the account of maximum covariance (maximum variance 8.432%) in the criterion variable (Podsakoff & Organ, 1986). Hence, it has considered that this study is free from the common method variance, which was the majority of the concerned for ensuring the validity and acceptability of the research findings to the audiences and stakeholders.

6.3.5 Demographic Information of the Sample

Descriptive analysis of the respondents was conducted on the basis of the samples 320, which are usable data in the present research. To make better explicable and comprehensive about the demographic information about the respondent’s the study used SPSS software. The following tables including the table from 6.5 to 6.12 deliberated descriptive information about the respondent in the field survey of this research.

The Age of Farm Business

Table 6.5 Survey Respondents by Age of Farm's Business

Farm Business Age (Years)		Frequency	Percent	Cumulative Percent
Valid	Less than 10 Years	43	13.4	13.4
	10 to 19 Years	108	33.8	47.2
	20 to 29 Years	63	19.7	66.9
	30 to 39 Years	60	18.8	85.6
	More than 40 Years	46	14.4	100.0
	Total	320	100.0	

Source: Author compiled from field survey generated by SPSS, IBM 2000

The respondent's of business age has been detailed in Table 6.5. The focused table represented the details of the information about the usable samples (320), such as majority of sample of farms belongs between the 10 years to 19 years (33.8%) and was followed by the 20 years to 29 years (19.7%) and 30 years to 39 years (18.8%) respectively. In addition, the aforesaid table has explained that the 13.4% respondent farms age less than 10 years, compared 14.4% respondent farms age more than 40 years. It is the second lowest rate in percentage of the list of respondents. This folder of information reflected a real state of affairs regarding the starting business this industry from after liberation war for earlier years, which has been found in the field study of this research. Where respondents told that due to lack of sustainability in the dairy industry entrepreneurs are reluctant to choice the dairy industry as a new division of business today but it was increased after the independence.

The Size (No of Cow) Farm

Table 6.6 Survey Respondents by the Size Farm's (No of Cow)

Farms Size (No of Cow)		Frequency	Percent	Cumulative Percent
Valid	21- 50 Cows	257	80.31	80.31
	More than 50 Cows	63	19.69	100.0
	Total	320	100.0	

Source: Author compiled from field survey generated by SPSS, IBM 2000

The respondent's of farm size has been detailed in Table 6.6, where respondents are classified according to the size of the farm in this particular industry. The focused table represented the details about the usable samples 320, such as 80.31 % respondents were found as farm size from 21 to 50 cows and followed by 19.69 % respondents were found as farm size more than 50 cows at the time of the survey. The study selected

those farms to have more than 20 cows in the cow shade as respondents of the study i.e. ‘Class A and Class B’ dairy farm, according to the Livestock (2012). Hence, there are no respondents below or equal to the 20 cow’s farm records.

The No of Employees

Table 6.7 Survey Respondents by the No of Employee

No of Employees		Frequency	Percent	Cumulative Percent
Valid	Less than Equal to 5 employees	140	43.8	43.8
	6 to 10 Employees	65	20.3	64.1
	11 to 15 Employees	34	10.6	74.7
	16 to 20 Employees	32	10.0	84.7
	More than 20 Employees	49	15.3	100.0
	Total	320	100.0	

Source: Author compiled from field survey generated by SPSS, IBM 2000

The respondent’s of a number of employees working on the farms has been detailed in Table 6.7, where respondents are classified according to the number of employees working in the farms particularly in the dairy industry. The table represented the particular information about the usable samples 320, such as maximum respondent farm’s employed less than or equal to 5 employees i.e. 43.8%, followed by 20.3% employed 6 to 10 employees and 15.3% employed more than 20 employees respectively. Finally, others respondents employed 11 to 15 employees (10.6%) and 16 to 20 employed 10% respondents.

The Nature of Employment

The respondent’s nature of employment has been detailed in Table 6.8, where respondents are classified according to the nature of employment. The table represented in details about the usable samples 320, such as maximum respondent’s employed contractual employees’ i.e. 55.3 % of the total respondents. In the field study, it has been found that in the Sirajgonj district maximum dairy farms employed a contractual employee for a certain period but not less than one year.

Table 6.8 Survey Respondents by the Nature of Employment

Nature of Employment		Frequency	Percent	Cumulative Percent
Valid	Permanent Employees	82	25.6	25.6
	Temporary Employees	36	11.3	36.9
	Contractual Employees	177	55.3	92.2
	Permanent and Temporary Employees	25	7.8	100.0
	Total	320	100.0	

Source: Author compiled from field survey generated by SPSS, IBM 2000

In addition, 25.6% respondents employed permanent employees followed by 11.3% respondents employed temporary employees and only 7.8% respondents employed both permanent and temporary employees in the farms regularly.

The Types of the Buyer

Table 6.9 Survey Respondents by the Types of the Buyer

Types of the Buyer		Frequency	Percent	Cumulative Percent
Valid	Agent or Goala	26	8.1	8.1
	Sweets and Bakery	70	21.9	30.0
	Milk processing company	130	40.6	70.6
	Milk product producing company	59	18.4	89.1
	All types of commercial buyers	35	10.9	100.0
	Total	320	100.0	

Source: Author compiled from field survey generated by SPSS, IBM 2000

The respondent's types of buyer have been detailed in Table 6.9, where respondents' were categorized consistent with the types of the buyers. The table elucidated the usable samples 320, such as; highest number of respondents sold their product to 'Milk processing companies' i.e. 40.6%, which is near about half of the total respondents. In addition, 21.9% respondents sold to the 'Sweets and Bakery' followed by 18.4% 'Milk product producing companies' and 10.9% respondents sold to the 'All types of commercial buyers'. Finally, it has been found that only a few respondents sold their produced to the 'Agent or Goala' i.e. 8.1% of the total respondents.

The Ownership of Farm

Table 6.10 Survey Respondents by the Ownership of Farm's

Ownership Types		Frequency	Percent	Cumulative Percent
Valid	Sole Proprietorship	200	62.5	62.5
	Partnership	40	12.5	75.0
	Private Limited Company	77	24.1	99.1
	Public Limited Company	3	0.9	100.0
	Total	320	100.0	

Source: Author compiled from field survey generated by SPSS, IBM 2000

The respondent's of farm ownership has been detailed in the Table 6.10, where respondents' were categorized consistent with ownership of the farms. The highlighted table has signified in details the usable samples 320 for examples, highest numbers of the respondent's farms were established in 'Sole Proprietorship' frameworks i.e. 62.5% respondent. In the field study, it has been found that maximum dairy farms were established within the 'Sole Proprietorship' frameworks in Bangladesh. In addition, the table reflected that 24.1% were established under the 'Private Limited Company' frameworks and followed by 12.5% were established in 'Partnership' frameworks and only 0.9% were established in the 'Public Limited Company' structure. It has replicated that in the dairy industry, corporate investment is a very poor contribution.

The Designation of Respondent

Table 6.11 Survey on the Designation of Respondent's

Designations of Samples		Frequency	Percent	Cumulative Percent
Valid	Owner's of the Farm	218	68.1	68.1
	Director of the Farm	19	5.9	74.1
	Managers of the Farm	83	25.9	100.0
	Total	320	100.0	

Source: Author compiled from field survey generated by SPSS, IBM 2000

The Table 6.11 demonstrated the respondent's entities in the farms. The highlighted table reflected the designation of the samples in the farms and indicated the details regarding the usable samples 320 for examples, maximum respondents were owners of the farms i.e. 68.1% respondents were the owners of the farms. It has highly substantiated the table 6.8. In addition, 25.9% respondents were managers of the farm's of which 5.9% were the directors of the farms.

Payment of Tax

Table 6.12 Survey on Respondents by the Payment of Tax

Tax Payer		Frequency	Percent	Cumulative Percent
Valid	Tax Payer	90	28.1	28.1
	Not Tax Payer	230	71.9	100.0
	Total	320	100.0	

Source: Author compiled from field survey generated by SPSS, IBM 2000

The respondent's farms' tax payment has been detailed in the Table 6.12, where respondents' were categorized consistently by on tax payment. The highlighted table has been signified in details regarding the usable samples 320 such as maximum respondents have not paid tax (Income Tax) i.e. 71.9% respondent did not make a taxable profit for the existing farm structure. Moreover, only 28.1% respondents were paying tax (Income Tax) from the existing farm structure.

Thus, all deliberated Tables demonstrated the respondent's descriptive information in regards to the aforesaid categories that has an outstanding contribution to increasing the comprehensive outcomes of the study.

6.4 PLS- Based Structural Equation Modelling (SEM)

The present study prefers to use Structural Equation Modelling (SEM) for analysis of quantitative data. Partial least squares (PLS) -based SEM is an appropriate tool for analysis of the collected primary data according to the objectives of the research and research model. Generally, PLS-based SEM is performed in two sequential stages:

- i. Assessment of measurement model**
- ii. Assessment of structural model.**

These sequential assessments were conducted to ensure reliability and validity of measurement constructs in the model which was finalized. The sequential assessments are shown in the Table 6.13 as follows.

Table 6.13 Step by Step Assessment of the Model

Stage	Analysis	Particular of Analysis	Constructs
1	Assessment of measurement model	Item reliability Internal consistency Discriminant validity Absolute importance of items (item weight) Multi-collinearity test	Reflective Reflective Reflective Formative Formative
2	Assessment of structural model	The amount of variance explained (R^2) Path coefficient (β) Statistical significance of t-values Goodness of Fit (GoF)	Both Both Both Both

Source: Author compiled from literature

The sequential assessments as mentioned in Table 6.13 were discussed in the successive sections.

6.4.1 Assessing Measurement Model

In the present study, comprehensive research model reveals that 23 constructs consist of the first order and higher order constructs that were reflective and formative. Among the constructs ‘Agricultural Marketing channel relationship (AMCR)’; ‘Sustainability Governance (SUG)’, ‘Environmental Uncertainty (EU)’ and ‘Sustainable Performance (SUP)’ were multidimensional and hierarchical constructs. At the higher –order level, construct Agricultural Marketing channel relationship (AMCR) was measured by the six reflective constructs: trust (TRT), commitment (COMT), power (POW), satisfaction (SAT), cooperation (COOP) and communication (COMU). In addition, another hierarchical higher- order construct named sustainability governance (SUG) was measured through four reflective constructs: business sustainability (BUS), financial control (FC), integration (INTN) and governance power (GPOW). Moreover, hierarchical higher-order constructs sustainable performance (SUP) was measured by the three reflective constructs: economic sustainability (ECS), environmental sustainability (ENS) and social sustainability (SOS). Finally, hierarchical higher-order constructs environmental uncertainty (EU) was measured by the six formative constructs: supply uncertainty (SU), demand uncertainty (DU), competitor uncertainty (CU), climate uncertainty (CLU), government uncertainty (GU) and political uncertainty (PU). The Fig 6.2 namely the complete model stated the constructs and their respective items, particularly the nature of the link (reflective and formative).

This was noted that Table 6.13 mentioned the reflective measurement model in which assessment is based on item reliability, internal consistency, the average variance extracted (AVE), correlation of the constructs and the item cross-loading matrix, again the formative measurement model also assessed on the basis of item weight and collinearity statistics of the constructs. Measurement properties of the outcome of PLS model will be discussed in the subsequent segment.

6.4.1.1 Assessment of Reflective Measurement Model

In the present research, the reflective measurement model included first-order and higher-order constructs. Initially, the first-order measurement model was appraised. It was examined and then the higher order model will justify it thereafter.

6.4.1.1.1 First order reflective measurement model

According to the Figure 6.2, it is apparent that the comprehensive research model includes 13 first-order constructs: (TRT), (COMT), (SAT), (COMU), (COOP), (POW), (BUS), (FC), (INTN), (GPOW), (ECS), (ENS) and (SOS). Measurement properties of these constructs were assessed in term of item reliability, internal consistency and discriminant validity with reference to earlier studies, like Hair et al. (2011); Ringle et al. (2012); Bagozzi & Pieters (1998); Henseler et al., (2009) and Barclay et al. (1995) has detailed in the section 3.6.7.2.

Item reliability

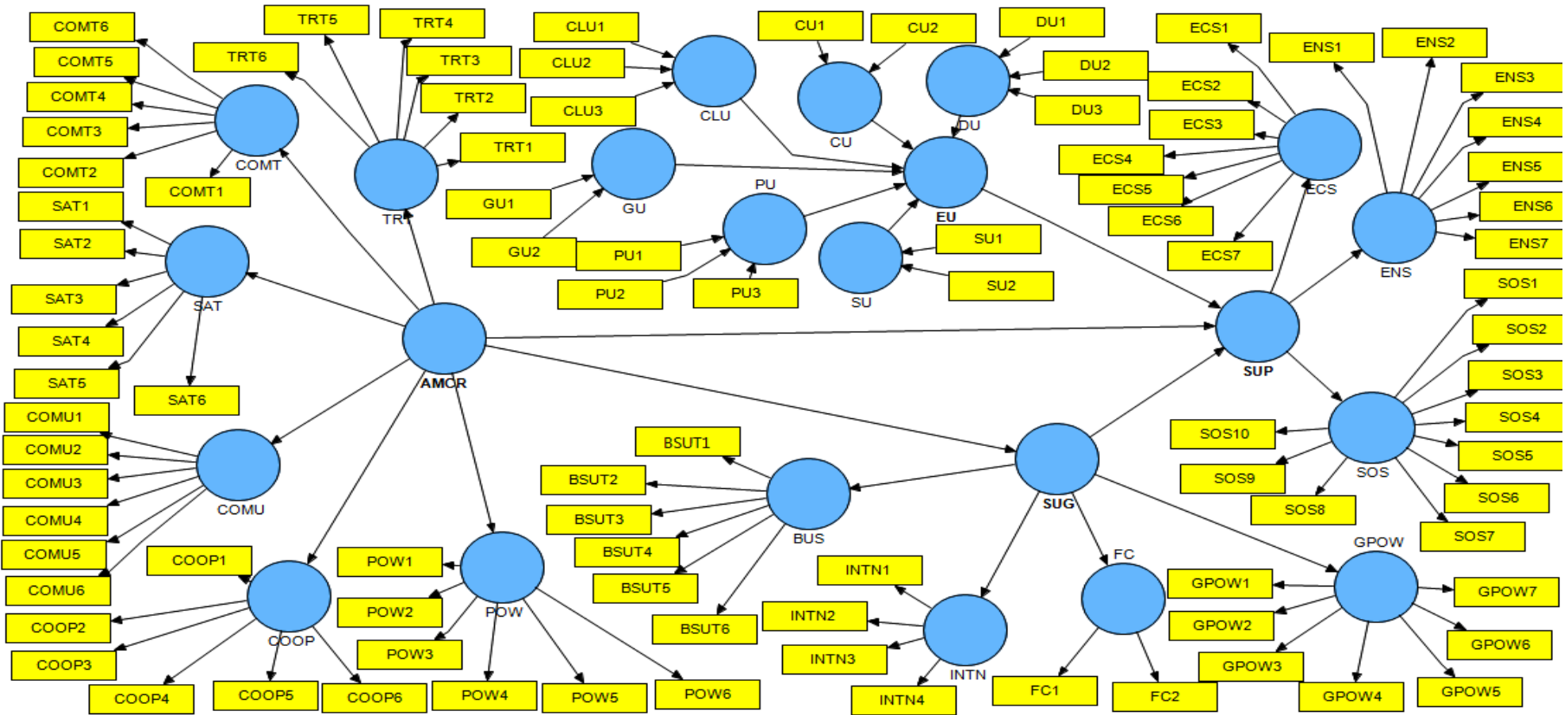
Earlier studies, like Nunnally (1978); Hair et al. (2011); Ringle et al. (2012); Bagozzi & Pieters (1998) and Henseler et al. (2009); Barclay et al., (1995); Chin (1998a) and Hulland (1999) this study adopted the cut-off value for this study was 0.60 used by Moorees and Chang (2006) for maximizing the convergent validity of the measurement model and supported by the (Hair et al., 2011) for exploratory research. The following Table- 6.14 demonstrated the details of the items loading with the corresponding t-values. The Table 6.14 reveals that forty (40) items (e.g TRT2, TRT3, TRT4, COMT4, COMT5, COMT6, COMU2, COMU3, COMU4, COMU5, COOP2, COOP3, COOP4, POW1, POW4, POW6, SAT1, SAT3, SAT4, BUST1, BUST4, BUST5, BUST6, GPOW1, GPOW3, GPOW5, GPOW7, INTN3, INTN4, ECS1, ECS3, ECS4, ECS7, ENS2, ENS3, ENS4, ENS5, SOS1, SOS2, SOS5, SOS7, SOS8, SOS9 and SOS10)

have loading less than 0.60. These loading items were decided to delete the second PLS run according to the recommendation of Hair et al. (2011) and Barclay et al. (1995).

Internal consistency

By the justification research wisdom such as Hair et al. (2011); Fornell and Larcker (1981) internal consistency (composite reliability) were measured for the measurement model of the reflective construct. For the present study, the researcher determined the minimum threshold for internal consistency (CR) 0.7 that is recommended by Hair et al. (2011); Fornell and Larcker (1981); Barclay et al. (1995); Hair et al. (2012). The following Table -6.14 exposed the internal consistency (CR) of all first-order constructs. The Table-6.14 demonstrated that internal consistency (CR) values of all constructs were found less than 0.70 except (COMT, POW, and FC). By the justification of the above result, it was found that maximum constructs did not satisfy the internal consistency (CR) values, it has forced the researcher's to improve the CR values and take necessary actions. The researcher decided the second time PLS run according to the recommendation of Hair et al. (2011); Fornell and Larcker (1981); Barclay et al. (1995).

Figure 6.2 Complete Research Model



Source: Author compiled result from output Generated by SmartPLS

Table 6.14 Assessment of Reliability, CR and AVE for First- order Constructs

Constructs	Items	Loading	T-Value	AVE	CR
Trust (TRT)	TRT1 (Keeps its promises)	0.646	6.751	0.306	0.682
	TRT2 (Always been Sincere)	0.470	3.731		
	TRT3 (Confidently shared information)	0.541	5.018		
	TRT4 (Trust on customers)	-0.013	0.071		
	TRT5 (Consideration of stakeholder right)	0.620	5.934		
	TRT6 (Higher level of Integrity)	0.721	10.83		
Commitment (COMT)	COMT1 (Care about long term success)	0.655	7.975	0.315	0.731
	COMT2 (Committed to stakeholder)	0.602	6.335		
	COMT3 (Importance on stakeholder)	0.601	4.646		
	COMT4 (Maintain the customers intends)	0.514	3.961		
	COMT5 (Attention on customers deserves)	0.600	5.221		
	COMT6 (Decision making in favor of customers)	0.430	2.865		
Communication (COMU)	COMU1 (Understanding of production process)	0.602	4.798	0.262	0.625
	COMU2 (Just-time sharing information)	0.547	4.909		
	COMU3 (well informed about investment)	0.477	3.642		
	COMU4 (Wrong information regarding business)	-0.007	0.043		
	COMU5 (Understandable channel communication)	0.361	2.317		
	COMU6 (sharing price change information)	0.747	11.62		
Cooperation (COOP)	COOP1 (Cooperation for forecasting production)	0.745	12.73	0.292	0.491
	COOP2 (Cooperation for product process)	0.160	0.874		
	COOP3 (Cooperation for inventory holding)	-0.491	3.913		
	COOP4 (Cooperation for sharing technology)	0.356	2.214		
	COOP5 (Sharing responsibilities)	0.526	4.712		
	COOP6 (work together for mutual success)	0.727	9.544		
Power (POW)	POW1 (Stakeholder Withdrawal of support)	0.414	3.393	0.365	0.768
	POW2 (Threat for dealing competitors)	0.618	7.233		
	POW3 (Incentive for cooperation)	0.692	8.988		
	POW4 (Stakeholder expectation of cooperation)	0.478	4.366		
	POW5 (Stakeholder experience and knowledge)	0.784	18.06		
	POW6 (Just in time and logical information provided)	0.564	6.177		
Satisfaction (SAT)	SAT1 (Received frequent complains)	-0.675	9.277	0.405	0.618
	SAT2 (Satisfied on customers)	0.721	12.82		
	SAT3 (Wishes to discontinue of business)	0.417	2.973		
	SAT4 (Recommended customers for business)	0.535	5.133		
	SAT5 (Competitive price offer)	0.727	13.74		
	SAT6 (Price that reflected quality of product)	0.681	11.84		
Business Sustainability (BUS)	BSUT1 (Awareness about sustainability)	0.326	1.734	0.237	0.544
	BSUT2 (Goals for accomplishing sustainability)	0.636	6.051		
	BSUT3 (Campaign for environmental protection)	0.730	9.734		
	BSUT4 (Partnership with NGO and civil society)	-0.155	0.695		
	BSUT5 (Consideration of consumerism)	0.268	1.399		
	BSUT6 (Concentration on green value chain)	0.533	3.655		

Financial Control (FC)	FC1 (Benefits for sustainable Performance)	0.608	1.954	0.561	0.712
	FC2 (Penalty for unsustainable operations)	0.867	3.394		
Governance Power (GPOW)	GPOW1 (Pressure for reducing cost of production)	-0.081	0.393	0.235	0.508
	GPOW2 (Relationship building for cost reduction)	0.619	5.113		
	GPOW3 (Demand of quality and hygiene certificates)	0.586	4.680		
	GPOW4 (Maintaining communication with facilitating org.)	0.681	8.184		
	GPOW5 (Govt. regulation on production and distribution)	-0.107	0.613		
	GPOW6 (Govt. regulation through private governors)	0.662	7.087		
	GPOW7 (Government pressure for fare price to farmer)	-0.011	0.068		
Integration (INTN)	INTN1 (Multidisciplinary knowledge for best policy)	0.743	9.450	0.32	0.564
	INTN2 (Participation of customers for decision making)	0.794	14.918		
	INTN3 (Internal department communication)	0.314	1.793		
	INTN4 (Stakeholder's integration for ICT supports plan)	0.023	0.114		
Economic Sustainability (ECS)	ECS1 (Net Sales)	0.150	0.897	0.283	0.663
	ECS2 (Cost of goods Sold)	0.781	10.99		
	ECS3 (Expected Profit)	0.507	3.251		
	ECS4 (Employee payroll and benefits)	-0.037	0.227		
	ECS5 (Income Tax)	0.667	6.871		
	ECS6 (Subsidiaries)	0.721	9.372		
	ECS7 (Productivity)	0.356	2.419		
Environmental Sustainability (ENS)	ENS1 (Sources of energy)	0.749	13.32	0.273	0.599
	ENS2 (Sources of water)	0.546	5.393		
	ENS3 (Soil Conservation)	-0.080	0.499		
	ENS4 (Affect on bio-diversity)	0.073	0.404		
	ENS5 (Emission of greenhouse gas and carbon)	0.033	0.191		
	ENS6 (Correlation between waste and profitability)	0.795	14.481		
	ENS7 (Discharge dust on air, water and soil)	0.640	6.068		
Social Sustainability (SOS)	SOS1 (Nature of employment)	0.265	1.497	0.306	0.682
	SOS2 (Employee turnover rate)	0.265	1.749		
	SOS3 (Employee extra benefits without monthly	0.675	6.658		
	SOS4 (Employee participation at decision-making)	0.701	10.42		
	SOS5 (Record and notification of diseases and accidents)	0.545	5.643		
	SOS6 (Employee Training)	0.707	9.826		
	SOS7 (Policy for preventing discrimination)	0.068	0.498		
	SOS8 (Social award for environmental	0.574	5.319		
	SOS9 (Employee and organizational corruption)	0.384	2.644		
	SOS10 (Health and safety policy)	0.080	0.507		

Source: Author compiled result from output Generated by SmartPLS

Average variance extracted (AVE)

According to the recommendation of the previous studies, like Fornell & Larcker (1981); Hair et al. (2011); Henseler et al. (2009) present study evaluated the average variance extracted (AVE) of all first-order reflective constructs in the measurement model. This study adapted the acceptable value for AVE 0.5 which was suggested by Fornell & Larcker (1981) and also supported by many other studies, like Hair et al. (2012) and Hair et al. (2011). In the Table-6.14 reported the average variance extracted (AVE) value of all first order reflective constructs. This Table revealed that AVE values of all constructs less than 0.5 i.e. acceptable values except FC (0.561). This result recommended the researcher to improve the average variance extracted (AVE) values to satisfy the measurement model requirement. The researcher decided to run second PLS modelling following the recommendation of Fornell & Larcker (1981); Hair et al. (2012); Hair et al. (2011), and Henseler et al. (2009).

Discriminant validity

Another important tool for measurement model is discriminant validity analysis. According to recommendation of earlier studies, like (Barclay et al., 1995; Henseler et al., 2009 and Hair et al., 2011) authors measured the discriminant validity of each construct, a comparison between the square -root of AVE (average variance extracted) of the constructs and measuring the correlation among the constructs. The following Table 6.15 show the square root of AVE (green color diagonal number) and the inter-construct correlation values (off-diagonal elements) are presented. This table also demonstrated that the square root of AVE of all constructs is greater than the off-diagonal value of across the row and down column excluding COMU and ENS. These items were recommended for further justification.

Table 6.15 Inter- construct correlation (First order constructs)

Constructs	AVE	BUS	COMT	COMU	COOP	ECS	ENS	FC	GPOW	INTN	POW	SAT	SOS	TRT
BUS	0.237	0.487												
COMT	0.315	0.402	0.561											
COMU	0.262	0.259	0.306	0.512										
COOP	0.292	0.398	0.370	0.456	0.540									
ECS	0.283	-0.329	-0.145	0.127	0.100	0.532								
ENS	0.273	0.458	0.405	0.250	0.231	-0.460	0.522							
FC	0.561	0.175	0.075	0.170	0.156	0.101	0.066	0.749						
GPOW	0.235	0.388	0.235	0.353	0.294	-0.051	0.367	0.149	0.485					
INTN	0.320	0.426	0.403	0.396	0.425	0.046	0.257	0.157	0.428	0.566				
POW	0.365	0.242	0.371	0.557	0.387	0.072	0.346	0.213	0.300	0.319	0.604			
SAT	0.405	0.247	0.368	0.532	0.477	0.113	0.266	0.236	0.258	0.351	0.580	0.636		
SOS	0.237	0.478	0.500	0.425	0.356	-0.284	0.570	0.211	0.392	0.393	0.443	0.393	0.487	
TRT	0.306	0.182	0.322	0.432	0.329	0.019	0.207	0.190	0.243	0.267	0.412	0.430	0.374	0.553

Source: Author compiled from output Generated by SmartPLS

Table 6.16 Cross Loading (Generated by SmartPLS)

Constructs ----- Items	BUS	COMT	COMU	COOP	ECS	ENS	FC	GPOW	INTN	POW	SAT	SOS	TRT
BSUT1	0.3264	0.0913	-0.0386	0.0112	-0.0563	-0.1079	-0.0544	-0.041	0.1398	-0.189	-0.1734	-0.0176	0.0591
BSUT2	0.6361	0.3108	0.0554	0.2648	-0.2585	0.3298	0.0917	0.166	0.2487	0.0815	0.0633	0.2873	0.0774
BSUT3	0.7295	0.336	0.2897	0.3121	-0.2576	0.4172	0.2088	0.2941	0.3591	0.3657	0.3413	0.4674	0.1447
BSUT4	-0.155	-0.0111	-0.1088	-0.0206	0.1007	-0.159	-0.0623	-0.2519	-0.0283	-0.1553	-0.0797	-0.2509	-0.2016
BSUT5	0.2683	0.1117	0.1776	0.2341	0.0966	-0.025	-0.0531	0.14	0.2213	0.1323	0.1168	0.0114	0.0314
BSUT6	0.5328	0.115	0.0415	0.1485	-0.1992	0.2087	0.0701	0.2251	0.1213	-0.1056	0.0206	0.1212	0.0372
COMT1	0.2654	0.6552	0.1176	0.3000	-0.1295	0.2888	0.0168	0.1547	0.1939	0.2194	0.2615	0.2839	0.2148
COMT2	0.2363	0.5881	0.2652	0.1591	-0.0499	0.197	0.0598	0.1815	0.2742	0.313	0.1931	0.3675	0.2151
COMT3	0.3252	0.5759	0.1618	0.1537	-0.2952	0.3567	0.0097	0.2438	0.2156	0.1819	0.1955	0.376	0.1642
COMT4	0.199	0.5139	0.1867	0.2384	0.0222	0.1852	0.1054	0.0458	0.2529	0.2529	0.2465	0.2334	0.27
COMT5	0.2185	0.577	0.1585	0.1785	-0.0889	0.2283	0.0464	0.1236	0.2352	0.1149	0.1461	0.2628	0.0947
COMT6	0.073	0.4299	0.1234	0.2004	0.0707	0.0803	-0.0054	0.0198	0.1724	0.1033	0.1702	0.1166	0.0618
COMU1	0.1603	0.1575	0.5954	0.2512	-0.0091	0.0888	0.0895	0.208	0.1358	0.2685	0.2759	0.2293	0.2028
COMU2	0.0827	0.2259	0.5469	0.2688	0.1423	0.1153	0.005	0.1268	0.2571	0.3132	0.2726	0.2396	0.1918
COMU3	0.0085	0.0195	0.4765	0.1099	0.206	0.0556	0.2291	0.2588	0.1598	0.2775	0.224	0.1726	0.2857
COMU4	-0.0652	-0.0691	-0.0072	0.0289	0.2839	-0.2127	0.1258	-0.0004	-0.0123	0.0006	0.0153	-0.068	-0.0232
COMU5	0.1359	0.0637	0.3613	0.0587	-0.0009	0.0358	0.05	0.1479	0.0155	0.1341	0.1427	0.1463	0.1246
COMU6	0.2718	0.2842	0.747	0.4307	0.0477	0.2847	0.1238	0.256	0.3878	0.4665	0.4676	0.3433	0.356
COOP1	0.3186	0.2818	0.3096	0.7454	0.0583	0.2672	0.0988	0.276	0.3694	0.307	0.3262	0.299	0.2034
COOP2	0.1875	0.0752	0.044	0.1595	0.0498	0.0126	0.0583	-0.0131	0.0919	0.0546	0.0539	0.034	-0.0883

COOP3	-0.1676	-0.0891	-0.2918	-0.4905	-0.0727	0.0001	-0.1489	-0.2334	-0.2495	-0.2416	-0.2275	-0.0794	-0.2449
COOP4	0.2111	0.1775	0.0526	0.3557	-0.24	0.2964	0.0224	0.0365	0.0749	0.155	0.195	0.1747	0.1489
COOP5	0.2154	0.1741	0.2084	0.5256	0.137	0.0648	0.1677	0.1484	0.2069	0.0581	0.1644	0.2145	0.132
COOP6	0.2374	0.3118	0.3839	0.7272	0.1476	0.0913	0.048	0.1432	0.2737	0.2979	0.4149	0.259	0.2456
ECS1	0.0239	0.1337	0.0951	0.1452	0.1498	-0.0162	0.0347	0.0241	0.0031	0.0457	0.1392	0.1165	0.058
ECS2	-0.2768	-0.1217	0.0357	0.0655	0.7814	-0.4014	0.109	-0.1505	-0.002	0.0181	0.0351	-0.2106	-0.0271
ECS3	-0.1467	-0.0068	-0.0133	0.0626	0.5071	-0.193	0.0622	-0.1083	-0.0133	-0.0442	0.0627	-0.115	0.0158
ECS4	-0.0518	0.0281	-0.024	-0.0401	-0.0365	-0.0097	-0.1595	-0.1243	-0.0692	-0.0105	-0.0322	0.0193	-0.0435
ECS5	-0.1878	-0.1012	0.2141	0.044	0.6665	-0.2649	0.0337	0.0891	0.0945	0.188	0.1968	-0.1974	0.041
ECS6	-0.2794	-0.1565	0.1214	0.0933	0.7209	-0.3396	0.061	0.0324	0.0122	0.0955	0.0421	-0.2152	0.0728
ECS7	-0.0748	0.0198	-0.0307	0.036	0.3557	-0.1863	0.0074	-0.0843	0.061	-0.1593	0.0085	-0.1162	-0.1046
ENS1	0.3691	0.3900	0.2174	0.2703	-0.3804	0.7494	0.0346	0.2929	0.2707	0.2952	0.3014	0.5177	0.1614
ENS2	0.2654	0.2253	0.2542	0.2195	-0.0534	0.5464	0.0909	0.2404	0.2089	0.3493	0.2873	0.3059	0.2123
ENS3	0.1452	0.0652	-0.0804	0.0088	-0.1157	-0.08	-0.0489	-0.0392	0.1108	-0.0982	-0.078	-0.0451	-0.0769
ENS4	0.2173	0.2395	0.0864	0.1063	-0.0053	0.0727	0.0622	0.021	0.1776	-0.0105	0.0951	0.0722	0.0227
ENS5	0.0796	0.1793	0.0784	0.0336	0.11	0.0331	0.1075	0.0197	0.2097	-0.0416	0.0932	0.2275	0.0416
ENS6	0.3362	0.2731	0.2666	0.1476	-0.3435	0.7948	0.0915	0.3305	0.1821	0.3113	0.2011	0.4533	0.2241
ENS7	0.2492	0.1415	-0.0911	-0.0305	-0.4689	0.6397	-0.0637	0.1278	-0.0278	0.0097	-0.0984	0.1986	-0.0443
FC1	0.1298	0.0114	0.055	0.0765	0.0221	0.09	0.6077	0.0634	0.0611	0.0885	0.1017	0.1168	0.1128
FC2	0.1367	0.0864	0.1782	0.1472	0.1122	0.0261	0.8671	0.1464	0.158	0.2105	0.2305	0.19	0.1668
GPOW1	0.0286	0.0142	-0.0219	0.033	-0.07	-0.0579	-0.0019	-0.0805	0.0014	0.0213	-0.0824	0.0095	0.0636
GPOW2	0.3257	0.1582	0.1682	0.2418	-0.0652	0.2615	0.0341	0.6194	0.2218	0.1586	0.1166	0.1658	0.2171
GPOW3	0.2064	0.1654	0.277	0.1824	-0.1137	0.2684	0.1275	0.5861	0.278	0.2648	0.1974	0.4158	0.2264
GPOW4	0.2663	0.1613	0.2387	0.2181	-0.0188	0.2925	0.0424	0.6806	0.2641	0.1899	0.1346	0.326	0.1436
GPOW5	-0.067	0.0437	-0.1023	0.0528	0.098	-0.157	-0.037	-0.1073	0.1208	-0.1988	-0.1488	-0.1986	-0.103

GPOW6	0.1811	0.1061	0.2116	0.102	0.0604	0.107	0.154	0.6624	0.3159	0.1417	0.2112	0.0805	0.0399
GPOW7	0.0586	0.0906	-0.0027	0.0801	0.0358	-0.0111	0.1123	-0.0113	0.1347	-0.0053	-0.0737	0.0182	-0.0247
INTN1	0.3028	0.3643	0.3456	0.403	-0.0152	0.33	0.0719	0.3088	0.7434	0.3213	0.3029	0.4494	0.2404
INTN2	0.3742	0.3296	0.3093	0.3325	0.0804	0.154	0.1877	0.2763	0.7936	0.2393	0.307	0.2594	0.2429
INTN3	0.0783	-0.0379	0.0228	-0.0441	0.0198	-0.1032	-0.0011	0.3021	0.3136	-0.0492	-0.0483	-0.0954	-0.0782
INTN4	0.0582	-0.0966	-0.0855	-0.0399	-0.1202	-0.1478	-0.1499	0.0221	0.0234	-0.1394	-0.0926	-0.1209	-0.0401
POW1	0.1749	0.2507	0.1834	0.2058	-0.0943	0.2482	0.0834	0.086	0.0818	0.4141	0.3069	0.2159	0.1043
POW2	0.2487	0.3291	0.3197	0.2918	0.0138	0.3084	0.0741	0.1715	0.2294	0.6176	0.2292	0.2964	0.1872
POW3	-0.0203	0.1072	0.376	0.2274	0.2412	0.0553	0.2028	0.167	0.132	0.6919	0.469	0.1731	0.3104
POW4	0.0641	0.1387	0.2405	0.1386	0.1287	0.0843	0.1382	0.2325	0.1749	0.4782	0.1602	0.155	0.225
POW5	0.3329	0.3151	0.4731	0.3303	-0.1298	0.4179	0.2061	0.276	0.2941	0.7836	0.4798	0.5143	0.39
POW6	0.0214	0.1958	0.3527	0.1674	0.1494	0.0731	0.0346	0.1337	0.2087	0.5638	0.378	0.1535	0.2066
SAT1	-0.1064	-0.2243	-0.3844	-0.3235	-0.0985	-0.1917	-0.1955	-0.2331	-0.2558	-0.4503	-0.6753	-0.2687	-0.3138
SAT2	0.2128	0.2805	0.3603	0.2683	-0.014	0.2528	0.2266	0.2425	0.1705	0.3784	0.7206	0.3199	0.3338
SAT3	0.1343	0.0449	0.1477	0.1791	-0.0458	-0.0197	0.0752	0.1118	0.1587	0.0552	0.4165	0.1069	0.1433
SAT4	0.0637	0.0838	0.2704	0.2066	0.0562	0.0741	0.0757	0.2083	0.1303	0.2713	0.535	0.1725	0.2288
SAT5	0.2339	0.3663	0.4685	0.3908	0.1191	0.2538	0.1107	0.1466	0.329	0.4976	0.7273	0.2864	0.2811
SAT6	0.1663	0.2682	0.3069	0.3907	0.1509	0.1402	0.1822	0.0578	0.2502	0.3925	0.6811	0.2779	0.2987
SOS1	0.0218	0.1305	0.3779	0.3037	0.2593	0.0125	0.1236	0.1352	0.2602	0.321	0.3441	0.2648	0.2438
SOS10	0.1272	0.2523	0.1001	0.1672	0.1412	0.0606	0.0252	-0.011	0.2555	-0.0093	0.0937	0.08	-0.0285
SOS2	0.0828	0.1241	0.3113	0.2109	0.2201	0.0955	0.172	0.2618	0.1705	0.333	0.3425	0.2654	0.3229
SOS3	0.3156	0.4125	0.3793	0.2738	-0.1652	0.3809	0.0123	0.2595	0.3589	0.3378	0.3121	0.6751	0.3146
SOS4	0.3135	0.4002	0.3416	0.2663	-0.1595	0.4853	0.1086	0.3652	0.2887	0.3436	0.2996	0.701	0.2215
SOS5	0.2729	0.2233	0.1334	0.1057	-0.3195	0.2966	0.1644	0.0932	0.1476	0.2237	0.1494	0.5446	0.1325
SOS6	0.3923	0.3389	0.2239	0.272	-0.2533	0.4202	0.1743	0.2891	0.2079	0.2793	0.2358	0.7072	0.2736

SOS7	0.0694	0.0756	0.1729	0.2441	0.2386	-0.0853	0.2715	0.0539	0.1357	0.1441	0.2282	0.0675	0.11
SOS8	0.2192	0.1719	0.2297	0.1436	-0.1349	0.2247	0.1826	0.1437	0.1576	0.262	0.1958	0.5742	0.2645
SOS9	0.2195	0.2025	0.1312	0.1752	-0.0397	0.2003	0.1847	0.2133	0.2338	0.0246	0.1482	0.3839	0.0506
TRT1	0.1139	0.2306	0.2711	0.1845	0.011	0.1609	0.0286	0.144	0.1553	0.252	0.2643	0.2066	0.6462
TRT2	0.0745	0.0286	0.1815	0.1732	-0.0907	0.1038	0.0595	0.163	0.0697	0.1778	0.2343	0.1879	0.4704
TRT3	0.1949	0.2845	0.1775	0.1398	-0.1256	0.214	0.1195	0.0152	0.1535	0.2606	0.2367	0.2561	0.5412
TRT4	-0.0418	-0.0356	0.0465	0.0665	0.1382	-0.1858	0.0652	-0.1178	0.0435	-0.1107	0.0381	-0.0604	-0.0129
TRT5	0.0152	0.2233	0.3079	0.2281	0.1695	0.0148	0.1967	0.1624	0.1984	0.2045	0.3026	0.1693	0.6195
TRT6	0.1521	0.1812	0.3399	0.258	0.0413	0.142	0.1554	0.235	0.2065	0.3354	0.2678	0.3062	0.7209

Source: Author compiled from output Generated by SmartPLS

Table 6.17 Assessment reliability, CR and AVE with Items Loading (Grater than equal 0.60)

Reflective Constructs	Items	Load ing	T-value	AVE	CR	R ²
Trust (TRT)	TRT1 -Keeps its promises	0.694	7.626	0.508	0.755	0.382
	TRT2 (Always been Sincere)	-	-			
	TRT3 (Confidently shared information)	-	-			
	TRT4 (Trust on customers)	-	-			
	TRT5 (Consideration of customers right)	0.677	6.507			
	TRT6 (Higher level of Integrity)	0.764	12.162			
Commitment (COMT)	COMT1 (Care about long term success)	0.713	8.147	0.501	0.743	0.287
	COMT2 (Committed to stakeholder)	0.672	7.043			
	COMT3 (Importance on stakeholder)	0.718	7.613			
	COMT4 (Maintain the customers intends)	-	-			
	COMT5 (Attention on customers deserves)	-	-			
	COMT6 (Decision making in favor of customers)	-	-			
Communication (COMU)	COMU1 (Understanding of production process)	0.647	5.552	0.592	0.739	0.495
	COMU2 (Just-time sharing information)	-	-			
	COMU3 (well informed about investment)	-	-			
	COMU4 (Wrong information regarding business)	-	-			
	COMU5 (Understandable channel communication)	-	-			
	COMU6 (sharing price change information)	0.874	18.487			
Cooperation (COOP)	COOP1 (Cooperation for forecasting production plan	0.762	13.490	0.521	0.763	0.415
	COOP2 ((Cooperation for product process)	-	-			
	COOP3 (Cooperation for inventory holding)	-	-			
	COOP4 (Cooperation for sharing technology)	-	-			
	COOP5 (Sharing responsibilities)	0.603	5.582			
	COOP6 (work together for mutual success)	0.801	14.674			
Power (POW)	POW1 (Stakeholder Withdrawal of support)	-	-	0.569	0.796	0.528
	POW2 (Threat for dealing competitors)	0.667	7.712			
	POW3 (Incentive for cooperation)	0.719	9.712			
	POW4 (Stakeholder expectation of cooperation)	-	-			
	POW5 (Stakeholder experience and knowledge)	0.864	32.161			
	POW6 (Just in time and logical information provided)	-	-			
Satisfaction (SAT)	SAT1 (Received frequent complains)	-	-	0.578	0.804	0.584
	SAT2 (Satisfied on customers)	0.710	9.785			
	SAT3 (Wishes to discontinue of business)	-	-			
	SAT4 (Recommended customers for business)	-	-			
	SAT5 (Competitive price offer)	0.810	21.764			
	SAT6 (Price that reflected quality of product)	0.757	15.487			
Business Sustainability	BSUT1 (Awareness about sustainability)	-	-	0.590	0.740	0.487
	BSUT2 (Goals for accomplishing sustainability)	0.680	6.832			
	BSUT3 (Campaign for environmental protection)	0.847	19.189			
	BSUT4 (Partnership with NGO and civil society)	-	-			
	BSUT5 (Consideration of consumerism)	-	-			
	BSUT6 (Concentration on green value chain)	-	-			
Financial	FC1 (Benefits for sustainable Performance)	0.610	2.856	0.561	0.713	0.172

Control (FC)	FC2 (Penalty for unsustainable operations)	0.866	8.503			
Governance Power (GPOW)	GPOW1 (Pressure for reducing cost of production)	-	-	0.502	0.749	0.446
	GPOW2 (Relationship building for cost reduction)	0.709	7.562			
	GPOW3 (Demand of quality and hygiene certificates)	-	-			
	GPOW4 (Maintaining communication with facilitating org.)	0.674	8.744			
	GPOW5 (Govt. regulation on production and distribution)	-	-			
	GPOW6 (Govt. regulation through private governors)	0.736	9.660			
	GPOW7 (Government pressure for fare price to farmer)	-	-			
Integration (INTN)	INTN1 (Multidisciplinary knowledge for best policy)	0.778	11.525	0.636	0.777	0.554
	INTN2 (Participation of customers for decision making)	0.816	16.733			
	INTN3 (Internal department communication)	-	-			
	INTN4 (Stakeholder's integration for ICT supports plan)	-	-			
Economic Sustainability (ECS)	ECS1 (Net Sales)			0.576	0.803	0.399
	ECS2 (Cost of goods Sold)	0.761	10.401			
	ECS3 (Expected Profit)	-	-			
	ECS4 (Employee payroll and benefits)	-	-			
	ECS5 (Income Tax)	0.722	9.124			
	ECS6 (Subsidiaries)	0.793	15.943			
	ECS7 (Productivity)	-	-			
Environmental Sustainability (ENS)	ENS1 (Sources of energy)	0.782	17.489	0.577	0.803	0.733
	ENS2 (Sources of water)	-	-			
	ENS3 (Soil Conservation)	-	-			
	ENS4 (Effect on biodiversity)	-	-			
	ENS5 (Emission of greenhouse gas and carbon)	-	-			
	ENS6 (Correlation between waste and profitability)	0.798	16.740			
	ENS7 (Discharge dust on air, water and soil)	0.695	10.206			
Social Sustainability (SOS)	SOS1 (Nature of employment)	-	-	0.575	0.802	0.585
	SOS2 (Employee turnover rate)	-	-			
	SOS3 (Employee extra benefits without monthly salary)	0.696	9.098			
	SOS4 (Employee participation at decision-making)	0.796	20.169			
	SOS5 (Record and notification of diseases and accidents)	-	-			
	SOS6 (Employee Training)	0.779	13.321			
	SOS7 (Policy for preventing discrimination)	-	-			
	SOS8 (Social award for environmental performances)	-	-			
	SOS9 (Employee and organizational corruption)	-	-			
	SOS10 (Health and safety policy)	-	-			

Sources: Author compiled from output Generated by SmartPLS

Table 6.18 Inter- construct Correlation of First- order Construct (Second-time run model)

Reflective Constructs	AVE	BUS	COMT	COMU	COOP	ECS	ENS	FC	GPOW	INTN	POW	SAT	SOS	TRT
BUS	0.590	0.768												
COMT	0.501	0.398	0.708											
COMU	0.592	0.253	0.273	0.769										
COOP	0.521	0.350	0.293	0.428	0.722									
ECS	0.576	-0.330	-0.219	0.068	0.131	0.759								
ENS	0.577	0.454	0.376	0.225	0.154	-0.486	0.760							
FC	0.561	0.206	0.043	0.141	0.125	0.092	0.037	0.749						
GPOW	0.502	0.238	0.227	0.267	0.249	0.017	0.285	0.110	0.709					
INTN	0.636	0.433	0.362	0.385	0.454	0.042	0.249	0.166	0.310	0.797				
POW	0.569	0.330	0.312	0.464	0.314	0.095	0.300	0.220	0.211	0.334	0.754			
SAT	0.578	0.303	0.361	0.487	0.425	0.099	0.214	0.223	0.179	0.371	0.523	0.760		
SOS	0.575	0.482	0.474	0.368	0.366	-0.239	0.531	0.134	0.300	0.413	0.425	0.353	0.758	
TRT	0.508	0.102	0.256	0.359	0.268	0.109	0.102	0.180	0.198	0.291	0.356	0.354	0.318	0.713

Source: Author compiled from output Generated by SmartPLS

Table 6.19 Cross Loading Generated by SmartPLS (Second-time run model)

Construct /Item	BUS	COMT	COMU	COOP	ECS	ENS	FC	GPOW	INTN	POW	SAT	SOS	TRT
BSUT2	0.6796	0.3107	0.079	0.247	-0.2851	0.3218	0.0919	0.1537	0.258	0.1118	0.0981	0.2686	0.044
BSUT3	0.8471	0.3077	0.2815	0.2897	-0.2351	0.3747	0.2087	0.2073	0.3924	0.3609	0.3342	0.4514	0.1053
COMT1	0.2723	0.7127	0.1387	0.2862	-0.1498	0.2803	0.0167	0.1255	0.2101	0.1906	0.2888	0.3171	0.1814
COMT2	0.2512	0.6718	0.2209	0.1789	-0.044	0.173	0.0597	0.136	0.3163	0.2872	0.2276	0.3359	0.2185
COMT3	0.3187	0.7176	0.2194	0.1371	-0.2891	0.3499	0.0098	0.2268	0.2307	0.1692	0.2378	0.3453	0.128
COMU1	0.0835	0.1522	0.6472	0.2231	0.0262	0.1032	0.0894	0.1463	0.125	0.222	0.1916	0.1964	0.181
COMU6	0.2722	0.2545	0.8744	0.4089	0.0709	0.2241	0.1238	0.2502	0.4152	0.4551	0.5048	0.348	0.3469
COOP1	0.276	0.2351	0.308	0.7616	0.0614	0.2429	0.0987	0.2743	0.3979	0.3023	0.3197	0.2966	0.1849
COOP5	0.2156	0.1319	0.1943	0.6018	0.0884	0.0279	0.1679	0.1285	0.2406	0.0642	0.138	0.2449	0.1434
COOP6	0.2659	0.2446	0.389	0.8012	0.1333	0.0405	0.0479	0.1317	0.3287	0.2559	0.4019	0.2599	0.2393
ECS2	-0.213	-0.182	-0.073	0.1046	0.7613	-0.448	0.1089	-0.1532	0.0069	-0.018	0.041	-0.2114	0.0299
ECS5	-0.194	-0.148	0.183	0.0935	0.7215	-0.2914	0.0335	0.1092	0.0944	0.1412	0.158	-0.1371	0.1049
ECS6	-0.336	-0.166	0.0661	0.0991	0.7927	-0.3567	0.061	0.0992	0.0048	0.1046	0.0389	-0.1904	0.1181
ENS1	0.4404	0.3472	0.222	0.2569	-0.3486	0.7824	0.0347	0.2228	0.3115	0.2775	0.2566	0.5313	0.1215
ENS6	0.3276	0.3007	0.2593	0.0955	-0.3362	0.7976	0.0916	0.2799	0.2235	0.3076	0.2398	0.41	0.1686
ENS7	0.2454	0.1877	-0.008	-0.042	-0.4465	0.6953	-0.0635	0.1301	-0.0154	0.0635	-0.0615	0.2306	-0.0994
FC1	0.1476	0.0045	0.0536	0.0411	0.0171	0.0669	0.6095	0.0552	0.0754	0.0906	0.1262	0.0718	0.08
FC2	0.1639	0.0561	0.1419	0.1307	0.1039	0.0036	0.866	0.1022	0.1596	0.2179	0.1991	0.1216	0.1749
GPOW2	0.1863	0.1843	0.1639	0.2104	-0.0377	0.2585	0.034	0.7093	0.164	0.1951	0.105	0.1863	0.2364
GPOW4	0.2154	0.1964	0.2532	0.2228	-0.0145	0.2411	0.0426	0.6735	0.2257	0.1381	0.1179	0.3617	0.1386
GPOW6	0.1024	0.1	0.1466	0.0958	0.0873	0.1059	0.1539	0.7359	0.2648	0.1154	0.156	0.084	0.0493
INTN1	0.3309	0.3345	0.3323	0.4089	-0.0128	0.3013	0.0718	0.2427	0.7778	0.3365	0.2769	0.4232	0.223

INTN2	0.3581	0.2474	0.2835	0.319	0.0765	0.1046	0.1878	0.2517	0.8163	0.2028	0.3131	0.2429	0.2401
POW2	0.2893	0.2844	0.3067	0.2559	0.049	0.2637	0.0741	0.1575	0.2618	0.6668	0.2642	0.2971	0.1704
POW3	0.032	0.0921	0.3415	0.1822	0.2973	0.0322	0.2025	0.133	0.1543	0.7186	0.4259	0.1831	0.2861
POW5	0.3987	0.3207	0.3954	0.2722	-0.0897	0.3603	0.2061	0.1847	0.3295	0.8635	0.4713	0.4539	0.3314
SAT2	0.2489	0.265	0.336	0.2345	-0.0073	0.2249	0.2264	0.1794	0.1876	0.3569	0.7103	0.289	0.3414
SAT5	0.2429	0.2966	0.4852	0.3559	0.0966	0.1933	0.1108	0.1761	0.3538	0.4459	0.8102	0.278	0.2172
SAT6	0.1977	0.2594	0.2731	0.376	0.1327	0.0647	0.1822	0.0473	0.294	0.3842	0.7573	0.2393	0.2604
SOS3	0.3125	0.3743	0.3478	0.2668	-0.1485	0.3544	0.0123	0.1753	0.3879	0.3244	0.2919	0.6955	0.2986
SOS4	0.3397	0.3394	0.2974	0.2981	-0.1597	0.4593	0.1086	0.2896	0.3265	0.3379	0.2806	0.7959	0.2212
SOS6	0.4407	0.3676	0.1986	0.266	-0.2334	0.3899	0.1743	0.2121	0.2321	0.3048	0.2342	0.779	0.2092
TRT1	0.101	0.2169	0.2158	0.1731	0.0115	0.1356	0.0285	0.1433	0.1694	0.2409	0.2424	0.192	0.6944
TRT5	0.0239	0.1553	0.2654	0.1834	0.1638	-0.028	0.1967	0.0867	0.2184	0.1979	0.2731	0.1826	0.6765
TRT6	0.1353	0.1769	0.2841	0.2143	0.0596	0.1069	0.1554	0.1891	0.231	0.3164	0.2441	0.2967	0.7639

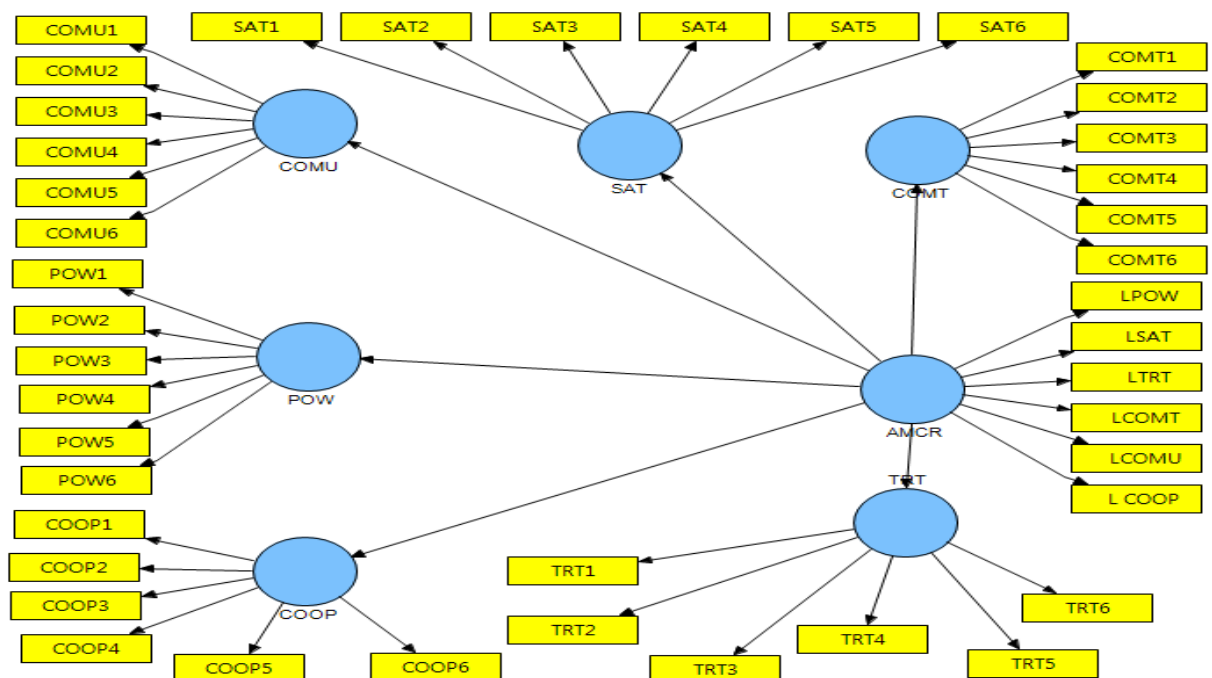
Source: Author compiled from output Generated by SmartPLS

The above Tables 6.17, 6.18 and 6.19 demonstrated the outcomes of the second PLS run model after elimination of the items loading less than equal to 0.60. By the analysis of the above, it was revealed that in terms of the item reliability, internal consistency, and discriminant validity, it has observed that the measurement model was considered satisfactory with the reference to meeting the criteria of convergent validity (item loading > 0.60 , AVE > 0.50 and CR > 0.70) and discriminant validity (square root of AVE $>$ inter-constructs correlations). The result of the first-order measurement model was thus confirmed to be satisfactory from all reference values and has employed for testing the higher-order measurement model as well as the structural model in the subsequent sections.

6.4.1.1.2 Higher order reflective measurement model

In this step, the present study forecasts the measurement properties of the higher-order reflective constructs: agricultural marketing channel relationship (AMCR), sustainability governance (SUG) and sustainable performance (SUP).

Figure 6.3 Reflective measurement model for AMCR



Noted: (L= Latent variable score)

Source: Author compiled from Generated by SmartPLS

As discussed in the chapter-3, properties of the reflective construct measurement model were evaluated through the item reliability, internal consistency and the AVE (average variance extracted) that have shown in the Table-6.17 and Table 6.18. The Figure-6.3 demonstrates the hierarchical relationships of agricultural marketing channel relationship (AMCR) with reflective first- order constructs: trust (TRT), commitment (COMT), satisfaction (SAT), communication (COMU), cooperation (COOP) and power (POW).

In the chapter-5 described the details of the higher order reflective measurement model. According to earlier studies, the higher –order construct agricultural marketing channel relationship (AMCR) was measured by using the two- stage approach that was recommended by Ringle, sarstuds, & straub (2012 and Wetzels et al. (2009) latent variable score of such as, (LTRT, LCOMT, LSAT, LCOMU, LCOOP and LPOW) that were derived from first –order constructs. The result of the measurement model of the higher –order reflective constructs of AMCR is found in the Table 6.20.

Table 6.20 Assessment of Reliability, CR and AVE for Higher-order Construct: AMCR

Higher Construct	Order	Items (LVS)	Loading	T-value	AVE	CR
Agricultural Marketing channel relationship (AMCR)		Trust (LTRT)	0.6454	6.9824	0.5188	0.8656
		Power (LPOW)	0.7645	14.2446		
		Satisfaction (LSAT)	0.774	15.2573		
		Commitment (LCOMT)	0.6708	10.4442		
		Communication (LCOMU)	0.7533	12.8269		
		Cooperation (LCOOP)	0.7039	10.7938		

Noted: (L= Latent variable score)

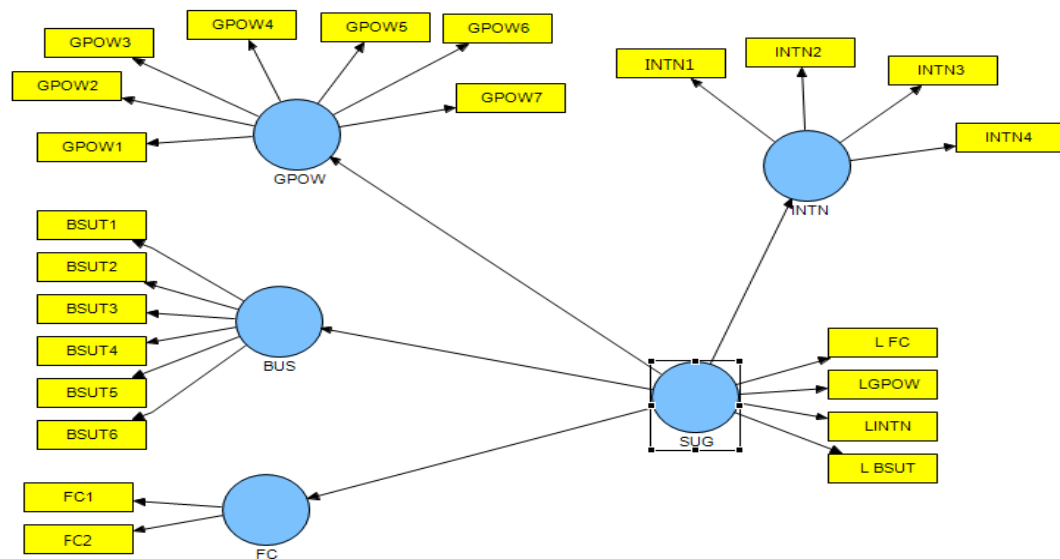
Source: Author compiled from output Generated by SmartPLS

The Table 6.20 demonstrated that the loading of the each latent variables scores corresponding to the agricultural marketing channel relationship (AMCR) is more than 0.60 that is above than the cut-off 0.60 value used by Moorees & Chang (2006) and supported by Hair et al. (2011) for exploratory research. It also mentioned that corresponding t-values of items loading (latent variable score) were found significant. Furthermore, Table 6.20 also represented the statistical evidence regarding the internal consistency of the (CR= 0.8656) that is higher than the acceptable value 0.7 (Hair et al., 2011). The average variance extracted (AVE) also proved the convergent validity of

this model, it was found AVE value is more than acceptable value 0.50 with reference to Hair et al. (2011).

In addition, another hierarchal higher–order constructs sustainability governance (SUG) constructs was measured by the four first-order constructs: business sustainability (BUS), financial control (FC), integration (INTN) and governance power (GPOW) that has demonstrated in figure 6.4

Figure 6.4 Reflective Measurement Model for SUG



Noted: (L= Latent variable score)

Source: Author compiled from Generated by SmartPLS

According to (Ringle, sarstuds, & straub, 2012; Wetzels et al., 2009) at the higher – order construct sustainability governance (SUG) was measured by using the two- stage approach such as latent variable score of (LFC, LGPOW, LINTN, LBUS) that were derived from first –order construct. The result of the measurement model of the higher –order reflective constructs of SUG are found in the Table 6.21

Table 6.21 Assessment of Reliability, CR and AVE for Higher- order Construct: SUG

Constructs	Items	Loading	T-value	AVE	CR
Sustainability Governance (SUG)	Business Sustainability (LBSUT)	0.8002	16.6216	0.5021	0.7735
	Financial Control (LFC)	0.4007	2.5612		
	Governance Power (LGPOW)	0.7368	8.108		
	Integration (LINTN)	0.7695	11.2324		

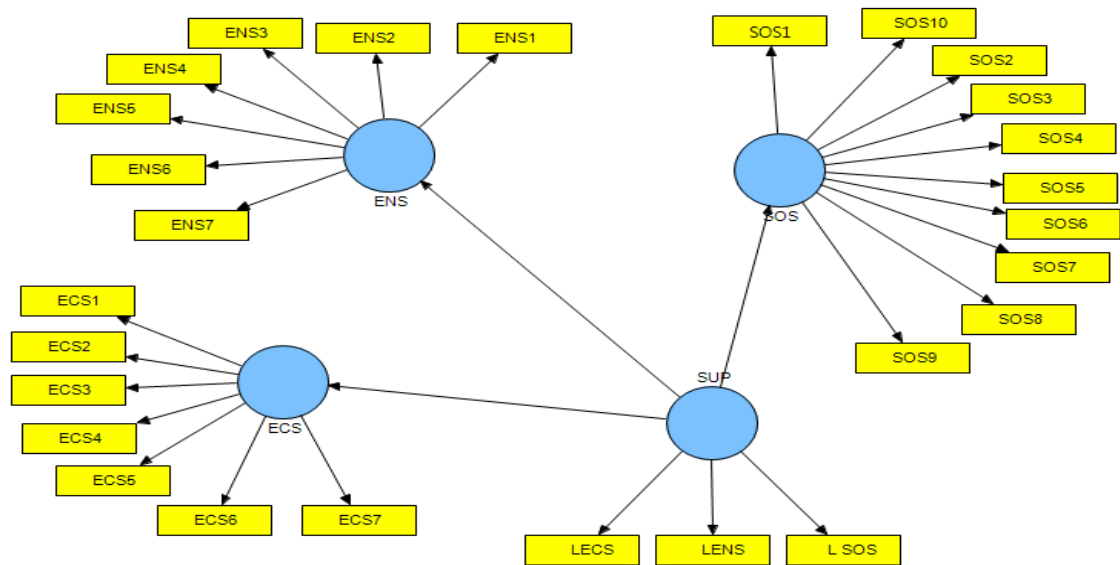
Noted: (L= Latent Variable Score)

Source: Author compiled from output Generated by SmartPLS

The Table 6.21 demonstrated that the loading of the each latent variables scores corresponding to sustainability governance (SUG) is more than 0.60 that is above than the cut-off 0.60 value used by Moorees & Chang (2006) excluding (LFC). It also mentioned that corresponding t-values of items loading (latent variable score) were found significant. It has been noted that LFC has denied the rules of item reliability. But this construct has been accepted in the higher-order construct as the measurement construct. Because t-value is 2.5612, which is greater than 1.65 and item in the higher-order construct CR and AVE are satisfactory this decision has been supported by Hair et al. (2011). So, it has been considered that at the higher-order level measurement it may be accepted as the exploratory nature of dimension for measuring the sustainability governance.

Furthermore, Table 6.21 also represented the statistical evidence regarding the internal consistency of the (CR= 0.7735). This study found this value is higher than the acceptable value 0.7 (Hair et al., 2011). The average variance extracted (AVE) was also established by the convergent validity of this model; it was found AVE value is more than tolerable value 0.50 with reference of (Hair et al., 2011) additionally, hierarchical higher-order constructs sustainable performance was measured by the three first order constructs: economic sustainability (ECS), environmental sustainability (ENS) and social sustainability (SOS) that was confirmed by figure-6.5 as follows.

Figure 6.5 Reflective Measurement Model for SUP



Note: (L= Latent variable score).

Source: Author compiled from Generated by SmartPLS

According to empirical studies at the higher –order construct sustainable performance (SUP) was measured through using the two- stage approach such as latent variable score of (LECS, LENS and LSOS) that were derived from first –order construct (Ringle et al., 2012; Wetzels et al., 2009). The result of the measurement model of the higher –order reflective constructs of SUP is found in the Table 6.22.

Table 6.22 Assessment of Reliability, CR and AVE for Higher- order Construct: SUP

Constructs	Items	Loading	T-value	AVE	CR
Sustainable Performance (SUP)	Economic Sustainability (LECS)	-0.6864	5.9527	0.6481	0.8454
	Environmental Sustainability (LENS)	0.8700	26.8598		
	Social Sustainability (LSOS)	0.8464	15.0037		

Source: Author compiled from output Generated by SmartPLS

Noted (L= Latent Variable Score)

Table 6.22 confirmed that the loading of the each latent variable scores corresponding to sustainable performance (SUG) is more than 0.60 that is more than the cut-off 0.60 value used by Moorees and Chang (2006). It also mentioned that corresponding t-values of items loading (latent variable score) were found significant. Furthermore, Table 6.22 also signified the statistical confirmation regarding the internal consistency of the (CR= 0.8454). This study found this value is higher than the acceptable value 0.7

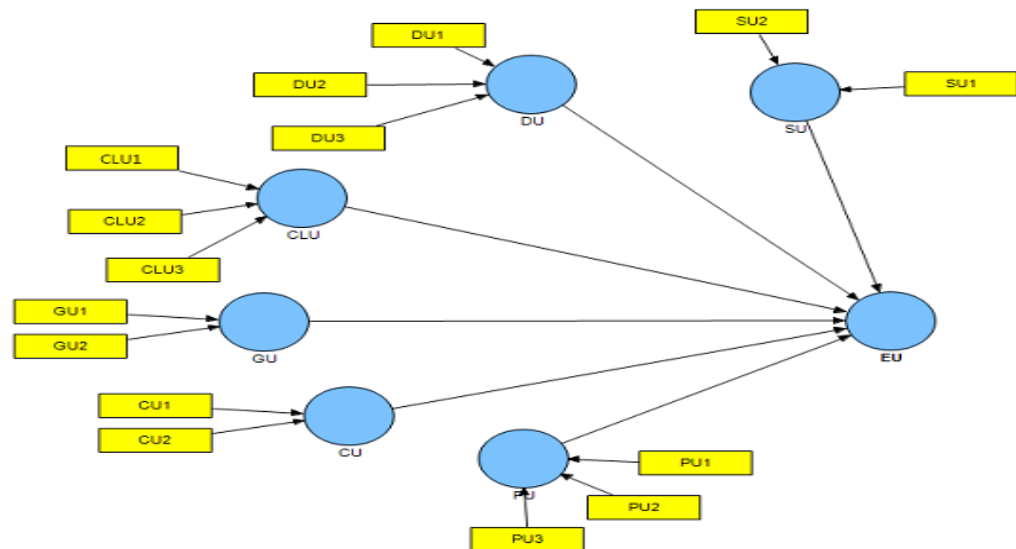
(Hair et al., 2011). The average variance extracted (AVE) also established the convergent validity of this model; it was found AVE (0.6481) value is more than tolerable value 0.50 with reference to (Hair et al., 2011).

6.4.1.2 Assessment of Formative Measurement Model

6.4.1.2.1 First order formative measurement model

In the present research, environmental uncertainty (EU) was measured by first-order formative and higher –order formative mode also. For measurement of, the second-order hierarchical construct two-stage approach such latent variable score (LCLU, CLU, LDU, LGU, LPU and LSU) were used according to the recommendation of Ringle et al. (2012); Wetzels et al. (2009) first- order constructs: climate uncertainty (CLU), competitor uncertainty (CU), demand uncertainty (DU), government uncertainty (GU), political uncertainty (PU) and supply uncertainty (SU). Figure-6.6 demonstrated the formative measurement model of environmental uncertainty (EU) before producing latent variable scores.

Figure 6.6 Formative Measurement Model for EU First-order Construct



Source: Author compiled from output Generated by SmartPLS

The measurement properties of the formative construct were assessed by the justification of significance of item weight and loading scores as well as multi-collinearity in the formative indicators according to the reference of Henseler et al.

(2009) & Hair et al. (2011). The following subsequent section will discuss the relevant details in this regards.

Weight and loading (first-order constructs)

According to empirical research studies, like Henseler et al. (2009); Hair et al. (2011) the measurement model of formative constructs were evaluated by the appraising the significance of the item weight and loading scores. In this circumstance, the results of the first order constructs are shown in the Table-6.23.

Table 6.23 First-order Formative Construct

Formative construct	Items	Item Weight	t-value
Climate uncertainty (CLU)	CLU1-(Drought occurrences and its duration)	0.334	0.749
	CLU2-(Flooding occurrences and its duration)	0.813	1.650
	CLU3-(The temperature varies and duration)	0.330	0.640
Competitor uncertainty (CU)	CU1- (Competitors' actions are unpredictable)	0.903	6.161
	CU2-(Competition is unpredictable due to international)	0.334	0.996
Demand uncertainty (DU)	DU1- (The volume of buyer demand)	0.369	1.150
	DU2- (Customer's buying behavior change)	0.812	2.264
	DU3- (Customer always expect discount)	0.112	0.327
Government uncertainty (GU)	GU1-(Affect of government production and distribution policies)	0.955	2.089
	GU2-(The guaranteed price from government regulation)	0.181	0.411
Political uncertainty (PU)	PU1-(Prophecy of change of the government and pre-election situation)	0.535	1.083
	PU2-(Influence of political demonstration and duration)	0.250	0.541
	PU3-(Amount of business loss by political demonstration)	0.596	1.329
Supply uncertainty (SU)	SU1 (Delivery time and quality of dairy support product)	0.544	1.000
	SU2- (Price change of dairy support product)	0.681	1.152

Source: Author compiled from output Generated by SmartPLS

Table 6.23 demonstrated the all the items having weighted scores greater than the recommended value (weight> 0.10) referred by Andreev, Heart, Maoz, & Pliskin (2009). On the other hand, some item weights were not found very significant on the respective constructs according to Hair et al. (2011). However, in the present research,

the items were not deleted due to the omission of any indicator might defeat the concept of the construct confirmed by Bollen & Lennox (1991). Other empirical studies, like Fornell et al. (1990) and Santosa et al. (2005) also recommended the view of all formative items that should be included even if the item weight is very low or negative.

Collinearity Test for Formative Constructs

According to the previous research, like Henseler (2009) and Hair et al. (2011) suggestions collinearity among the first order formative constructs: climate uncertainty (CLU), competitor uncertainty (CU), demand uncertainty (DU), government uncertainty (GU), political uncertainty (PU) and supply uncertainty (SU) were checked by the calculation of the variance influence factor (VIF) values (under the support of SPSS software) that are represented in Table 6.24.

Table 6.24 Collinearity Test for Formative Construct

Formative Constructs	Items	Tolerance	VIF
Climate uncertainty (CLU)	CLU1-(Drought occurrences and its duration)	0.842	1.188
	CLU2-(Flooding occurrences and its duration)	0.999	1.001
	CLU3-(The temperature varies and duration)	0.842	1.188
Competitor uncertainty (CU)	CU1- (Competitors' actions are unpredictable)	0.998	1.002
	CU2-(Competition is unpredictable due to international)	0.998	1.002
Demand uncertainty (DU)	DU1- (The volume of buyer demand)	0.951	1.052
	DU2- (Customer's buying behavior change)	0.937	1.067
	DU3- (Customer always expect discount)	0.972	1.029
Government uncertainty (GU)	GU1-(Affect of government production and distribution policies)	0.972	1.028
	GU2-(The guaranteed price from government regulation)	0.972	1.028
Political uncertainty (PU)	PU1-(Prophecy of change of the government and pre-election situation)	0.853	1.173
	PU2-(Influence of political demonstration and duration)	1.000	1.000
	PU3-(Amount of business loss by political demonstration)	0.853	1.173
Supply uncertainty (SU)	SU1 (Delivery time and quality of dairy support product)	0.893	1.120
	SU2- (Price change of dairy support product)	0.893	1.120

Source: Author compiled from output Generated by SPSS

Table 6.24 described that VIF (variance influence factor) value of all items corresponding to the respective construct less than 5. Therefore, the study has been

verified that all formative first order constructs were free from the multi-collinearity problem according to references to Henseler et al. (2009) and Hair et al. (2011).

6.4.1.2.2 Higher order formative measurement model

As this study used the two-stage approach suggested by Ringle et al. (2012); Wetzels et al. (2009), each of the first-order constructs was replaced by their construct latent variable scores (LVS) to measure EU at the higher-order level (see Figures 6.4 and 6.5). The measurement of the higher-order constructs (EU) is depicted in Table 6.25 as follows.

Table 6.25 Measurement of Higher-order Formative Construct: Environmental Uncertainty

Higher-order construct	Items	Weight	t-value	Loading	t-value	Tolerance	VIF
Environmental Uncertainty (EU)	LCU	0.3753	0.821	0.7299	2.1839	0.744	1.344
	LSU	0.2128	0.6539	0.3672	1.1279	0.819	1.221
	LDU	0.2305	0.9046	0.5553	2.3084	0.770	1.298
	LGU	0.2605	0.6712	0.5183	1.5287	0.865	1.155
	LCLU	0.2749	1.3577	0.5079	2.181	0.856	1.168
	LPU	0.4000	2.4028	0.6133	3.5253	0.920	1.087

Source: Author compiled from output Generated by SmartPLS

Noted :(L= Latent Variable Score)

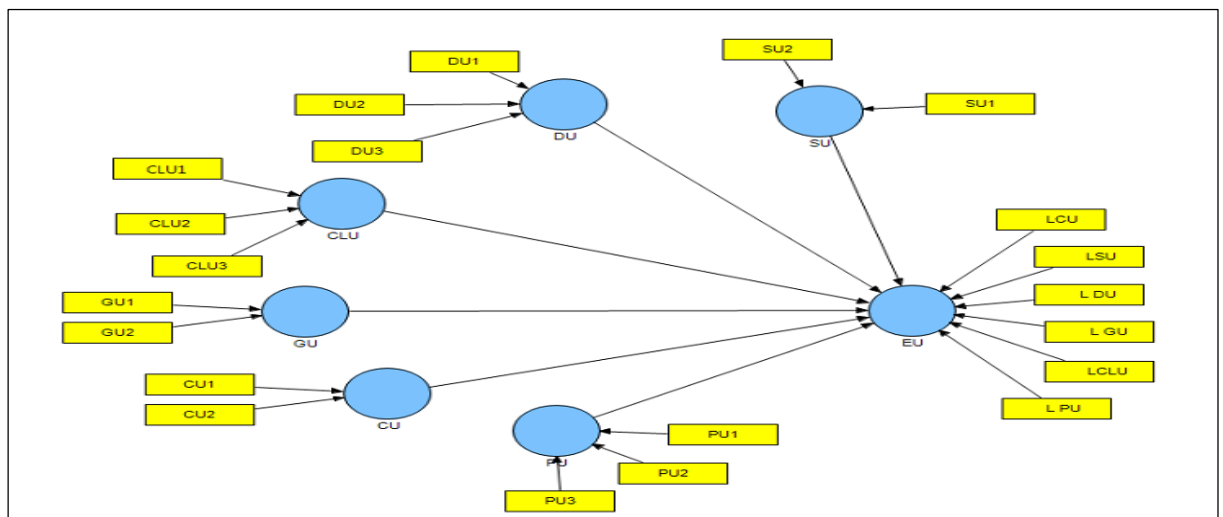
Table 6.25 elucidated that, the weights of all items (latent variable scores) are greater than 0.10, it was accepted as the reference of Andreev et al. (2009) and the exception of (LPU) t-values were not significant with weight loadings. However, to that extent, the concern of item loading, except the items (latent variable scores) including LSU and LGU remaining are items (latent variable scores) have found significant as t-values are more than 1.65 at $p=.05$. It has mentioned that for formative construct all items (latent variable scores) were adaptable for the further processing model according to the references of the Fornell et al. (1990) and Santosa et al. (2005). Therefore, with reference to Hair et al. (2011) all elements of EU show adequate measurement properties.

In addition, Table 6.25 described that VIF (variance influence factor) values of all items (latent variable scores) corresponding to the respective construct are less than 5 (five). Therefore, the study again substantiated that in the higher-order construct level

all item (latent variable scores) are free from the multi-collinearity problems according to references given in earlier studies like Henseler et al. (2009) and Hair et al. (2011).

The analysis of the findings of higher-order formative constructs environmental uncertainty (EU) revealed that the five first-order constructs (latent variable) scores (LCU, LDU, LSU, LCLU, LGU and LPU) have contained the essential measurement properties corresponding to the higher-order construct: environmental uncertainty (EU). Therefore, it could be remarked that the dimensions of environmental uncertainty (EU) convey adequate importance to represent the higher-order construct has shown in the following figure 6.7.

Figure 6.7 Formative Measurement Model for EU Second-order constructs



Source: Author compiled Generated by SmartPLS

Noted: (L= Latent Variable Score)

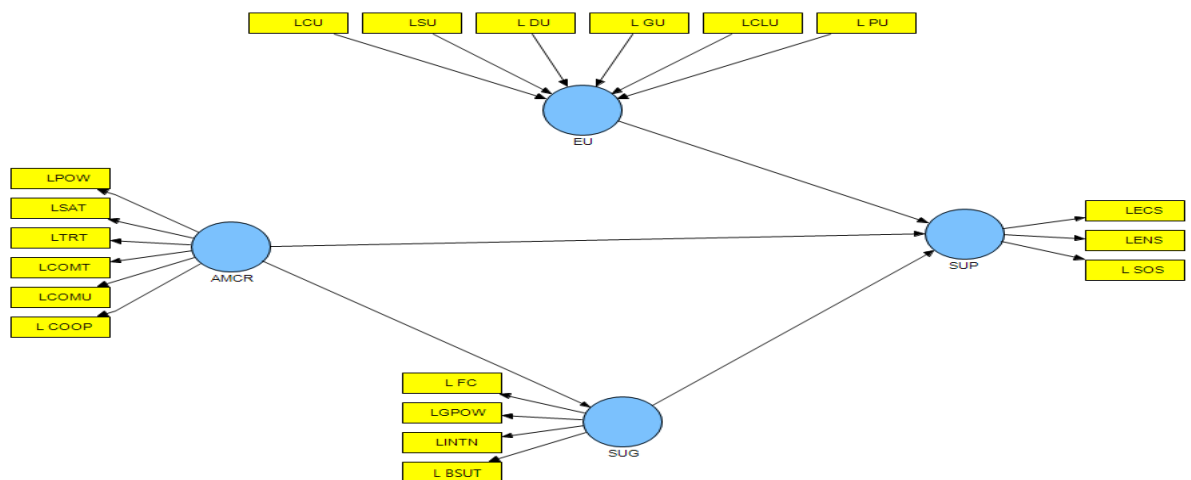
Once the measurement model was refined, the refined model was put forward in the structural model analysis (Henseler et al., 2009). The analysis of the refined measurement model showed that all the measurement items were consistent and showed good measurement properties. These findings led to considering the measurement model as valid for structural model assessment.

6.4.1.3 Summary of the Higher-order Construct (both Formative and Reflective)

Figure 6.8 demonstrated the summary of the higher-order construct and their respective first-order construct's latent variable score of the higher order reflective constructs: agricultural marketing channel relationship (AMCR) followed by LTRT, LPOW,

LCOMT, LSAT, LCOMU and LCOOP; Sustainability governance (SUG) followed by LFC, LGPOW, LINTN and LBUST; as well as Sustainable performance (SUP) followed by LECS, LENS and LSOS) respectively. Additionally, this figure showed the higher-order formative constructs such as Environmental uncertainty (EU) followed by the LCU, LSU, LDU, LGU, LCLU and LPU respectively. The basic contribution of the figure to a better understanding of the audiences regarding the higher-order construct finally used for assessment of the model as proposed the following figure 6.8.

Figure 6.8 Summary of the Higher-order Construct (both formative and reflective)



Source: Author compiled Generated by SmartPLS

Noted: (L= Latent Variable Score)

6.4.2 Assessing Structural Model

As discussed in the chapter-3, this part of the study evaluates the statistical significance of the path loading, path coefficient and corresponding *t*-values among the constructs (Barclay et al., 1995; Hair et al., 2011). Additionally, it also examined the explanatory power of the model by estimating the percentage of variance explained or R-square (R^2) values of the endogenous constructs (Hair et al., 2011). It was noted that in the present study used non-parametric approaches, like bootstrapping method in partial least square (PLS) - based SEM for testing the relationship between constructs that were recommended by Santosa et al. (2005) and Gefen et al. (2000). It was noted that bootstrapping method is a more advanced method than the jackknife method (Chin 1998). To conduct this assessment, the amount of variance explained and the statistical significance has evaluated based on the three types of information; such as (i) path

coefficient (β) and statistical significance of t-value (ii) amount of variance explained (R^2). This information were discussed in the following sub- sections.

6.4.2.1 Path Coefficient (β) and t-value

According to empirical research studies like Ringle (2012) & Hair et al. (2011) path coefficients and the corresponding t-value were used to evaluate the relationships among the constructs the same as hypothesized of this research. Positive path coefficient (β) represented the positive correlation between constructs and negative path coefficient (β) demonstrated the negative relationship also. In addition, t-values substantiate the significance of the relationship between the constructs. That has been demonstrated by the Table 6.26

Table 6.26 Path Coefficient (β) and t-value

Hypothesis	Links	Standardized Path Coefficient	Standard Error (STERR)	T-value	Outcome
H1	AMCR -> SUP (+)	0.584	0.0625	9.3433***	Supported
H2	AMCR -> SUG (+)	0.587	0.065	9.062***	Supported
H3	SUG -> SUP (+)	0.575	0.0668	8.6074***	Supported

Significant * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$ and critical values are 1.645 at $p=0.05$; 1.96 at $p=0.025$; and 2.32 at $p=0.01$.

Source: Author compiled from output Generated by SmartPLS

6.4.2.2 Coefficient of Determination (R^2)

In the second evaluation, the amount of variance explained (R^2) was evaluated for the measurement of each predicted variables to assess the explanatory power of the model. According to earlier studies, like Ringle et al. (2012 & Hair et al. (2011, 2013) the R^2 value examined the capability of the model in enlightening and predicting the endogenous latent variables. The Table 6.27 demonstrated the coefficient of determination (R^2) of the endogenous constructs in this model.

Table 6.27 Coefficient of Determination (R^2)

Edogenous Constructs	Variance explained (R^2)
Sustainable Performance (SUP)	0.341
Sustainability Governance (SUG)	0.345

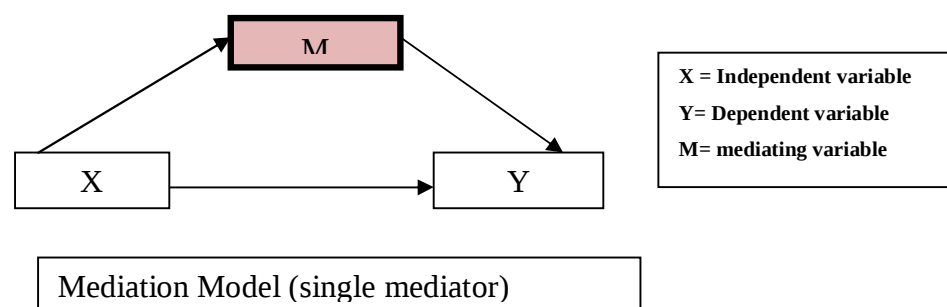
Source: Author compiled from output Generated by SmartPLS

The aforesaid Table 6.27 shown that all values of the R^2 (R- square) are greater than 0.25, which substantiated the weak power predicted variable to explain the model (Hair et al., 2011). But, according to Santosa et al. (2005) and others' studies the acceptable value of R^2 even that will be lower than that. According to Falk & Miller (1992) R^2 values satisfied the requirement for 0.10 cut-off value. Meanwhile, the R^2 values of the present study have satisfied the requirement of cut-off value as per proposed by (Hair et al., 2011; Falk & Miller, 1992) also.

6.4.3 Mediation Analysis

The term statistical mediation refers to a causal link, which is assumed that the effect of one or more independent variables is transmitted to one or more dependent variables through third variables. In the simplest case, the term mediation is used to indicate that the effect of an independent variable (X) is transmitted to a dependent variable (Y) through a third mediator variable (M). Therefore, statistical mediation refers to a causal sequence such as $X \rightarrow M \rightarrow Y$ (MacKinnon, Fairchild, & Fritz, 2007). Mediation is the frequent interest of social science researchers now and popular in the consumer behavior research also. Mediation, a theoretical basis posits that an intervening variable is an indicative measure of the process through which an independent variable is thought to impact a dependent variable (Iacobucci, Saldanha, & Deng 2007). According to Baron & Kenny (1986) mediation is present when at least one intervening variable standing between the predictor and criterion variables that affect the relationship between the two variables. Other studies also justify the mediation or the mediator effect in the existence of the minimum one variable between the two variables makes an intervention on the relationship between other two variables.

Figure 6.9 Mediation Model Requirement



Source: Author compiled from Baron & Kenny (1986)

The theoretical background of this concept was justified through the mediating model in the aforesaid shown above by figure 6.9. To identify the mediating effect on any particular model, many research scholars have discussed the features and steps of measuring the mediated relationship between the independent and dependent variables.

According to Baron & Kenny (1986) and Jude & Kenny (1981) followings were featured and steps as stated below:

Phase- 1: *The predictor variable (X) should have a significant relationship with the outcome variable (Y).*

Phase -2: *The predictor variable (X) should have a significant relationship with mediating variable (M)*

Phase -3: *The mediating variable (M) must have a significant relationship with the outcome variable (Y)*

Phase- 4: *the control of the mediating variable, the relationship between the predictor variable and criterion variable is not significant if there is a full mediation. On the other hand, if the relationship is still significant, a partial mediation exists between the two variables.*

The inferential technique is the product of coefficients approach, most well known as the Sobel test by the reference of Sobel (1982, 1986) was used for measuring the mediation effect. This test requires an estimate of the standard error of ab (Preacher & Hayes, 2004) for three estimators of the standard error. The ratio of ab to its standard error is used as a test statistic for testing the null hypothesis that the “true” indirect effect is zero, with the p -value derived from the standard normal distribution. Hypothesis H4 was developed to measure the role of the mediation. Table 6.28 and figure 6.10 showed the mediated relationship in the model.

The following Table 6.28 and figure 6.10 analyzed the mediation effect in the model. According to the recommendations of the Baron & Kenny (1986) the principles for mediation analysis were examined as follows: Firstly, the relationship between the predictor and the mediator.

Table 6.28 Result of Mediation Analysis

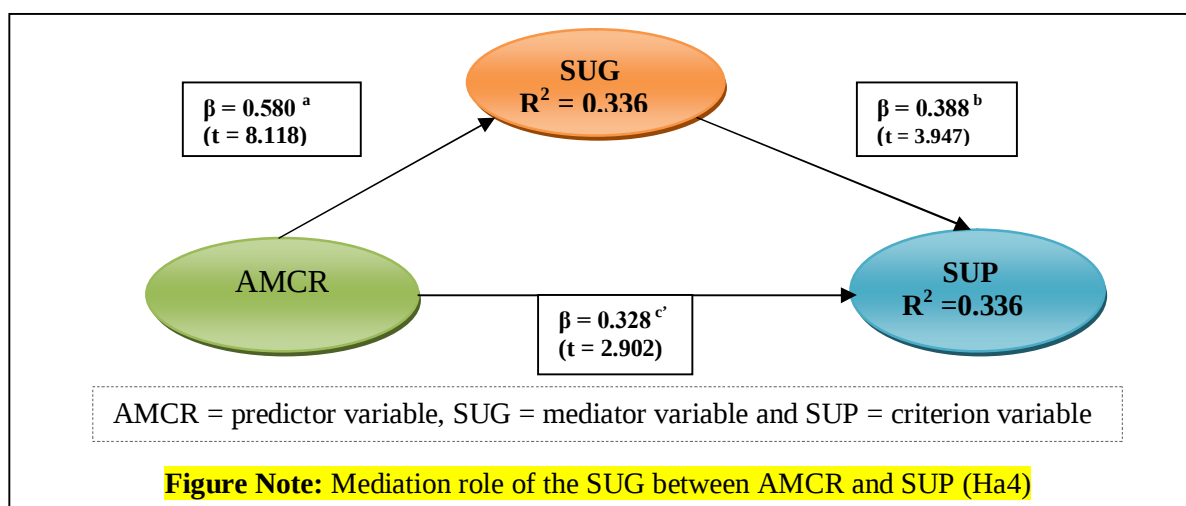
Hypothesis and Proposition	Structural Model	Path Coefficients				Standard Error	Mediation Effect
		Direct effect	Indirect effect**	Total effect***	VAF*		
Ha4 (SUG mediated the relationship between AMCR and SUP)	AMCR – SUP ^c (without mediation)	$\beta = 0.584$ $t = 9.544^{***}$	-	-	-	-	Partial Mediation
	AMCR – SUG ^a	$\beta = 0.580$ $t = 8.118^{***}$	-	-	-	0.0721	
	SUG - SUP ^b	$\beta = 0.388$ $t = 3.947^{***}$				0.0983	
	AMCR – SUP ^{c'} (with mediation)	$\beta = 0.328$ $t = 2.902^{***}$	$\beta = 0.225$ $Z = 3.543^{***}$	$\beta = 0.553$	0.686	0.1129	

[*VAF= Variance accounted for = Indirect effect / Direct effect, ** Indirect effect = ab, *** Total effect = direct effect (c) + indirect effect (ab), **** Z value calculated by SOBEL TEST] (Baron & Kenny). *Significant* * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$

Source: Author compiled from output Generated by SmartPLS

Secondly, the relationship between the mediator and the criterion variables and finally, the link between the predictor and the criterion variable in the absence of the mediator's that influence was investigated.

Figure 6.10 Mediation Effect Analyse



Source: Author compiled from output Generated by SmartPLS

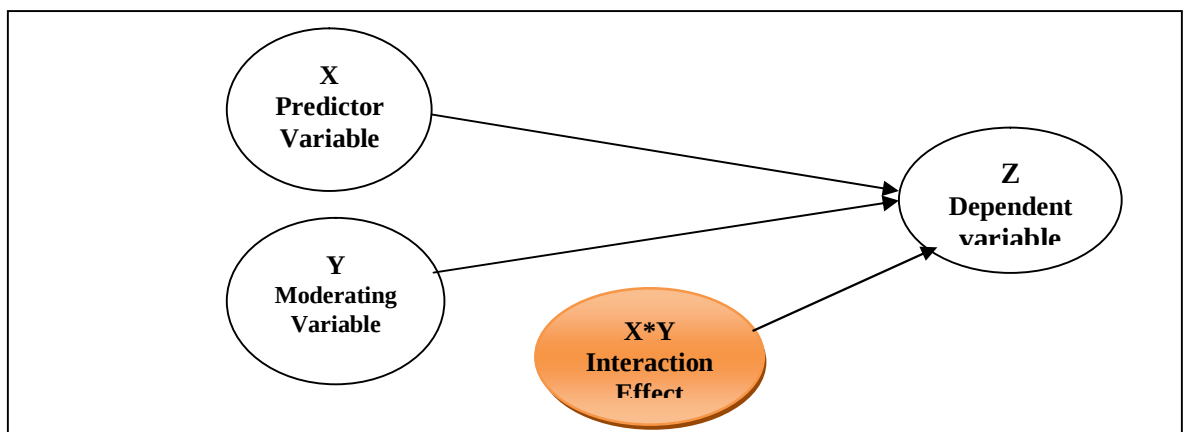
SUG as mediator between AMCR and SUP

The Table 6.28 and Figure 6.10 demonstrated that the relationship between the predictor variable (AMCR) and the mediator variable (SUG) as well as the relationship between the mediator variable (SUG) and the criterion variable (SUP) are significant. It also revealed that the link between the predictor variable (AMCR) and the criterion variable (SUP) without mediation effect is also significant. According to a principle of Baron & Kenny (1986) indirect effect between AMCR and SUP link is significant. Furthermore, the Sobel test result (Sobel, 1982) is satisfied (Z value > 1.65 at $p < 0.05$). Hence, there is statistical evidence to partially accept the hypothesis (Ha4). Thus, this study explored that the mediator variable (SUG) has partial mediation between the predictor variable (AMCR) and the criterion variable (SUP).

6.4.4 Moderation Analysis

Moreover, Baron & Kenny (1986) demonstrated that mediator variable, which is "accountable for the relation between the predictor and the criterion" p. 1176). This study also highlighted moderator as "a qualitative or quantitative variable that influences the trend and/or strength of the relation between an independent and dependent or criterion variable. Description of the moderating variable was discussed in the earlier has demonstrated by following figure 6.11 as follows.

Figure 6.11 Moderator Model and Interactive Model by PLS based SEM



Source: Author compiled from Baron & Kenny (1986)

For measuring the moderating effect on any particular relationship, earlier studies suggested approaches among the commonly used approaches to moderation

recommended by Baron & Kenny (1986). According to that approach the measurement of X to Y at different levels of M.

- i. **Step 1:** The X variable is presumed to cause Y.
- ii. **Step 2:** Center the IV(s) and the moderator variable. Subtract the mean from all values so the mean is zero.
- iii. **Step 3:** Multiply the centered IV by the centered moderator to create an interaction term.
- iv. **Step 4:** Does the moderator variable alter the strength of the causal relationship?
- v. **Step 5:** Complete moderation occurs when the causal effect of X on Y goes to zero with the addition of the moderator.

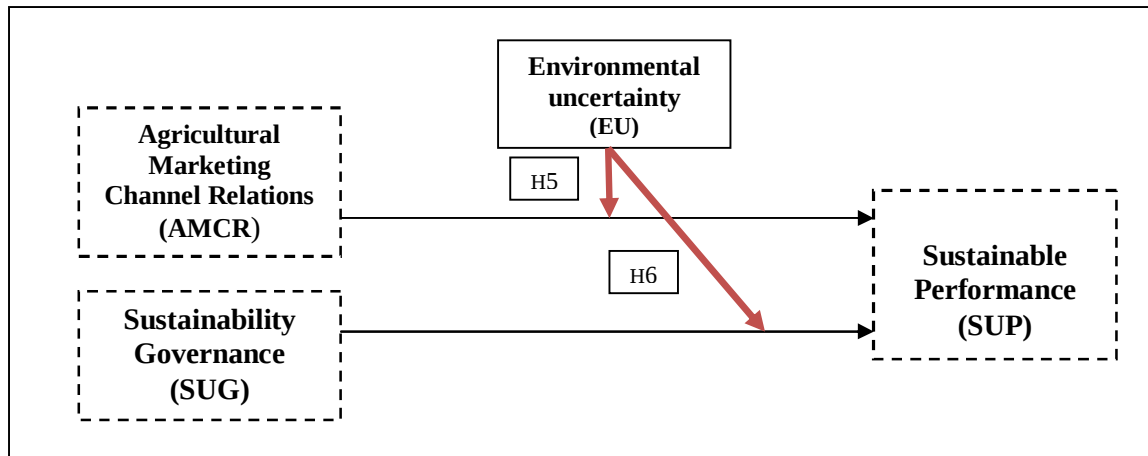
In the section of the analysis, the study focused on the examination of the moderating effect of environmental uncertainty (EU) among the relationship between AMCR to SUP and SUG to SUP. As discussed in earlier studies, environmental uncertainty (EU) influence the performance of the regular activities, like sustainable performance (e.g. Tsai & Huang, 2008; Kwaadsteniet et al., 2007; DeSarbo et al., 2005; Badri et al., 2000; Patel, 2011; Verdu et al., 2012; Wang et al., 2011; Chen & Chou, 2009; Bstieler, 2005; Jusoh, 2010; Wang et al., 2011; Swamidass, 1987).

By the justification of that argument represented by the earlier studies, the hypotheses Ha5 and Ha6 were developed to measure the effect of the moderating variable on the sustainable performance (SUP). Those hypotheses were shown in figure 6.12 that illustrates the hypothesis model. The procedures of the measurement of the higher order constructs were discussed in the earlier parallel sessions, like Tables 6.20, 6.21, 6.23 and 6.25 were represented the measurement model of the independent variables, moderating variable and dependent variable. Those tables have highly substantiated the acceptability of the constructs in reflective and formative at a higher order level for further running the model for assessment of the structural model particularly the assessment of the moderated effects.

An assessment model was carried out on the structural model to appraise the moderating effect of environmental uncertainty (EU) in the relationship between AMCR and SUG as well as the relationship between SUG and SUP. In PLS (partial

least squares), the effect of a moderating variable cannot be measured directly. Hence, the product indicator method was employed under the support of smartPLS2 (Statistical Data Analysis Software for SEM).

Figure 6.12 Theoretical Models for Moderating Variable



Source: Author compiled from literature and field study (2017)

The moderating effect was tested by multiplying the items of predictor constructs and moderating constructs. The figure 6.11 has justified the implementation of the conceptual interactive model in PLS. As said the interactive effect was measured through smartPLS2 (Statistical Data Analysis Software for SEM) for running the model in three steps of tasks were performed: firstly, selected the predictor variable, secondly selected the moderating variable and finally selected the standardizing indicators before multiplication for minimizing the conceptual error to estimate the underlying interaction construct as the recommendations of Chin, Macolin & Newsted (2003). The outcome of the interaction effect model has examined the result found as marks to the standard.

Based on this multiplication mode different structural models were developed to show the outcome of this process, as shown in the Table 6.29 is the “main effect model” that shows the coefficient and the t-value without the moderating variable environmental uncertainty (EU), while the other models (model 2 to model 3) demonstrate the interaction effect of environmental uncertainty (EU) in the sustainable performance (SUP). The R^2 of the main model (model 1) was compared to the R^2 of the interaction model (model 2 to model 3). An increase of R^2 indicates the significant moderating effect of the EU (Chin et al., 1996, 2003). Following this, the overall effect size (f^2) is

calculated to assess the strength of the moderating effect. The following formula is used to calculate as follows:

$$f^2 = \frac{[R^2 (\text{interaction model}) - R^2 (\text{main effect model})]}{1 - R^2 (\text{main effect model})}$$

According to Cohen (1998) the effect size of f^2 can be interpreted as small ($f^2 = 0.02$), moderate ($f^2 = 0.15$) and large ($f^2 = 0.35$). However, it needs to be emphasized that a small (f^2) does not necessarily imply an unimportant effect (Cohen, Pant & Sharp 1998).

Table 6.29 Structural Analysis Result Moderating Effect

Hypothesis (Ha)	Linkage	Model -1		Model -2		Model -3	
		β	t-value	β	t-value	β	t-value
Ha1	AMCR- SUP	0.328	3.112** *	0.276	2.521**	0.282	2.556*
Ha2	AMCR- SUG	0.580	7.959** *	0.580	8.439***	0.580	8.060***
Ha3	SUG-SUP	0.388	3.945** *	0.306	2.861***	0.311	2.739**
	EU -SUP			-0.228	1.440	-0.231	1.651
Ha5	EU*AMCR-SUP			-0.170	0.685		
Ha6	EU*SUG-SUP					-0.151	0.671
	R ² (SUP)	0.405		0.471		0.468	
	f ² (Effect size)			0.1109		0.1059	

Significant * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$ and critical values are 1.645 at $p=0.05$; 1.96 at $p=0.025$; and 2.32 at $p=0.01$.

Source: Author compiled from output Generated by SmartPLS

Table 6.29 demonstrated the model 1 (the main model) that the R² of agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) is 0.405. In model 2, the structural model proposed the moderating effect of environmental uncertainty (EU) on which the link between AMCR and SUP was tested. Based on the

finding, the moderating effect of environmental uncertainty (EU) was found to be insignificant ($\beta = -0.170$; $t = 0.685$, $p > 0.05$). The R^2 of SUP (sustainable performance) in this model had been increased to 0.471 compared to the main model. This finding did not support Ha5. With the effect size, the table shows that f^2 is 0.11, which represented that moderator variable has a small effect on the dependent variable. In addition, in model 3, the effect of environmental uncertainty (EU) on the link between sustainability governance (SUG) and sustainable performance (SUP) was tested. The R^2 of SUP (sustainable performance) in this model had increased to 0.468 compared to the main model. It was found that no significant effect was determined ($\beta = -0.151$; $t = 0.671$, $p > 0.05$). Thus, Ha6 did not support. With the effect size, the table shows that f^2 is 0.11, which represented that moderator variable has a small effect on the dependent variable a small effect.

These findings of the analysis revealed that the interaction effect of environmental uncertainty (EU) was analysed in the full model. The scores of f^2 were addressed. As shown in the Table 6.29 in the model-2 effect size f^2 of environmental uncertainty (EU) is 0.11 or (0.1109) and in the model-3 effect size f^2 of environmental uncertainty (EU) is 0.11 or (0.1059). The result of the effect size demonstrated the environmental uncertainty (EU) moderated the link relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) as well as link relationship between sustainability governance (SUG) and sustainable performance (SUP) in small size. It has justified that the moderation effect such as an interaction effect importantly moderated performance of agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) on the sustainable performance (SUP) according to the recommendation of Cohen, Pant & Sharp (1998). But, the inferential analysis supported to recommend that the results of moderating effects were not significant statistically. In summary, the Table 6.30 is presented to show the evaluation of the hypotheses based on this part of the analysis.

Table 6.30 Evaluation of the Research Hypotheses for the Moderating Construct

Hypotheses	Links	Standardized Path Coefficient	t-value	Outcome
Ha5	EU*AMCR -> SUP (-)	-0.170	0.685	Not supported
Ha6	EU*SUG -> SUP (-)	-0.151	0.671	Not supported

Significant * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$ and critical values are 1.645 at $p=0.05$; 1.96 at $p=0.025$; and 2.32 at $p=0.01$.

Source: Author compiled from output Generated by SmartPLS

6.4.5 Goodness of Fit (GoF)

The goodness of fit (GoF) is a measurement tool used for evaluating the overall fitness of the research model, which has attempted to test and prove. There has empirical research evidence, like Henseler and Sarsted (2013); Peng and Lai (2012; Wetzels et al. (2009); Tenenhaus et al. (2005) and Tanaka (1987) regarding the calculation and uses of the goodness of fit (GoF) in the research for forecasting the power and performance of the measurement structural complex model.

The assessment of the goodness of fit (GoF) index from the reflective indicator is highly used and suitable, but it is also applying for assessment from the formative indicator according to the reference of Chin (2010) and Akter, D'Ambra, and Ray (2011). According to Wetzels et al. (2009) and Tenenhaus et al. (2005) goodness of fit (GoF) index calculated by the geometric mean of the average communality and R-square (R^2) variance explained. Where, in the PLS algorithm, output communality equal average variance expected (AVE). Hence, the goodness of fit (GoF) calculated by the following formula.

$$\text{Goodness of Fit (GoF)} = \sqrt{\text{AVE} \times R^2}$$

(Where: AVE = Geometric Mean of Average variance extracted (AVE) $\sqrt{x_1, x_2 \dots x_n}$ and R^2 = Geometric Mean of R-square (R^2) $\sqrt{x_1, x_2 \dots x_n}$.)

The present study predicts the power of the proposed research model by the using the goodness of fit (GoF) index. According to the earlier studies, like Wetzels et al. (2009) goodness of fit (GoF) calculated by the geometric mean of the average communality or

AVE) and R-square (R^2) variance explained the value of endogenous constructs for PLS path modeling. The Table 6.31 shown the value of average variance expected (AVE) and R-square (R^2) variance explained.

Table 6.31 AVE and R-square (R^2) values of Endogenous Construct

Endogenous Constructs	AVE	R-square (R^2)
Sustainability of Governance (SUG)	0.5021	0.3450
Sustainable Performance (SUP)	0.6481	0.3410

Source: Author compiled from output

The Geometric Mean of Average Variance Extracted (AVE) = $\sqrt[3]{0.5021 \times 0.6481}$
 $= 0.57045$

The Geometric Mean of R- Square (R^2) = $\sqrt[3]{0.3450 \times 0.3410} = 0.34299$

Hence, the value of Goodness of Fit (GoF) = $\sqrt{0.57045 \times 0.34299} = 0.44233$

The GoF value of this study was 0.44233, this GoF value is larger than the value of the all set measure recommended by Wetzels et al. (2009). According to Wetzels et al. (2009) GoF value to be 0.1, 0.25 and 0.36 for small, medium and large respectively. In addition, Tenenhaus et al. (2005) specified that GoF should be less than 1 and more than 0. Therefore, this study substantiated that the proposed research model overall fitness is large and power of the model is enough according to the required standard.

6.5 Summary of the Hypothesis and Evaluation

As discussed in the earlier sections, the research hypotheses were developed to examine the link relationship among the constructs in the comprehensive research model in the Figure- 4.2. In general, six (6) hypotheses that demonstrated in Table 5.1 and in the research model in the figure 4.2. In order to investigate the hypotheses statistically, a PLS (partial least squares) analysis was used to evaluate the data that were collected from the field survey.

According to the explained in earlier a summary of the hypotheses were prepared with the consistency of the research objectives. Hence, the Table 6.32 provides the whole results based on quantitative data analysis with selected tools that is logical and valid

for this particular research. Hence, the summary of the research hypothesis has shown for evaluation in the next section.

Table 6.32 Summary of the Hypotheses

Link	H _a	Hypothesis Statement	Outcome
AMCR → SUP	(H _{a1})	Agricultural marketing channel relationship (AMCR) has a positive relationship with sustainable performance (SUP) of the dairy industry in Bangladesh.	Supported
AMCR → SUG	(H _{a2})	Agricultural marketing channel relationship (AMCR) has a positive relationship with sustainability governance (SUG) of the dairy industry in Bangladesh.	Supported
SUG → SUP	(H _{a3})	Sustainability governance (SUG) has a positive relationship with sustainable performance (SUP) of the dairy industry in Bangladesh.	Supported
AMCR → SUG → SUP	(H _{a4})	Sustainability governance (SUG) mediates the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh.	Supported
EU*AMCR → SUP	(H _{a5})	Environmental uncertainty (EU) has negatively moderated the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh.	Not supported
EU*SUG → SUP	(H _{a6})	Environmental uncertainty (EU) has negatively moderated the relationship between sustainability governance (SUG) and sustainable performance (SUP) of the dairy industry in Bangladesh.	Not supported

*[Note: symbol of * demonstrates the interaction effect of the moderating variable]*

Source: Author compiled from output Generated by SmartPLS

6.6 Conclusion

This part of the present research revealed the findings based on the analysis of the research data that were collected from the field survey and analyzed by the PLS-based Structural Equation Modelling (SEM). The analysis was started with a descriptive

analysis of the respondents included 320 respondents who are the managers or owner from Bangladeshi dairy farms. In order to justify the research objectives, the total analysis was segmented into two parts. Firstly, an assessment of the measurement model, that examines the measurement of constructs and evaluation of the second-order constructs according to different measurement factors like (item loading, CR, AVE and AVE square root). Finally, the analysis was focused on the assessment model to examine the relationship between independent variables with dependent variables tested as the research hypotheses. Meanwhile, this part also tested the mediation effect and moderation analysis. Overall, for six hypotheses proposed in the present research based on the comprehensive model. Among them, four hypotheses were supported and remaining two hypotheses did not support the statement of hypothesis model. Hence, in the next chapter, the implication of these outcomes based on the theoretical development and practical significance will be discussed.

Chapter-7: Discussion and Implication

7.1 Introduction

The purpose of this chapter is to discuss the findings in terms of theoretical application, methodological accuracy and practical knowledge. The research findings were discussed consistently with the hypothesized relationships among different constructs in the model and the objectives of the research. Based on the research questions and the research objectives, this study attempted to discovered various valuable findings and test a number of hypotheses, which had not been found earlier in the field of agricultural marketing mainly, in the framework of the dairy industry in Bangladesh. The specific contributions of the present study have the empirical evidence regarding the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) and testing the relationship between (AMCR) and (SUP) along with using inferential statistical tools, namely PLS-based SEM according to recommendations of Ringle et al. (2012) and Chin, (2010). The findings of the study are discussed below through statistical support, and existing theories as well as practices. This chapter has been designed as follows: the following section describes the hypotheses related to the research model. The discussion of the findings has made based on research objectives and hypotheses. Finally, the chapter is concluded through a short summary.

7.2 Findings Based on Hypotheses

7.2.1 Hypothesis-1 (Ha1): Agricultural Marketing Channel Relationship (AMCR) has a Positive Relationship with Sustainable Performance (SUP) of the Dairy industry in Bangladesh.

The present study evaluates the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) that has associated with the research objective-3. The results of the analysis demonstrated the significant statistical substantiation regarding the positive relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). The outcome of the study reveals a connection between AMCR and SUP ($\beta = 0.584$, $t = 9.343^{***}$). Thus, it has proved the theoretical relationship and the importance of the agricultural marketing channel relationship (AMCR) for ensuring sustainable performance (SUP) of the dairy industry in Bangladesh that has found reliable. It also explored by this study that the

AMCR has reflected through underlying dimensions such as, trust, commitment, power, satisfaction, cooperation and communication.

On the other hand, the results of the field study also supported the role of the agricultural marketing channel member relationship (AMCR) to the sustainable performance (SUP) of the dairy industry in Bangladesh. This result quantitative study has also supported by the practices or field study as well. It has observed that the proactive producers (farmers) and other stakeholders communicate with channel members, including buyers as well as suppliers regarding the price, demand, supply and quality for ensuring continuous business transaction with maximum mutual benefits. Besides this, producers, wholesalers and business customers have maintained their commitment and cooperation with each other for the development of their respective business and prompt transaction among the customers. Those collaborative activities among the channel members can be accelerated the sustainable performance (SUP) of the marketing channel members as a whole.

In addition, in the field study it was found that there has no practice of the dimensions of the relationship as a whole as, but they follow only unorganized tools of relations. The producers do not enjoy the maximum benefits, particularly economic benefits for their produces. Therefore, it is crucial for agricultural marketing channel members to build up a long term strong and mutual relationship by the develop trust, commitment, power, satisfaction, cooperation and communication for maximization of sustainable performance (SUP) of the dairy industry in Bangladesh. Hence, it has proved that industry partners would be expected to increase the sustainable performance (SUP), then they should build the long-term and the mutually acceptable relationship among the marketing channel members.

7.2.2 Hypothesis-2 (Ha2): Agricultural Marketing channel relationship (AMCR) has a Positive Relationship with Sustainability Governance (SUG) of the Dairy industry in Bangladesh

The study investigates the connection between agricultural marketing channel relationship (AMCR) and sustainability governance (SUG), which allied with the research objective -4. The analysis reveals that there is a substantial statistical validation to sustain a positive relationship between agricultural marketing channel

relationship (AMCR) and sustainability governance (SUG). The findings of the quantitative study justified the relationship between AMCR and SUP i.e. ($\beta=0.587$, $t=9.062^{***}$). Hence, this has verified the hypothetical relationship that evaluates the significance of the agricultural marketing channel relationship (AMCR) for sustainability governance (SUG), which is essential for the dairy industry in Bangladesh. Also, it has confirmed that emergent relationship among the marketing channel members will amplify the sustainability governance (SUG) of the dairy industry in Bangladesh which is consistent with earlier studies (shown in section 2.2) and others. Therefore, the result of the study highlighted that implication of the marketing channel relationship (AMCR) for sustainability governance (SUG) of the dairy industry in Bangladesh. Meanwhile, this study also identified that sustainability Governance (SUG) has been reflected by the diverse group of dimensions, like business sustainability, integration, governance power, and financial control.

The field study also supports that agricultural marketing channel relationship (AMCR) is an important factor for developing sustainability governance (SUG). The study addressed that when customers will be faced with poor governance structure in the country or desire to develop a better governance structure, then they should concentrate on the business sustainability, financial control, integration and governance power that were proved as a representative dimension of the sustainability governance particularly in the dairy industry in Bangladesh. It is observed that marketing channel members are now aware regarding the business sustainability and financial motivations and penalties for unsustainable operations. While, the government agencies are now more collaborative and integrated into the development of the policies and regulative guidelines for a better governance structure that supported to achieve the sustainable goals. It has evidenced that communication; cooperation, commitment, trust, power, and satisfaction were maintained by the customers, particularly marketing channel members help in understanding the governance mechanism and sharing members' opinions with development partners for better governance that ensure maximum controlling for sustainable performance. Therefore, it has proved that there has a positive relation between the agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) that ensure the sustainable performance of the dairy industry in Bangladesh which has statistically proved by the present study.

7.2.3 Hypothesis-3 (Ha3): Sustainability Governance (SUG) has a Positive Relationship with Sustainable Performance (SUP) of the Dairy industry in Bangladesh

The findings of this study accepted the hypothesis regarding a positive relationship between sustainability governance (SUG) and sustainable performance (SUP) of the dairy industry in Bangladesh. It has found the statistical evidence in favor of the hypothesized relationship between the constructs. The study also reveals that the coefficient relationship between the constructs SUG and SUP is significant ($\beta=0.575$, $t=8.6074^{***}$). From these quantitative findings, it has substantiated that sustainability governance (SUG) is a positive enabler of sustainable performance (SUP) of the dairy industry in Bangladesh. Earlier studies confirmed the hypothesized relationship between SUG and SUP and highlighted that maximum governance mechanism that reduces the uncertainty, risk and unpredictability in the expected operations consequently maximize the ESE performance that shown in section 2.2. Previous empirical studies demonstrated that internal and external governance structures and stakeholder relationship with a mutually accepted governance mechanism may ensure the better performances in the business and non- business organizations. Therefore, the results of the present study rationalize the significance of the sustainability governance (SUP) for sustainable performance of the dairy industry in Bangladesh. It also exposes the customers for establishing the sustainability governance (SUG) dimensions in the industry that might support the fair and reasonable operations and positively influence the sustainable performance (SUP) of the dairy industry in Bangladesh.

The field study also supported the findings of the quantitative study that is hypothetically accepted, like sustainability governance (SUG) is positively related to sustainable performance (SUP). The participants focused that the best governance mechanism in the dairy industry may reduce the financial and non-financial disruption in the business operations. For instance, a farmer may get a fair price for their produce and ensure the good market structure where farmers may enjoy the bargaining power like manufacturing product producers also supported in choosing better customers against the bad customer. On the other hand, a governance structure supported the customers and people to enjoy the physically and environmentally accepted products that create pressure to the farmers to follow the recommended rules and regulations for quality and safe product. These outcomes of the sustainability governance make the

certain behavior with the channel members and customers for enjoying the opportunities like bearable, equitable and viable of the dairy industry in Bangladesh.

In addition, it also observed that, in the sample areas, still farmers have not economically profitable. The study found that among the dimensions of the sustainable performance, namely economic performance was found negatively related such as ($\beta = -0.631$, $t = 10.454^{***}$). This result proved that at present, the dairy industry economic performance is not a positive relationship or not in economically positive situations. In the field study, it has found that respondents were claiming the whole of the dairy industry suffered from the governance crisis where customers have been acting according to their choices and the present regulative authorities are unable to control the existing situations due to bureaucratic management structures and non-participatory governance mechanism. Moreover, marketing channel members' particularly commercial buyers and suppliers are dominating the total market and practicing autocratic behavior regarding the price, demand and others. Therefore, farmers are selling products at customers' price (not fair price) and losing financial benefits. On the other side, suppliers are continuously changing the price of supply products as a results increase the cost of goods sold i.e. the production cost of the milk price per liter increase.

For overcoming this situation, marketing channel members and affected parties have been looking forward to the respective authorities for controlling these situations and implementation of a governance mechanism, where every stakeholder will participate and share their respective circumstances of the industry. Hence, they can protect the profit, people and planet at the same time it is intended to ensure sustainable development. This field study evidenced that for sustainable performance of the dairy industry in Bangladesh should develop a sustainability governance (SUG) mechanism. Meanwhile, sample respondents of the qualitative study supported the reflective dimensions of the sustainability governance like business sustainability, integration, financial control and governance power that were proved as powerful measurement constructs by the quantitative study. Hence, finally, it has proved that sustainability governance (SUG) has a positive relationship with sustainable performance (SUP) of the dairy industry in Bangladesh.

7.2.4 Hypothesis-4 (Ha4): Sustainability Governance (SUG) Mediates the Relationship between Agricultural Marketing channel relationship (AMCR) and Sustainable Performance (SUP) of the Dairy industry in Bangladesh.

The findings of the study examined and confirmed the mediating role of SUG between AMCR-SUG and SUG- SUP. The findings revealed that without any mediation, the direct effect between AMCR and SUP is significant ($\beta = 0.584$, $t = 9.544^{***}$). It was also stated that the indirect effect of AMCR on SUP is significant ($z = 3.543^{***}$) according to 'Sobel Test' and it explained about 68.6% ($VAF = 0.686$) of the total effect between AMCR and SUP (see Table 6.28). In addition, it was observed that the direct effect between AMCR and SUP is significant ($t = 2.902^{***}$). After justifications of this value, the mediation effect is considered to exist. Therefore, a partial mediating role of SUG was found between the AMCR - SUG and SUG- SUP link, according to Baron & Kenney (1986). Hence, the study proved that SUG mediates the relationship between AMCR and SUP of the dairy industry in Bangladesh.

In the field study, it has been found that the participatory governance like sustainability governance can influence the sustainable performance more than previous like the sustainable performance of the traditional governance structure. Maximum respondents mentioned that, if there is established a format of cooperative governance structure like SUG then farmers can reduce all types of challenges and can reap maximum benefits from this industry. Among them, all of the respondents emphasized on establishing a cooperative governance structure like sustainability governance (SUG) and developed relationship with each other in the marketing channel for ensuring the sustainable performance of the dairy industry. Otherwise, they may fail to expose their common problems and benefits to the rest of the stakeholders in the governance structure. This statement of the respondents substantiates the mediation effect of the governance like SUG for sustainable performance (SUP) from the field study side. Therefore, it can be concluded that sustainability governance (SUG) has a mediating role between AMCR and SUP. But, in this study it has proved that partially mediation has between AMCR and SUP and hypothesis (H_{a4}) is accepted partially.

7.2.5 Moderation Effect

Different theories and previous studies recommended that an environmental uncertainty (EU) will transform the expected performances of organizations in any particular industry. Based on this view, the moderating effect of environmental uncertainty (EU) on the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) by H_{a5} as well as the relationship between sustainability governance (SUG) and sustainable performance (SUP) by H_{a6} are predicted. To test these hypotheses, H_{a5} and H_{a6} were proposed to examine the interaction effect of environmental uncertainty (EU) on the relationship AMCR and SUP as well as on the relationship between SUG and SUP.

7.2.6 Hypothesis-5 (H_{a5}): Environmental Uncertainty (EU) has negatively moderated the Relationship between Agricultural Marketing channel relationship (AMCR) and Sustainable performance (SUP) of the Dairy industry in Bangladesh

In details of the hypotheses, the moderating effect of environmental uncertainty on the relationship between AMCR and SUP was explained which was proposed earlier. The findings of the study do not support the hypothesis; environmental uncertainty (EU) has negatively moderated the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) of the dairy industry in Bangladesh. Therefore, proposed hypothesis is rejected.

According to the structural equation model, an interesting finding was discovered. It has been found that there is no statistical evidence regarding sustaining the predicted hypothesis (H_{a5}) i.e. (environmental uncertainty has a negative moderating effect on the relationship between the AMCR and SUP). The study unearthed that environmental uncertainty (EU) has moderating poor effect level, but this effect size was not significant ($f^2 = 0.11$, $t=0.685$, $p> 0.05$) according to Baron & Kenney (1986).

The outcome of the study highly contradicts the recommendations of the many empirical studies that found that ‘environmental uncertainty’ is an uncertain, complex and unpredictable situations that were not exceedingly forecasted by the managers, at any moment and circumstance that shaped innate modification on the projected performances of the individual and organization as detailed in section 2.6 (chapter-2) and 5.2.5 (chapter-5). In addition, the findings of the study have extremely supported

and enhanced the findings of the other earlier studies, such as (Wei et al., 2012). Where Wei et al. (2012) suggested that easing the uncertain conditions and farms should develop a stable relationship with their partners through improved communication and information sharing. Meanwhile, the suggestions of the numerous earlier studies explored that the expected relationship continuity is reinforced through mutual understating of their obligations (Ganesan, 1994); reducing asymmetric information and opportunism in the exchange relationship (Lado et al., 2008); business relationship helps to reduce environmental uncertainty (Dyer and Singh, 1998) where those recommendations again completely support the finding of the present study and reference of the previous study such as (Wei et al., 2012).

Hence, in the context of the Bangladeshi dairy industry, it has verified the reasons regarding the findings of the hypothesis H_{a5}, why the theoretical evidence does not support the proposed hypothesis in the sample industry and country. It has observed that as a vulnerable sector (chapter-2) all stakeholders of the dairy industry developed resilience and adaptation capabilities in the business and marketing channel. Many earlier studies like Christopher & Peck (2004); Sheffi & Rice (2005) and Jüttner & Maklan (2011) recommended that resilience affects vulnerability negatively. Therefore, environmental uncertainty has not capable to negatively moderate the sustainable performance of the dairy industry. The study also has observed that agricultural marketing channel relationship (AMCR) has been generated a competitive advantage among the farms and industry that can reduce the uncertainties and complexities of the expected performances. So, after the establishment of the proper relationship among the marketing channel members the moderating construct environmental uncertainty has been incapable of reducing the sustainable performance (SUP) in the dairy industry in Bangladesh after having the empirical evidence.

Hence, it has recommended that farmers and customers should be increased the resilience and adaptive capabilities for the maximizing the sustainable performance without the influence of the environmental uncertainty. It also recommended to the channel members should be aware of the new form of complexities and challenges regarding the environmental issues. Furthermore, it has been suggested that stakeholders should develop structure for share the experiences with each other and expand awareness regarding the environmental issues, formulation and implementation

of a strategy that will reduce the risk and facilitate the sustainable performance (SUP) of the dairy industry in Bangladesh.

7.2.7 Hypothesis-6 (Ha6): Environmental Uncertainty (EU) has Negatively Moderated the Relationship between Sustainability Governance (SUG) and Sustainable Performance (SUP) of the Dairy industry in Bangladesh.

The particular hypothesis (H_{a6}), has discussed the moderating effect of the environmental uncertainty (EU) on the relationship between SUG and SUP of the dairy industry in Bangladesh which has proposed earlier. The findings of the study were statistically evaluated and did not find any inferential evidence to support the proposed hypothesis (H_{a6}) that environmental uncertainty (EU) has negatively moderated the relationship between sustainability governance (SUG) and sustainable performance (SUP) of the dairy industry in Bangladesh. Hence, proposed hypothesis is rejected.

According to the PLS-based structural equation model (SEM), particularly assessment model, the study explored the knowledge that has contributed to the existing wisdom. It was found that there has no statistical evidence to support the proposed hypothesis, i.e. environmental uncertainty (EU) has negatively moderated the relationship between sustainability governance (SUG) and sustainable performance (SUP) of the dairy industry in Bangladesh. The study discovered that expected hypothesis was not supported. In addition, it was explored that environmental uncertainty (EU) has poor levels moderating effect and that was not statistically significant ($f^2 = 0.11$, $t=0.671$, $p > 0.05$) with reference to Baron and Kenney (1986).

Thus, the findings of the present study disagreed with many empirical studies e.g. Chowdhury et al. (2012); Sellnow & Brand (2001); Ageron et al. (2012); Carter & Easton (2011) and Gupta (1995) those were particularly mentioned in the discussion of the earlier chapter-2 and chapter-5 (5.2.5). Those empirical studies have positively supported the moderating effect of environmental uncertainty on the expected performances and others performances of organizations were regularly disordered by the many shapes of complexities and pressures from inside and outside of the industry.

In addition, present research positively justified by the earlier studies, such as David & Han (2004) and Rindfleischa & Heide (1997). Where those studies stated that the

‘impact of the environmental uncertainty (EU) on the governance decisions is ambiguous’.

Meanwhile, the findings of the study supported the earlier wisdom regarding governance outcomes and performances e.g., Smith et al. (2005); Bhagat & Bolton (2008); Gompers et al. (2003); Core et al. (2006) and Lehrer et al. (1999) those studies recommended that for enhancing the governance to make certain the regular performance of an organization. In addition, the findings of the study recommended that sustainability governance (SUG) is a participatory governance mechanism where every level of customers contribute and share for the formulation and implementations of the governance strategies. Thus, there has no opportunity to a particular customer to dominate the total industry and the industry. Thus, when sustainability governance (SUG) is established in the industry, the customers, like marketing channel members will be well informed and controllable with multidimensional adaptation and will enjoy the certainty as well feel confidence within the uncertainty situation. Therefore, it has proved that environmental uncertainty has not negatively moderated the relationship between sustainability governance (SUG) and sustainable performance (SUP) in the dairy industry in Bangladesh.

Therefore, in the context of the Bangladeshi the dairy industry, it has to make a cross check regarding the findings of the hypothesis H₆ for uncovered reasons, why these findings do not support the proposed hypothesis in the sample industry and country. It has observed that as a vulnerable situation of the industry (chapter-2) all stakeholders have been developed resilience and adaptation capabilities against the vulnerabilities and uncertainties that forced by the multi-level environmental issues. These competitive advantages might be the additional supportive force that promoted the sustainable performance (SUP) of the dairy industry as well as proficient to fight aligned with the environmental uncertainty. The field study, it observed dairy farmers adopted the mutual resilient development programs, like co-operative society, producer exchange, producer market which reflected sustainability governance (SUG) to regulate the unexpected occurrences, vulnerabilities and uncertainties and support to overcome unpleasant circumstances in the dairy industry through found farmers have been build up collective association for reducing the uncertainty and enhance the mutual goals of

the dairy industry in Bangladesh. Hence, this result of the qualitative and quantitative study reflected the evidence regarding the hypothesis results

Hence, through the extensive evaluation of the findings, it concluded that sustainability governance (SUG) has positive relationship with the sustainable performance (SUP) and business resilience and adaptation capabilities boost up the power of the sustainability governance (SUG) to reduce the negative effect of the environmental uncertainty (EU) on the sustainable performance (SUP). In addition, the study suggested that for sustainable performance (SUP) marketing channel members should develop participatory governance, namely sustainability governance (SUG) which may be capable for reducing the vulnerabilities and complexities arisen from the environmental factors.

7.3 Findings Based on Research Objective

This part of the report focuses on the research objectives. The research objectives, such as (i) to explore and measure the dimensions of the agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) in the context of the dairy industry in Bangladesh (ii) to identify and measure the dimensions of the environmental uncertainty (EU) in the context of the dairy industry in Bangladesh (iii) to examine the association among the agricultural marketing channel relationship (AMCR), sustainability governance (SUG) and sustainable performance (SUP). (iv) to discover the mediating effect of sustainability governance (SUG) on the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). (v) to investigate the moderating effect of environmental uncertainty (EU) on the association between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) as well as the relationship between sustainability governance (SUG) and sustainable performance (SUP). It was mentioned that in the earlier section 7.2 under the subsections 7.2.1, 7.2.2, 7.2.3, 7.2.4 and 7.2.5 discussed the hypothesis relationship in the model were proposed highlighted the research objectives 3, 4 and 5 respectively. Hence, in this section research objective 1 and objective 2 are discussed in details according to research organizations.

7.3.1 Research objective-1: To explore and Measure the Dimension of the Agricultural Marketing channel relationship (AMCR) and Sustainability Governance (SUG)

According to research objective-1, this study focused to explore the multi dimensional measurement construct of the hierarchical construct “agricultural marketing channel relationship (AMCR)” and “sustainability governance (SUG)”. By the rationalization of the findings of the field study and empirical evidence of the hierarchical constructs, AMCR and SUG were prepared as the reflective lower-order and reflective higher-order approach. According to the previous studies, such as Ringle et al. (2012); Wetzels et al. (2009); Becker, Klein, and Wetzels (2012) two-staged approach was used for measuring the higher-order construct as it is effective for developing a flexible but reasonable model.

The study exposed that agricultural marketing channel relationship (AMCR) is a second-order hierarchical construct which is reflected of six first-order constructs, like trust, commitment, satisfaction, power, cooperation and communication. The findings of the quantitative study explored that satisfaction (LSAT) with extreme significance ($\beta = 0.774$, $t = 15.2573$) in comparison to other measurement constructs, which are followed by power (LPOW) $\beta = 0.7645$, $t = 14.2446$ and communication (LCOMU) $\beta = 0.7533$, $t = 12.8269$ respectively (see Table 6.20).

In addition, the study represented that sustainability governance (SUG) is a second-order construct that is reflected by the four first-order constructs, like business sustainability, integration, governance power and financial control. According to the results of the quantitative study business sustainability (LBUS) is highly important ($\beta = 0.8002$, $t = 16.6216$) in weigh up against integration (LINTN) $\beta = 0.7695$, $t = 11.2324$ respectively (see table 6.21) in the following sections, the first order constructs of AMCR and SUG were discussed with statistical confirmation and theoretical insights.

7.3.1.1 Measurement Constructs (Dimensions) of the Agricultural Marketing channel relationship (AMCR)

Trust

The earlier studies explored the contribution of trust as an important measurement construct of relationship for supporting a better performance which was discussed in

chapter-2. An assessment of the link indicates that trust has a significant impact to develop the relationship with the agricultural marketing channel relationship (AMCR). This theoretical justification justified by the statistical value ($\beta=0.6454$, $t=6.9824$) and it's explained 38.2% overall variance (R^2) (see the table 6.17). Hence, it has proved that trust is an important measurement construct of AMCR which is logically and empirically valid. This finding also highlighted that a major portion of the multidimensional construct like agricultural marketing channel relationship (AMCR) reflected by the measurement construct like 'trust'.

Commitment

The empirical studies revealed that the involvement of the commitment as a substantial dimension in connection to developing the relationship as discussed in section 2.2. An assessment of the relationship indicates that commitment has a significant relationship with the agricultural marketing channel relationship (AMCR) that substantiated by the inferential results ($\beta=0.6708$, $t=10.4442$) and it explained 28.7% overall variance (R^2) (see the table 6.17). Hence, it has substantiated that commitment is an essential measurement construct of AMCR, which is logical and empirically valid. This finding also highlighted that a significant portion of the multidimensional constructs in agricultural marketing channel relationship (AMCR) is reflected by the construct like 'commitment'.

Power

The previous studies demonstrated the reflection of the 'power' as an important dimension has been supporting to build the strong relationship with the customers and surroundings in the business and non- business society as discussed in section 2.2. An assessment model link specifies that 'power' has a meaningful relationship with the agricultural marketing channel relationship (AMCR) which has been proved with statistical evaluation ($\beta= 0.7645$, $t = 14.2446$), it has explained 52.8% general variance (R^2) (see the table 6.17). Therefore, this also confirmed that 'power' is a considerable measurement construct of the AMCR, which is empirically and logically valid. This outcome denoted that a remarkable segment of the multidimensional construct in agricultural marketing channel relationship (AMCR) is reflected by the construct like 'power'.

Satisfaction

The earlier studies investigated the role of ‘satisfaction’ as a powerful dimension of the relationship to enrich the relationship with the customers and agents for increasing the performances of the organizations as discussed in section 2.2. An assessment of the relationship indicates that ‘satisfaction’ has important associations with agricultural marketing channel relationship (AMCR) which has been supported by the inferential evidence ($\beta=0.774$, $t= 15.2573$) and it explained 58.4% overall variance (R^2) (see the table 6.17). Hence, it has demonstrated that ‘satisfaction’ is the key measurement construct of AMCR which is logically and empirically valid. This finding also highlighted a noteworthy portion of the multidimensional constructs: agricultural marketing channel relationship (AMCR) is reflected by the construct ‘satisfaction’.

Communication

The earlier studies demonstrated the link of ‘communication’ as an essential dimension in the build up a strong relationship with the customers and surroundings in the business and non- business society that enhanced the performances as discussed in section 2.2. An assessment model of the relationship specifies that ‘communication’ has a significant relationship with the agricultural marketing channel relationship (AMCR) that proved by the statistical evaluations ($\beta= 0.7533$, $t = 12.8269$) and it has explained 49.5% overall variance (R^2) (see the table 6.17). Therefore, this also substantiated that ‘communication’ is a substantial measurement construct of the AMCR, which is empirically and logically valid. This outcome remarks the portions of the multidimensional construct in agricultural marketing channel relationship (AMCR) is reflected by the construct like ‘communication’.

Cooperation

The earlier studies investigated the role of ‘cooperation’ as an influential dimension of the relationship to improve the relationship between the customers and representative for increasing performances of organizations as discussed in section 2.2. An assessment of the relationship highlighted that ‘cooperation’ has magnitude associations with agricultural marketing channel relationship (AMCR) ($\beta=0.7039$, $t= 10.7938$) and it’s explained 41.5% overall variance (R^2) (see the table 6.17). Thus, it has certified that

‘cooperation’ is an important measurement construct of AMCR which is logically and empirically valid. This finding also highlighted a noteworthy portion of the construct in agricultural marketing channel relationship (AMCR) is reflected by the constructs, like ‘cooperation’.

From the above discussion, it can be concluded that the hierarchical construct: agricultural marketing channel relationship (AMCR) has reflected by measurement constructs like trust, commitment, power, satisfaction, communication and cooperation that were explained by being the variance respectively. Hence, incorporating the aforesaid measurement constructs of the AMCR relationship is statistically significant as well as empirically valid with logical consideration. Therefore, those measurement dimensions have been proved to empirical validity for measuring the hierarchical construct AMCR in the future research as has used in the present research.

7.3.1.2 Measurement Constructs (Dimensions) of the Sustainability Governance (SUG)

Business sustainability

The previous studies demonstrated the relationship of ‘business sustainability’ as a significant dimension for representing the hierarchical construct like sustainability governance (SUG) to maximize the outcomes of the business and non- business organizations in the society as discussed in section 2.5. An assessment model of the relationship specifies that ‘business sustainability’ has a significant relationship with the sustainability governance (SUG) this truth proved by the statistical justification i.e. ($\beta = 0.8002$, $t = 16.6216$) and it has explained 48.7% total variance (R^2) (see the table 6.17 and table 6.21). Therefore, this also substantiated that ‘business sustainability’ is a highly considerable dimension of the SUG, which is empirically valid and logical. This finding mentioned the extraordinary portions of the multidimensional construct: sustainability governance (SUG) reflected by the measurement construct ‘business sustainability’.

Integration

The earlier studies confirmed that ‘integration’ as an imperative dimension for assisting sustainability governance (SUG) that exploits the effects of the business and non-

business organizations in the society as argued in section 2.5. An assessment model of the relationship indicates that ‘integration’ has a considerable relationship with the sustainability governance (SUG) that has been demonstrated the quantitative outcomes, like ($\beta = 0.7695$, $t = 11.2324$) and it has explained 55.4 % of the total variance (R^2) (see the table 6.17 and table 6.21). Therefore, this also justified that ‘integration’ is a significant dimension of the SUG, which is empirically valid and logical. This finding mentioned an important portion of the multidimensional construct in sustainability governance (SUG) is reflected by the construct like ‘integration’.

Governance power

The preceding studies demonstrated that ‘governance power’ as an essential dimension for facilitating the sustainability governance (SUG) to maximizes the outcomes of the business and non- business organizations in the society as discussed in section 2.5. An assessment model of the relationship specifies that ‘governance power’ has a considerable relationship with the sustainability governance (SUG) according to the inferential evaluations, like ($\beta = 0.7368$, $t = 8.108$) and it has explained 44.6 % of the overall variance (R^2) (see the table 6.17 and table 6.21). Therefore, this also substantiated the ‘governance power’ is an important dimension of the SUG, which is empirically valid and logical. This finding mentioned the extraordinary portion of the multidimensional construct in sustainability governance (SUG) is reflected by the construct like ‘governance power’.

Financial control

The empirical studies exposed the association of the ‘financial control’ as a crucial dimension in supporting the sustainability governance (SUG) that exploits the effects of the business and non- business organizations in the society as presented in section 2.5. An assessment model of the relationship indicates that ‘financial control’ has a considerable relationship with the sustainability governance (SUG) which justified by the research outcomes, like ($\beta = 0.4007$, $t = 2.5612$) and it has explained 17.2 % of the total variance (R^2) (see the table 6.17 and table 6.21). It is particularly noted that the result of beta ($\beta = 0.4007$) is lower than the 0.50 but it was found significant in the second-order constructs, In addition, it’s first-order constructs it items loading were more than 0.60 and t-values also significant. Under this circumstance, it was supported

that the adaptation by ($\beta = 0.4007$) is reasonable, while, the dimension was not popular in the dairy industry in Bangladesh. Therefore, this is also justified that ‘financial control’ is a significant dimension of the SUG, which is empirically valid and logical. This finding mentioned that the notable portions of the multidimensional construct: sustainability governance (SUG) is reflected by the construct like ‘financial control’.

From the above arguments, it can be concluded that the hierarchical construct: sustainability governance (SUG) had a strong association with its dimensions, like business sustainability, integration, governance power and financial control which were explained by the respective variance respectively. Hence, incorporating the aforesaid dimensions of the SUG relationship with a hierarchical construct like sustainability governance (SUG) is statistically significant as well as empirically valid with logical consideration. Thus, it has empirically support that the measurement dimensions explored by the present study may be used to measure the hierarchical construct sustainability governance (SUG) in the future research as a has been used in the present research.

7.3.2 Research Objective-2: To Explore and Measure the Dimensions of the Environmental Uncertainty (EU)

In connection to the research objective-2, this study has enforced building multidimensional and hierarchical measurement construct “environmental uncertainty”. By the explanation of the findings of the field study, the empirical and the hierarchical construct of environmental uncertainty (EU) were placed as the formative lower-order and formative higher-order approach. According to the empirical studies, such as Ringle et al. (2012); Wetzels et al. (2009) and Becker et al. (2012) a two-stage approach was used in measuring the higher-order construct which is effective for developing a comprehensive and a reasonable model.

The study exposed that environmental uncertainty is a second-order hierarchical construct, which is consisted of six first-order constructs (i.e. demand uncertainty, supply uncertainty, competitor uncertainty, climate uncertainty, government policy uncertainty and political uncertainty) as proposed in the comprehensive research model. The findings of the quantitative study explored that political uncertainty (LPU) is significant with weight (0.400) in comparing to other measurement constructs, which

are followed by competitor uncertainty (LCU) with weight (0.3753) and climate uncertainty with weight (0.2749) respectively (see the table 6.25). In the following sections, the associations between EU and its dimensions have discussed with empirical and theoretical insights.

7.3.2.1 Measurement Constructs (Dimensions) of the Environmental Uncertainty

Demand Uncertainty

The findings of the study the table 6.25 confirmed that the absolute importance of demand uncertainty is 23.05% that is the item weight is 0.2305 and t-value is 0.9046 along with item loading is 0.5550 and t-value is 2.3084 in the higher order- a construct of the EU. In the empirical study, a number of studies were found in favor of the demand uncertainty as discussed in section 2.6. Therefore, the finding of this study is logical according to earlier studies. This study deduced that demand uncertainty is one of the essential components for representation of environmental uncertainty. This study provided strong substantiation regarding the importance of the formative measurement construct like demand uncertainty. It was also revealed that all the items are significant either based on their weight or loading (see the table 6.25) in the hierarchical construct environmental uncertainty (EU) in the formative measurement model, with reference to Hair et al. (2011). In addition, this study explored that the multicollinearity problem does not exist among the measurement construct of demand uncertainty as the VIF values for all items are below 5 (see the table 6.25). Therefore, the measurement of demand uncertainty is valid in terms of formative measurement construct for measuring the hierarchical construct environmental uncertainty (EU).

Supply Uncertainty

The outcomes of the present study (see the table 6.25) confirmed that the absolute importance of supply uncertainty is 21.28% that is the item weight is 0.2128 and t - value is 0.6539 along with the item loading is 0.3672 and t-value 1.1279 in the higher order- construct of the environmental uncertainty (EU). In the empirical study, a number of studies were found in favor the supply uncertainty as discussed in section 2.6. Therefore, the finding of this study is logical according to earlier studies. This

study assumed that supply uncertainty is one of the necessary components for representation of environmental uncertainty (EU). This study provided strong substantiation regarding the importance of the formative measurement construct: supply uncertainty. It also was revealed that all constructs are significant either based on their weight or loading (see the table 6.25) in the hierarchical construct environmental uncertainty in the formative measurement model, with reference to Hair et al. (2011). In addition, this study identified that the multicollinearity problem does not exist among the measurement items of supply uncertainty as the VIF values for all items are below 5 (see the table 6.25). Therefore, the measurement of supply uncertainty is valid in terms of all formative constructs used for measurement of the hierarchical construct environmental uncertainty (EU).

Competitor Uncertainty

The outcomes of this study shown in the table 6.25 have established that the unconditional weight of competitor uncertainty is 37.53%, i.e. item weight is 0.3753 and t-value is 0.82, along with item loading is 0.7299 and t-value is 2.1839 in the higher order- construct environmental uncertainty (EU). In the earlier studies supported the competitor uncertainty (CU) as discussed in section 2.6. Therefore, the finding of this study is logical according to earlier studies. This study highlighted that competitor uncertainty is the key construct that helps to the meaningful representation of the hierarchical construct environmental uncertainty (EU). This study presented strong validation regarding the importance of the formative measurement construct like competitor uncertainty. It also was revealed that all the constructs are significant either based on their weight or loading (see the table 6.25) in the construct environmental uncertainty in the formative measurement model, with reference to Hair et al. (2011). In addition, this study identified that the multicollinearity problem does not exist among the measurement items of competitor uncertainty as the VIF values for all items are below 5 (see the table 6.25). Therefore, the measurement of competitor uncertainty is valid in terms of all formative construct has used for measurement of a hierarchical construct like environmental uncertainty (EU).

Climate Uncertainty

The findings of the present research have shown in the table 6.25 confirmed that the absolute importance of climate uncertainty is 27.49%, i.e. the item weight is 0.2749 and t-value is 1.3577 along with item loading is 0.5079 and t-value is 2.181 in the higher order- construct environmental uncertainty (EU). In the earlier many studies supported the climate uncertainty (CLU) as discussed in section 2.6. Therefore, the finding of this study is logical according to earlier studies. This study highlighted that climate uncertainty is a construct that helps to a consequential demonstration of hierarchical construct environmental uncertainty (EU). This study presented acceptable justification regarding the significance of the formative measurement construct: climate uncertainty. It also was revealed that all the constructs are significant either based on their weight or loading (see the table 6.25) in the hierarchical construct environmental uncertainty in the formative measurement model, with reference to Hair et al. (2011). In addition, this study identified that the multicollinearity problem does not exist among the measurement items of climate uncertainty as the VIF values for all items are below 5 (see the table 6.25). Therefore, the measurement of climate uncertainty is valid in terms of all formative construct and it has used for measurement of a hierarchical construct like environmental uncertainty (EU).

Government Uncertainty

The outcomes of this study shown in the table 6.25, have established that the unconditional weight of government uncertainty is 26.05%, i.e., item weight is 0.2605 and t-value is 0.6712 along with item loading is 0.5183 and t-value is 1.5287 in the hierarchical construct environmental uncertainty (EU). A lot of earlier research were supported the government uncertainty (GU) as a discussed in section 2.6. Therefore, the finding of this study is logical according to earlier studies. This study highlighted that government uncertainty is a means of construct that facilitates the meaningful illustration of construct environmental uncertainty. This study presented strong validation regarding the importance of the formative measurement construct like government uncertainty. It also was revealed that all the constructs are significant either based on their weight or loading (see the table 6.25) in the construct environmental uncertainty in the formative measurement model, with reference to Hair et al. (2011). In addition, this study identified that the multicollinearity problem does not exist among

the measurement construct of government uncertainty as the VIF values for all items are below 5 (see the table 6.25). Therefore, the measurement of government uncertainty is valid in terms of the formative construct used for measurement of hierarchical construct environmental uncertainty (EU).

Political Uncertainty

The results of the present study at the table 6.25, confirmed that the absolute substance of political uncertainty is 40%, i.e. the item weight is 0.4000 and t-value is 2.4028 along with item loading is 0.6133 and t-value is 3.5253 at the hierarchical construct of the environmental uncertainty. In the empirical study, a number of studies were found in favor the political uncertainty as discussed in section 2.6. Therefore, the finding of this study is logical according to earlier studies. This study assumed that political uncertainty is one of the compulsory components for representation of environmental uncertainty (EU). This study provided acceptable substantiation regarding the importance of the formative measurement construct like political uncertainty (PU). It also was revealed that all the constructs are significant either based on their weight or loading (see the table 6.25) in the hierarchical construct environmental uncertainty in the formative measurement model, with reference to Hair et al. (2011). In addition, this study identified that the multicollinearity problem does not exist among the measurement items of political uncertainty as the VIF values for all items are below 5 (five) (see the table 6.25). Therefore, the measurement of political uncertainty is valid in terms of all formative construct used for measurement of hierarchical construct environmental uncertainty (EU).

From the above arguments, it can be concluded that the second-order formative construct: environmental uncertainty (EU) has a strong relationship with its measurement constructs, like demand uncertainty (LDU), supply uncertainty (LSU), competitor uncertainty (LCU), climate uncertainty (LCLU), government political uncertainty (LGU) and political uncertainty (LPU) that were substantiated through weight score, VIF respectively. Hence, incorporating aforesaid measurement constructs of the second-order formative construct environmental uncertainty (EU) relationship is statistically significant as well as empirically valid with logical consideration. Thus, it has empirically justified that for measurement of the second-order formative construct

environmental uncertainty (EU) research can use the those measurement dimensions in the future research as a has been used in the present research.

7.4 Conclusion

This part of the report, such as chapter-7 represented the discussion on the basis of the PLS (Structural Equation Modelling) under the support of SmartPLS. The interpretations of the results have been conducted on the basis of the research objectives and hypotheses that are highly relevant and representative of the research questions. It has explored that the dimensions (measurement constructs) of the higher-order constructs, like agricultural marketing channel relationship (AMCR), sustainability governance (SUG), and environmental uncertainty (EU) supported the research objective-1 and 2 respectively. While, the research explored that higher-order construct agricultural marketing channel relationship (AMCR) reflected by the six measurements constructs like trust (TRT), commitment (COMT), power (POW), satisfaction (SAT), communication (COMU) and cooperation (COOP). In addition, sustainability governance (SUG) is reflected by the subsequent measurement constructs, like business sustainability (BSUT), integration (INTN), governance power (GPOW) and financial control (FC). Furthermore, environmental uncertainty (EU) was formatted through following formative measurement constructs, like demand uncertainty (DU), supply uncertainty (SU), competitor uncertainty (CU), climate uncertainty (CLU), government uncertainty (GU) and political uncertainty (PU) respectively.

This study also found that agricultural marketing channel relationship (AMCR) is positively related to the sustainable performance (SUP) of the dairy industry in Bangladesh. Again, agricultural marketing channel relationship (AMCR) is also positively associated with sustainability governance (SUG). In addition, the study also explored the relationship between sustainability governance (SUG) and sustainable performance (SUP). Those enlighten relationships substantiated the research hypotheses-1-3 respectively. The study outstandingly disclosed the mediating effect of sustainability governance (SUG) and found a partial effect on the research hypothesis-4. Finally, the study examined the moderating role of environmental uncertainty (EU) on the relationship of the AMCR and SUP as well as SUG and SUP. But, those

moderating effects have not been found significant with the statistical evidence regarding the negative effect of environmental uncertainty (EU) that verified the research hypotheses - 5 and 6 respectively. Hence, hypotheses Ha5 and Ha6 were not supported according to inferential statistical evidence and accepted as the null hypotheses. The next chapter will present the conclusion and research direction with respect to stakeholders.

Chapter-8: Conclusion and Future Research Direction

8.1 Introduction

This final chapter represents the conclusion of the present research. The next portion of the report presents a summary of the research based on the research questions and objectives, hypotheses, methodology, analysis, results and interpretation of this research. This chapter also concentrated on the research findings and contributed to the existing knowledge in terms of methodology, theory and practice parts. In the final section, directions for future research are outlined that could be valuable in the context of the existing research.

8.2 Summary of the Study

The agricultural sector is a volatile sector, in a contest to other manufacturing sectors. Along with this, it has been found that the agricultural sector has extremely influenced the fundamental aspects of any nation in developed and developing the economy. Volatility and unpredictability are extremely challenging factors for the agricultural sector. This challenging factor creates many forms of the hindrances on the performances of this sector. This is very interesting that agricultural hindrances or obstacles suffered not only in developing countries but also in developed countries. But, the impacts of the obstacles were managed by the developed countries through the strategic decisions and technological adaptations. Those countries also used contemporary research focused on the areas related to the agriculture, particularly agricultural marketing system of the dairy industry.

The dairy industry is one of the highly important industries in the agricultural sector. But this industry is uncertain and influenced by many factors that negatively moderate the sustainable performance of this industry. Many earlier studies explored the ways of mitigation of the uncertainty and ensuring the sustainable performance of the dairy industry. Among these, traditional agricultural marketing system and research are regarded very remarkable in the dairy industry along with others. But the dairy industry has been suffering from many type challenges in the context of the sustainable performance after remarkable effort and development steps have been taken by the concern authorities.

The history of the dairy industry in Bangladesh has been a grown-up and developed in the agricultural sector, which is now visible from many routes of justifications. But, after the liberation war government took many steps, such as forming the co-operatives society, modern artificial breeding, and collection of higher yielding animals as well as the establishment of the veterinary medical colleges, universities also livestock department and ministry as well for changing the status of this industry, particularly the socio-economic position of the ultimate farmers and customers as well as stakeholders. After these initiatives, this industry is now developed in different the aspects, for example, increasing productivity, animal welfare and spreading the farming interest to a mass citizen of this country as well as technological adaptation. Although, following forty-four year from the liberation war this industry does not reach its targeted destinations, such as economic performance, environmental performance and social performance were not up to the mark. This is a concerned matter of the policy makers, including national and international development partners regarding the sustainable performance of the dairy industry in Bangladesh.

Therefore, agricultural marketing system, particularly agricultural marketing channel relationship (AMCR) is a new paradigm in the family of marketing which is essential for increasing the sustainable performance of the dairy industry in Bangladesh according to the theoretical and empirical justifications. A strong relationship with channel members may support the farms and stakeholders to reduce the financial loss by minimizing cost, reduce the unpredictability and vulnerabilities of both parties that were empirically supported by the earlier studies as discussed in the chapter-2.

Moreover, the earlier studies regarding the agricultural marketing system and sustainable performance of the agricultural sector, which did not address any recognized tools to reduce the lack of sustainable performance of agricultural sector particularly the dairy industry. Those earlier studies also could not empirically confirm the model that has highly focused on this study. With this background, the purpose of the present study is to develop a model with justification of theoretical and practical observations that enhanced the comprehensiveness of the research outcomes such as: the agricultural marketing channel relationship (AMCR), sustainable performance (SUP) along with the sustainability governance (SUG) and environmental uncertainty (EU) as well. For the theoretical and conceptual validity of the model as well as the

proposed research hypothesized relationship among the constructs has been evaluated on the basis of theories (social exchange theory and stakeholder theory). Finally, qualitative study substantiated the research model which developed by the comprehensive literature review as discussed in the chapter-2.

In the methodological section (as presented in chapter-3), the present research employed a mixed method research approach, which has combined the qualitative and quantitative method in the two phases of the data collection and analysis process. In the first step, the main research objectives were to examining the applicability of the initial model and measurement constructs of higher order constructs. The qualitative field study was conducted by interviewing 19 (nineteen) marketing channel members (farmers and commercial buyers) from the two districts, like Sirajgong and Chittagong in Bangladesh who were the targeted sample of the study. The semi-structured interview protocol was used for data collection and the data were analysed through the content analysis approach. From the findings of the content analysis, a field study model was developed (as discussed in Chapter 4). Then, based on the comparison of the conceptual model and the field study model, a comprehensive and final research model was developed. In the second step, this final research model was empirical substantiated by the quantitative research approach that was used to test the research hypotheses accordance with the adopted research approach like mixed method. For testing the proposed hypotheses this study employed the PLS –based Structural Equation Modelling (SEM).

The final research model included the measurement constructs of agricultural marketing channel relationship (AMCR) which has reflected by the dimensions, like trust, commitment, power, satisfaction, communication and cooperation; the mediating construct sustainability governance (SUG) which has reflected by the dimensions, like business sustainability, integration, governance power and financial control; along with moderating construct (EU) which has formatted through the dimensions, like supply uncertainty, supply uncertainty, competitor uncertainty, government uncertainty, political uncertainty and climate uncertainty; finally the construct of the sustainable performance (SUP) which has reflected by the following dimensions, like economic sustainability, environmental sustainability and social sustainability. The higher-order constructs and their link relationships were found from the prominent theories and

empirical studies. These measurement dimensions were used for questionnaire development (as described in Chapter 5) in the quantitative analysis section.

The developed questionnaire was pre-tested and corrected according to experts' recommendation and was made final. Later, followed by pilot studies, 320 usable survey responses were collected in the final survey. The collected data were analysed by using partial least squares (PLS) -based Structural Equation Modelling (SEM) technique (see Chapter 6). The PLS analysis was carried out to evaluate the measurement model and the structural model. In the assessment of the measurement model, items with low reliability were dropped from the model. The refined model ensured the acceptable level of item reliability, convergent validity and discriminant validity. The structural model was then assessed.

The assessment model demonstrated that higher-order constructs, like agricultural marketing channel relationship (AMCR) explaining the total variance 34.1% of sustainable performance and 34.5% total variance explained by the construct sustainability governance (SUG). The results of the hypotheses (Ha1, Ha2, Ha3, and Ha4) were found positively supported the mediating construct of sustainability governance (SUG). But the exception was found regarding the moderating construct of environmental uncertainty (EU) in all of the two hypotheses, namely (Ha5-Ha6) were not supported statistically. The results were justified the managerial and research implications. The following parts of the report discussed the implications of the study.

8.3 Contribution of the Research

8.3.1 Methodological Contribution

The major contribution of this research focuses on the research method that has been applied in this research. In the agricultural marketing research area, most of the researchers applied mono-method approach, but this study applied a mixed-method that combines qualitative and quantitative approaches in the data collection and process. According to the earlier discussion, a field study followed by a final survey was conducted in the data collection process.

The reason for why using the mixed method in the present research is that sustainable performance and other constructs focused in the research model is based on the

Bangladeshi context. Finally, it has found little attention in the earlier research studies. According to existing literature, the largest part the theories and studies of those areas related to research model were developed based on western perspectives and highly in manufacturing industries. Consequently, the constructs and measurement items were developed in the cogent on the western side and manufacturing industry that were not the subject matter of the present study. Therefore, by adopting a mixed method, appropriate measurements and instruments in the context of this research can be derived. In addition, the measurement constructs can also be explored by this study. By the application of this research approach, the study explored the important dimensions of the present initial model by the field study such as, ‘political uncertainty’ in the moderating construct environmental uncertainty (EU) and found empirical validation regarding this dimension. Finally, this dimension with variable included in the comprehensive research model of the study which is a new inclusion in the present study.

Based on the above discussion, it has recommended that mixed method may be considered in future research, where constructs and dimensions are required to explore for any particular industry and country. This combination of methods helps to specify the functional relationship between constructs, which is sufficient to enhance the understandability of the research findings. Furthermore, this research method presents the indispensable information for pure explanatory arguments in order to confirm or improve the existing theories, specially when the literature on the research topic is still lacking and insufficient. Hence, this research extended the existing methodological wisdom regarding the agricultural marketing research and supported to use mixed method for better and comprehensive research outcomes and developing a model with empirical validation. This research contributes specifically in the methodological view and builds a strong as well as preeminent evidence for using the mixed method in the marketing research and agricultural marketing research as a new paradigm of marketing to the future researchers in the scholarly and others non-academic research field.

8.3.2 Theoretical Contribution

The research model for this study provides judgment to outcomes of several academic areas. Among these, this research model enhanced the understandability regarding the higher-order constructs, like agricultural marketing channel relationship (AMCR),

sustainability governance (SUG) and environmental uncertainty (EU) through testing and substantiation as regards the measurement constructs. It also elucidated the relationships between agricultural marketing channel relationship (AMCR) and other higher-order constructs that highlighted in the research model: the mediating construct sustainability governance (SUG) and the moderating construct environmental uncertainty (EU) along with the outcome construct sustainable performance (SUP). Along these, a considerable research gaps have been identified through the extensive literature review on aforesaid constructs according to research model (as discussed in chapter-2). This research offers new and valuable insights into developing the research model. Furthermore, the developed model was evaluated through a qualitative field study. Then a comprehensive research model and hypothesized research model were also developed.

The final research model addresses the importance of the agricultural marketing channel relationship (AMCR) to reduce the uncertainty and enhanced the sustainable performance of the dairy industry in Bangladesh. Thus, present study contributes to the body of knowledge as there is no previous research model that incorporates the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) and sustainability governance (SUG) as the mediator construct and moderating construct of environmental uncertainty (EU) and the outcome construct sustainable performance (SUP) in the context of the dairy industry particularly Bangladesh.

This study empirically supported the measurement of the hierarchical and multidimensional constructs, such as agricultural marketing channel relationship (AMCR). The measurement and multidimensional construct validation have not yet been developed or explored in the context of the dairy industry in Bangladesh according to the best knowledge of then researcher. Therefore, this study developed the literature of agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) along with sustainability governance (SUG) and the relationship with them including the moderating effect of environmental uncertainty (EU).

In the literature context, there is a perceptual argument about the agricultural marketing channel relationship (AMCR) constructs and measurement constructs. This study discovers and splits the measurement constructs of agricultural marketing channel relationship (AMCR). Besides the existing literature and field study outcomes, this

research explores the significance of measurement constructs, such as political uncertainty (PU) as a separate dimension of environmental uncertainty (EU) in the context of Bangladesh. This measurement construct was validated based on empirical confirmation and literature support according to the earlier relevant studies. In addition, this study identifies the sustainability governance (SUG) in the dairy industry in Bangladesh and develops an empirically validated measure for the hierarchical and multidimensional like sustainability governance (SUG). There are theoretical studies which recommended that channel relationship positively supports for developing the sustainability governance (SUG) for the dairy industry, but an empirical study to validate the link between the two has not yet been conducted. This study finds that there is a positive relationship between sustainability governance (SUG) and sustainable performance (SUP), which is an exclusive contribution of the study in the context of sustainable development of any industry particularly in the sustainable performance of the dairy industry in Bangladesh.

In addition, the present study explored several relationships among the hierarchical and multidimensional constructs of the agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) in the model. Although these associations have been established in the field of sustainable performance, which is a completely new venture in the sustainability literature. Apart from these relationships, this study also identified and tested that sustainability governance mediates the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP). To the best of the researcher's knowledge, these mediation relationships have not yet been empirically tested in the sustainability research in the global context and highly exceptional in the context of Bangladesh particularly in the agricultural marketing literature.

Meanwhile, the present research model represented the hierarchical and multidimensional moderating construct environmental uncertainty (EU) and explored dimensions with the qualitative and quantitative study. The study explained influences of this construct on the relationship between agricultural marketing channel relationship (AMCR) and sustainable performance (SUP) as well as on the association between sustainability governance (SUG) and sustainable performance (SUP). But, this relationship were explored by this research model is completely new to the best

knowledge of the researcher's in the context of the environmental uncertainty (EU) and sustainability literature. Besides this, the study examined the moderating role of environmental uncertainty (EU) on the sustainable performance (SUP) and results were found very motivating and a new branch of knowledge in the literature of the environmental uncertainty (EU) regarding the mitigation of the environmental uncertainty (EU) in the context of the business and non-business organization. This result contributed to the existing research wisdom and opened a new branch of the thinking to the researchers and policy makers.

Finally, the comprehensive research model was unique in the sense that it incorporates two basic theories: the social exchange theory and stakeholder theory to identify the relevant factors and their relationships in the sustainable performance (SUP) and sustainability governance (SUG) as well as agricultural marketing channel relationship (AMCR). The study explored the application of the theory for identifying the dimensions and variables of the hierarchical and multidimensional constructs. Therefore, the study extends the outcome perspective of the theory in the context of the dairy industry in Bangladesh and these contributions are remarkable to the present knowledge and literature for the future research as per author best of knowledge.

8.3.3 Practical Contribution

Practical contribution focused the managerial contribution of the research. From a managerial point of view, it is important to realize the factors manipulate the stability of business and the sustainable performance (SUP) and support for reducing negative effects of environmental uncertainty (EU). Sustainable performance (SUP) of the dairy industry in Bangladesh is commonly interrupted and uncertain factors. This study presents a better understanding regarding the environmental uncertainty (EU) and their influence on the sustainable performance (SUP). The dairy farm managers and customers may be found the suggestions for building a strong relationship among the marketing channel members in the dairy industry in Bangladesh. More exclusively, the decision makers can also make sure the model to refine their thinking about the supporting factors that strengthen the farm's economic sustainability, environmental sustainability and social sustainability in the context of Bangladesh and others.

In term of ‘agricultural marketing channel relationship (AMCR)’, the research model helps the managers and other stakeholders regarding the decision making for the development the relationship with marketing channel members. Measurement constructs for building a relationship with marketing channel members in the agricultural sector had not prescribed before according to the best knowledge of the researchers’. But, dimensions found in the earlier literature have not been justified statistically regarding the acceptability in the context of agricultural marketing phenomenon and in the context of Bangladesh. Hence, this research opened a new avenue to the managers and other decision makers regarding the way to building marketing channel relationship in the agricultural sector particularly in the dairy industry in Bangladesh

Meanwhile, this study sketches route maps for the stakeholders of the dairy industry such as farms and customers, how the dairy industry will be sustainable (sustainable performance). The study specifically recommends the managers and customers about the measurement constructs of agricultural marketing channel relationship (AMCR). It also recommends the managers of the other industries as measurement constructs of relationship which will build up a value chain with marketing channel members or agents. In addition, the study highlighted that managers should highly concentrate to the ‘satisfaction’ of the channel member because it was found more significant measurement construct. Then focusing on the ‘power’ of the channel members it was also found as a second highest significant measurement construct. Besides those, managers should be prioritized the construct namely ‘communication’ among the other constructs which was found statistically significant than the other followed by ‘trust’, ‘commitment’ and ‘cooperation’. This study also suggests managers and customers in regards to the positive relationship between the ‘agricultural marketing channel relationship (AMCR)’ and ‘sustainable performance (SUP)’ of the dairy industry after an inferential test of the model. Therefore, the contribution of this study in the practical side is a milestone and an innovative direction to the sustainable performance (SUP) of any organizations, such as for making sustainable dairy industry.

In addition, the final research model supports the decision makers to collect the significant insights regarding the other supporting higher-order constructs for improving the sustainable performance. The research model explored that sustainability

governance (SUG) has a positive relationship with sustainable performance (SUP) and it was found statistically significant. The study guides the decision makers in the sustainable performance (SUP) to establish a proper governance structure like sustainability governance (SUG) that can accelerate the waves of the sustainable performance (SUP). The present research model contributes the decision makers through providing answers in regards to dimensions of sustainability governance (SUG). The measurement constructs of sustainability governance (SUG) in the model such as 'business sustainability, integration', 'governance power' and 'financial control' were explored. It has recommended that the decision makers should focus on the 'business sustainability' because it is a highly significant dimension in the list of the dimensions. Meanwhile, it should be also considered that the 'integration' as a second important dimension and 'governance power' as a third dimension respectively which have statistically proved by this study. It has noted that sustainability governance (SUG) does not have the same concept of traditional governance structure, but it is a participatory and mutually comprehensive and equally responsible (public, private and civil society) for implementation of the policy and strategy and maintaining the equality in the industry.

Furthermore, the present research supports the decision makers by introducing another new perception regarding the supporting factor that is positively related the sustainability governance (SUG). The model focuses that agricultural marketing channel relationship (AMCR) have a positive association with sustainable performance (SUP) and this has found statistically significant. Hence, it is a recommendation for the decision makers for building a long-term marketing channel relationship to enhance the sustainability governance (SUG) and sustainable performance (SUP). In addition, this relations and roles were exposed by the research model to the test of the mediation of the sustainability governance (SUG). Therefore, the contribution of the present research in the context of practical contribution is another landscape and the completely newest proposition to the decision makers for sustainable performance (SUP) in the dairy industry and others in the context of Bangladesh.

The model also supported the managers in regards the higher-order moderating construct environmental uncertainty (EU) that has a negative influence on the sustainable performance (SUP). Along with all recognized environmental uncertainty

(EU) measurement dimensions, the model exposed another contemporaneous dimension for the countries where the political situation is really unstable like Bangladesh. Finally, the research model supported the managers by disclosing the measurement constructs of EU, like supply uncertainty, supply uncertainty, competitor uncertainty, climate uncertainty, government uncertainty and political uncertainty. It is a new proposition for the managers that has highly addressed the 'political uncertainty' as a significant dimension because it was found that the highest percentage of total variance explained and followed by the 'climate uncertainty', 'governance uncertainty' and 'competitor uncertainty' respectively. The study also recommends that the decision makers should consider all the dimensions as an unpredictable factor and should take adaptive measures for reducing the uncertainty and negative effects on the sustainable performance (SUP). The present research explored on a new and motivating finding and suggested the decision makers build a long-term relationship with channel members and others customers for mitigating the uncertainty. This recommendation has explored this study through testing the moderation effect of the environmental uncertainty and it has also empirical evidence from earlier studies such as Wei et al. (2012) and Yeung et al. (2013). Therefore, the contribution of the present research model in the practical justification is really innovative and lucrative direction to the decision makers for ensuring the sustainable performance (SUP) with a minimum level of uncertainty as possible.

The research model directed the decision makers to develop relationship and sustainability governance (SUG) to achieve social, environmental and economic sustainability. Furthermore, it has been guiding the managers toward improving economic, environmental, social sustainability to ensure sustainable performance (SUP) of the organizations and farms. But, in the sample areas, the present study explored that sample farm have not economically sustainable which was identified by the both method of research qualitative and quantitative also. Hence, this study suggests decision makers or managers should consider the earlier exposed implications for overcoming this unexpected situation (economically unsustainable) situation of the farms and organizations. These were empirically supported by the earlier studies for better economic performance or sustainability partially. This study considers the Bangladesh as a case, particularly the dairy industry in Bangladesh. However, the

study's implications are significant for other countries in a similar and other related institutional context.

8.3.4 Implication for the Managers and Policy Makers

8.3.4.1 *Implication for Managers*

For every research, possibly the most important implication is the heartiest involvement of the managers in the respective field that is not unlike for the present research also. For the present research, it has expected that best implication will be possible if the managers engage themselves with self-commitment and visions for the sustainable performance of the industry within a country. As focus on this research, the managers are the key personnel who set the diverse working standard and monitoring the whole performances of the organizations. Hence, the present research emphasized the involvement of managers in implementing the research outcomes as an essential part of the process.

In addition, intended for overcoming the existing limitations and challenges faced by the manager regularly, the present research explored some ways and outcomes for mitigating the factors of limitations. It has clearly been mentioned that the role of managers for the sustainable performance (SUP) of the dairy industry was identical and specified according to the practical contribution of the study. Managers may responses according to the implications of the present study and increase the support resources for implications as remarked in the earlier sections.

This research implies that the manager should develop managerial skills and adaptability in the business and non-business matters. The existing situation is not poor but not up to the mark in the every region of the society as much as expected and required for the sustainable performance of the dairy industry. According to the research implies, the managers should improve the qualities to measure the diverse situations and actions. The implications of the present research are specifically built a long-term agricultural marketing channel relation. Managers should understand the marketing channel members' behavior and highly focus on the measurement factors such as satisfaction, power, communication, trust, commitment and cooperation respectively, which were found valid and logical for agricultural marketing channel relationship (AMCR). They should be cared for their needs and cooperates with

marketing channel members for increasing the understanding and communication with others. It has proved that satisfied channel members will be encouraged for a long-term relationship. Hence, managers should highly concentrate on the business to the business relationship as dyads of the suppliers- buyers' relationship.

In addition, the study suggested that manager should increase the proficiency regarding the policy issues and others relevance circumstance that may support to formulating policy and strategy for the development of the industry. The implementation of the second research recommendations is, such as the development of the sustainability governance mechanism in the dairy industry for the better sustainable performance of the dairy industry. According to the research directions for establishing the sustainability governance, the manager should establish business sustainability and declare a sustainability vision along with following all concern matter of the sustainability in regards to economic, social and environmental performance. On the other hand, the manager should participate in the different discussion and panel conversations, gathering and sharing with the customers and participate in the integration process to enhance the sustainability governance (SUG) as well as governance power followed by a financial control that is essential for better control of the industry explored by the present study.

Moreover, the study directed the managers to follow the intelligence and share information with similar organizations and experts for mitigating the environmental uncertainty (EU). Whatever, the environmental uncertainty (EU) has a negative effect or not, it does a significant matter but managers must look after any unpredictable situations and enhance the farms and company's resilience. Resilience has a role to reduce the impact of the environmental uncertainty which has empirical evidence and explored by the present study through the respective hypotheses.

By the way, the present study emphasized that, if the managers participate in the whole process and carefully follow up the contributions and guidelines as a recommended earlier in this study. The industry will be developed sustainably and the organization may enjoy maximum benefits, society may enjoy better living standard and environment will be acclimated and safe for the planet at the same time that is the purpose of the sustainable performance of the dairy industry as well as development partners and SDG.s goals.

8.3.4.2 Implication for the government and related bodies

Implications for the Government

The government is a supreme authority in any country. For the implementation of the research implications a pertinent government and other supporting bodies' including development, partners may play a contributory role. Their roles for implementation of the research implications have been recognized from the many sites beginning till now. The study provides the inputs to the government and other related bodies for the formulation of the policy and strategy to build the relationship with marketing channel members and others customers for sustainable performance (SUP) of the dairy industry which is the major concern of the present research.

The study explored and hypothetically proved that for sustainable performance (SUP) of the dairy industry, special confidence (lack of uncertainty), agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) are required. The contribution of the dairy industry in Bangladesh is not an ordinary one. It has multi-phases of contribution in the national economy such as employment generation, supplying the nutrition; supplying the animals with red meat and reducing the food dependency with nutritional security. In addition, it has saved notable foreign reserves through dipping the imports of dairy products. But, having these significant contributions this industry has not been developed with consideration of ESE (economical, social and environmental) performances for a long time according to the desired of the society and other partners.

Meanwhile, as a strategic and development authority, the 'Government' should have taken the multiphase of responsibilities and playing governance role along with the present responsibilities for protecting the interest of the dairy industry. Along with present concern responsibilities, this study focused some research guidelines for the 'Government' such as facilitate this industry for reducing uncertainty, building the long-term relationship among the marketing channel members as well as establishing the sustainability governance which could support the way of the sustainable performance of the dairy industry in Bangladesh,

According to the statistical and empirical justifications, agricultural marketing channel relationship (AMCR) is a significant higher-order construct for achieving the

sustainable performance (SUP) of the dairy industry in Bangladesh. So, as a stakeholder 'Bangladesh Government' should contribute to the development of the agricultural marketing channel relationship (AMCR). Therefore, the study suggested that to build the agricultural marketing channel relationship (AMCR) government may take the initiative to sinking the marketing channels gaps (including horizontal and vertical) in the dairy industry through the development of the proper market structure for the agricultural product particularly for dairy products. Besides this, the government should arrange the programs to design a sustainable value chain or channel structure to ensure the fair price of the agricultural products, like dairy milk. Further more, the study also suggested that the governments may motivate the marketing channel members for building a relationship in the inter-business and intra-business for maximizing the sustainable performance (SUP) of the dairy industry which was empirically proved in this study according to qualitative and quantitative data. These aforementioned types of the initiatives followed by the government may establish the balance situation in the market and reduced the buyer-seller psychological gap. Hence, these initiatives may be a remarkable contribution to the 'Government' for building the agricultural marketing channel relationship (AMCR) which positively supported the way of the sustainable performance (SUP) and sustainability governance (SUG) of the dairy industry in Bangladesh.

In addition, the study found that sustainability governance (SUG) has a positive relationship with the sustainable performance (SUP) as well as reduced the impact of uncertainty (EU) in the dairy industry. Thus, as a stakeholder 'Government' should contribute to the development of the sustainability governance (SUG) in the dairy industry in Bangladesh. Hence, the study suggested that the government may take the initiatives for establishing sustainability governance, which is completely different from the traditional governance structure. To establish sustainability governance, the government should take diversified programs which are mutually shared and explicable. Besides these, the government also should take the initiative for sharing with customers and other stakeholders such as private (marketing channel member), public (government) and people (civil society) at the time of the formulation governance structure for the dairy industry. Meanwhile, the government also should give the opportunity to stakeholders for giving views and evaluating those views at the time of the formulation of the policies and strategies. Furthermore, the government also

can take the initiative to involving them for implementation of the policies and strategies that were formulated for sustainable performance (SUP) of the dairy industry. Specifically, the government should consider the local farmers and companies at the time of formulation of import policy and developed a structure, control system to motivate the sustainable performance (SUP) of the dairy industry and offer an extensive promotional program for establishing the reflective dimensions of sustainability governance (SUG) in the farms and industries. Hence, these initiatives may be a remarkable involvement of the ‘Government’ to establish the sustainability governance (SUG) which positively supported the way of the sustainable performance (SUP) and support to the reduce the impact of the environmental uncertainty (EU) of the dairy industry in Bangladesh.

In addition more, the results of the present study justified the outcome construct and it’s measurement dimensions in the dairy industry in Bangladesh. This study empirically and theoretically proved that the higher-order construct sustainable performance (SUP) reflected by the economic sustainability, social sustainability and environmental sustainability. Thus, as an authoritative stakeholder, the ‘Government’ should play the contributory role to ensure the multilevel of sustainability in the dairy industry in Bangladesh. This study explored that economic sustainability is a reflective dimensions, which has a significant contribution to sustainable performance (SUP). Thus, the present study recommended that for better ‘economic sustainability’ government may take the initiative to formulate the market governance policy to stop the unethical marketing practices, ensure a fair price and imposed quality product with environmental consideration as well as established market monitoring council to supervise market operations regularly. Along with these, the government may be focused on the monitor to support product supply, price variability (inconstant with main product price) in the market which is the main problem in the dairy industry. Besides this, the government may be monitored agricultural products’ fair price to ensure the regular supply in the market.

In addition, the findings of this study explored that social sustainability is another reflective dimension of sustainable performance (SUP). Hence, a present study expected a notable involvement of the respected stakeholders like government for the smoothly achievement of the social sustainability. The present study recommended that

government might develop employee benefits policy for the agricultural sector, take initiative for enlightened employees' fundamental rights including safety issues for increasing their living standard of the society. In addition, the government must inspire employees and employers for practice the participatory management style and motivate them for better social performances including employee welfare. Finally, the study suggested that government should establish a council for monitoring the welfare of employees and society.

On the hand, the findings of the present study also examined that environmental sustainability is a significant construct which reflected the sustainable performance (SUP) of the dairy industry in Bangladesh. Thus, the study recognized that 'Government' has a remarkable role for ensuring the environmental sustainability of the particular industry. As the purpose of this, the study recommended some guidelines for the government to facilitate ways of the environmental sustainability in the dairy industry. For example, the government should develop an environment protection policy with consideration of the long-term plan, increasing awareness about the environmental issues to the customers and motivate them for using the environmentally friendly product such as production process has impacted less on the environment. Besides these, the government should motivate the commercial customers for collecting from those vendors or farms, which has collected environment clearance (certificate) from the respective authorities and collected it at the time of the supply of the products. In addition, the government may take the initiative for rewarding those farms, which production policy has been supporting the government policy, also declared the punishment for others, who violate the government policy also. This study has proposed that for establishing the sustainability governance (SUG) government should impose the tax namely 'Sustainability Tax' on the unsustainable performance, which means that the farm are economically sustainable but their activities are not equally sustainable in socially and environmentally.

Finally, this study has found that environmental uncertainty (EU) is a moderating construct that has an impact on the sustainable performance (SUP) of the dairy industry. Thus, present study empirically and theoretically examined government association may support to reduce the environmental uncertainty (EU) in the sample industry. Thus, this study suggested some guidelines for the respective governments,

such as take the initiative to reduce uncertainties, like political uncertainty and government policy uncertainty which is also highly influential uncertainty in the dairy industry. To mitigate the uncertain situations government should be taken the initiative to maintain stable political situation and develop balance import-export policy that is related to the demand and supply uncertainty. Besides these, the government should establish a council for regular observation of the international export and import policies. By these initiatives, all forward and backward linkage industry will be established and developed to meet the domestic level supply and motivate to export in the international market where competitive advantages and opportunities enclose. Those initiatives may be played pertinently role for reducing the environmental uncertainty (EU) in the dairy.

Meanwhile, this study recommended government should ensure the proper utilizations in foreign aid (direct aid or coherence development fund) and allocation of the national budget through marginal farmer's oriented projects that has practiced by the European Union (EU), USA and other developed countries along with ensuring the accountability of project's authorities. Moreover, the government may take care regarding the international development partners and NGO's directions for development of the dairy industry, if it is relevant and not harmful for the national and stakeholders' interest.

Implications for the Trade Bodies

The study also helps the different trade bodies, such as farms' association (Bangladesh dairy farm associations) to play the energetic role for sustainable performance (SUP) of the dairy industry. Through the empirical and theoretical evaluation, this study explored that related trade bodies have a multi-dimensional role in the ways of the sustainable performance (SUP). Thus, this study recommended some guidelines for the trade bodies to take the initiative for building long –term agricultural marketing channel relationship (AMCR) and establish sustainability governance (SUG) to mitigate the environmental uncertainty (EU) through the adoption of the measurement dimensions have been exposed in the earlier in respect to higher order constructs, like AMCR, SUG, EU and SUP. This study also suggested that they should work as an observer and arranges the seminar, workshops and other forms of programs for enhancing the skills to mitigate the uncertainty and awareness building for sustainable performance (SUP) of the dairy industry.

Moreover, the trade bodies should regularly communicate with government agencies and international development partners, like FAO, WHO, UN other organization, NGO's or other pressure groups to support them in understanding the existing situation this industry. It also noted that trade bodies should participate in the policy formulation groups to raise the voice regarding the rights and duties of stakeholders for the sustainable performance (SUP) of the dairy industry in Bangladesh. Besides this, they should take steps for developing guidelines in support of farmer's and other stakeholders regarding the acceptable standard of product quality, animal welfare, and environmental protection and employee benefits etc. Moreover, the study finally proposed that trade bodies should make negotiate with other marketing channel members including commercial buyers for ensuring the sound market operations and fair pricing about their farm products. They also try to proper utilize the comparative advantages (strengths) for enjoying market opportunities and minimizing potential threats.

Implications for International Development Partner

The outcomes of this study will be helped the development partners, like UN, FAO, WHO and NGOs who are the partners of this journey. All development partners should be prepared a plan to understand the concrete circumstances of the industry and it should undertake research at the rural level for exploring the real opportunities and limits of the industry. In addition, those organizations also should prepare a plan to assist the stakeholders for sustainable performance (SUP) of the dairy industry, because it is not only local interest but also international interest like United Nation (UN) and other NGOs.

Moreover, the development partner(s) may motivate Bangladesh government for establishing sustainability governance (SUG) structure with proper policy and strategy for better economic, social and environmental performance. Along with these, development partners may take initiative for supporting the government to increase the capability of the governmental officials of the various department as well as related ministries. In addition more, development partners may contribute through the resource sharing, such as technology, research findings, multidimensional professional experts and relevant information with the national level policy makers as well as the government for sustainable performance of the dairy industry in Bangladesh. Along

with others, the development partners and NGOs should conduct research by reliable research groups on the particular stakeholders and explore the prevailing circumstance of those areas before launching any development project. This type of initiatives may enhance future projects outcomes which may help the sustainable performance of the dairy industry in Bangladesh. By these ways, development partners along with NGOs may play a significant role as an external pressure group for a sustainable performance (SUP) of the dairy industry in Bangladesh, according to the research finding of the present study.

8.4 Research Limitations

This study is not beyond limitations. Limitation in the research has been empirically recognized by earlier studies, like (McGrath, 1982). It was identified that present study has some limitations, but that are not a serious or harmful for the findings of the present research. The following limitations of the present research are as follows:

Firstly, the study adopted a cross- sectional design that is empirically suitable for the present study. One of the main limitations of the cross-sectional design in the research is examining the phenomenon of the marketing channel relationship which is restricted in the assessment point. But, the longitudinal design may be able to overcome these problems and help to capture the dynamic phenomenon. For example, a longitudinal study of the relationship may support to explore the insights to measure the progress and impact of the relationship on the performance of the farms both financial and non-financial (Yeung et.al. 2013) Hence, the study recommends that longitudinal design for the future research.

Secondly, the unit of analysis of the present research is a dairy supplier (dairy farms). While, other marketing channel members such as intermediaries, commercial buyer, and household buyers (consumers) are not considered as marketing channel members. Therefore, only the entities of the first steps of the marketing channel members are included in this research. Hence, it will be completed and more comprehensive, if all entities of the marketing channel members could be included in the future research.

Thirdly, the present study was conducted within a particular industry and in a single country. But, marketing channel relationship is a multi-contextual nature. Hence,

replications of the research in another context, industry and in another country may enhance the self-confidence of the research model that has tested by the present study.

Fourth, in the present research for the selection of the dimensions of second –order constructs, such as agricultural marketing channel relations (AMCR), sustainability governance (SUG) and environmental uncertainty (EU) were not prioritized by all empirically supported dimensions. Only the more accepted dimensions were included in the model. Therefore, it is recommended that the future research should include the all dimensions which could not incorporate in the present study model.

Fifth, the present research was conducted in the two well-developed milk producing districts, like Sirajgonj and Chittagong. At the assessment of measurement level, this study has found some items loading less than the accepted value (0.60) as per the recommendation of the Mores and Chang (2006). But, those items were found a frequent response from samples of the field study. In this regards, after a comprehensive study of data, it has explored that farming system and market structure in both the sample areas were not absolutely same. Thus, the variability of responses was found remarkable in those items were rejected at the various measurement constructs. This study recommended that for overcoming that problem future research should conduct with more than samples have been used in the present study.

Finally, the research was conducted with minimum items to measure the dimensions, particularly in the sustainability governance. Hence, the future research should try to increase the measurement items for the constructs, particularly in sustainability governance. Inspire

Therefore, in spite of maximum concentration and dedication the aforesaid limitations were found in the present study, which is really unfortunate for researchers. It has been mentioned that at the time of the research period researcher faced scarcity of those resources which were very important for an advanced research. In addition, the present research has not availed any grant from any national or international institutions, but it was totally self-financed. Therefore, it's a commitment of the researcher to the stakeholders and other relevant concerns to undertake the research in future through overcoming the aforesaid limitations as much as possible for making the research

outcomes more comprehensive and applicable to the stakeholders in the national and international arena.

8.5 Future Research Directions

The study generates a number of opportunities for future research that are summarized as follows:

The study used mixed methods for exploring the real fact by the analysis of data. Here, the qualitative analysis was adapted to employ the conceptual validation of the research model. Then the study used the quantitative analysis for inferential justification of the research model. By keeping principles, methodology and triangulation this research can be initiated with the valid model at the farm level by other research methods, particularly in case study approach.

To find out the limitations of the research, the research has been conducted on the cross-sectional design. This may be adapted longitudinal research design for the future research for measuring the impact of the constructs on the sustainable performance. The present research was conducted on the unit of the two members of the marketing channel member such as farmers. But, in future research may be conducted by incorporating all other relevant marketing channel members to increase the comprehensibility of the research findings to the stakeholders and agencies.

The study was conducted on the dairy industry in Bangladesh; future study may be conducted on the other industries and sectors under the different context by incorporating the related farms incorporating all channel members and others countries.

The study was undertaken by the 320 usable samples who are dairy farmers and managers of the dairy farms. Thus, future research should be conducted by the other sample groups i.e. marketing channel members, like commercial buyers (milk processing companies) intermediaries, retailers and consumers. In addition, the sample size of the future study must be greater than 320 samples. It has recommended that large sample size will be increased the values of reliability, internal consistency and discriminant validity of the measurement constructs. Hence, the power of the present research model will be increased in the future.

The present research model applied both maximum higher- order constructs and second-order measurement constructs which were measured by using items selected on the proper judgment of field study results. By the future research, this research model and constructs may be further examined in the other industries and countries as well.

The study exposes a research model, which linked agricultural marketing relationship (AMCR) with sustainable performance (SUP) and sustainability governance (SUG) as well as measured the impacts of it in the context of the agricultural sector. The future research should test that the links of other manufacturing or service sectors also.

The present study explored the dimensions of the AMCR, SUG and EU and found the links of these constructs for the dairy industry. Future research may be conducted on identifying the measurement of the agricultural marketing channel relationship (AMCR) and sustainability governance (SUG) along with sustainable performance (SUP) and explored the impact as well as measured the link relations in the same industry and other industries in the context of Bangladesh as well as other countries.

References

- 4C Association. (2012). The 4C Code of Conduct.
- Abbott, K. W. (2012). Engaging the public and the private in global sustainability governance. *International Affairs*, 88(3), 543-564.
- Accenture, (2010). A New Era of Sustainability: U.N. Global Compact & Accenture. CEO Study. June.
- Achrol, R. S. (1991). Evolution of the marketing organization: new forms for turbulent environments. *The Journal of Marketing*, 77-93.
- Achrol, R. S., Reve, T., & Stern, L. W. (1983). The environment of marketing channel dyads: a framework for comparative analysis. *The Journal of Marketing*, 55-67.
- Adizes, I., & Weston, J. F. (1973). Comparative models of social responsibility. *Academy of Management Journal*, 16(1), 112-128.
- Afthanorhan, W. M. A. B. W. (2014). Hierarchical component using reflective-formative measurement model in partial least square structural equation modeling (Pls-Sem). *International Journal of Mathematics*, 2(2), 33-49.
- Ageron, B., Gunasekaran, A., & Spalanzani, A. (2012). Sustainable supply management: An empirical study. *International Journal of Production Economics*, 140(1), 168-182.
- Akter, S., D'Ambra, J., & Ray, P. (2011). An evaluation of PLS based complex models: the roles of power analysis, predictive relevance and GoF index.
- Alderson, W. (1957). Marketing behavior and executive action.
- Alderson, W. (1965). *Dynamic marketing behavior: A functionalist theory of marketing*. RD Irwin.
- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of occupational psychology*, 63(1), 1-18.
- Andersen, P. H. (2001). Relationship Development and Marketing Communication: An Integrative Model. *Journal of Business & Industrial Marketing*, 16(3), 167-182.

- Anderson, E., & Weitz, B. (1989). Determinants of continuity in conventional industrial channel dyads. *Marketing science*, 8(4), 310-323.
- Anderson, E., & Weitz, B. (1992). The use of pledges to build and sustain commitment in distribution channels. *Journal of marketing research*, 18-34.
- Anderson, E., Lodish, L. M., & Weitz, B. A. (1987). Resource allocation behavior in conventional channels. *Journal of marketing Research*, 85-97
- Anderson, J. C., & Narus, J. A. (1984). A model of the distributor's perspective of distributor-manufacturer working relationships. *The journal of marketing*, 62-74.
- Anderson, J. C., & Narus, J. A. (1990). A model of distributor firm and manufacturer firm working partnerships. *The Journal of Marketing*, 42-58
- Andreev, P., Heart, T., Maoz, H., & Pliskin, N. (2009). Validating formative partial least squares (PLS) models methodological review and empirical illustration. *ICIS 2009 Proceedings*, 193.
- Arndt, J. (1979). Toward a concept of domesticated markets. *The journal of marketing*, 69-75.
- Arnett, D. B., German, S. D., & Hunt, S. D. (2003). The identity salience model of relationship marketing success: The case of nonprofit marketing. *Journal of marketing*, 67(2), 89-105.
- Arrow, K.J. (1974). The limits of Organization. *Norton, New York*.
- Asaduzzaman, M. (2000). The livestock sector, economic development and poverty alleviation in Bangladesh. *Changing rural economy of Bangladesh. Bangladesh Economic Association, Dhaka, Bangladesh*, 42-53.
- Ashbaugh-Skaife, H., Collins, D. W., & LaFond, R. (2006). The effects of corporate governance on firms' credit ratings. *Journal of accounting and economics*, 42(1), 203-243.
- Aulakh, P. S., Kotabe, M., & Sahay, A. (1997). TRUST AND PERFORMANCE IN CROSS-BORDER MARKETING PARTNERSHIPS. *Cooperative Strategies: North American perspectives*, 1, 163

- Auld, C. J., & Case, A. J. (1997). Social exchange processes in leisure and non-leisure settings: A review and exploratory investigation. *Journal of Leisure Research*, 29(2), 183.
- Bacharach, S. B., & Lawler, E. J. (1980). *Power and politics in organizations*. Jossey-Bass Inc Pub.
- Badri, M. A., Davis, D., & Davis, D. (2000). Operations strategy, environmental uncertainty and performance: a path analytic model of industries in developing countries. *Omega*, 28(2), 155-173.
- Badri, M. A., Davis, D., & Davis, D. (2000). Operations strategy, environmental uncertainty and performance: a path analytic model of industries in developing countries. *Omega*, 28(2), 155-173.
- Bagozzi, R. P., & Heatherton, T. F. (1994). A general approach to representing multifaceted personality constructs: Application to state self-esteem. *Structural Equation Modeling: A Multidisciplinary Journal*, 1(1), 35-67.
- Bagozzi, R. P., & Pieters, R. (1998). Goal-directed emotions. *Cognition & Emotion*, 12(1), 1-26.
- Bagstad, K. J., Stapleton, K., & D'Agostino, J. R. (2007). Taxes, subsidies, and insurance as drivers of United States coastal development. *Ecological Economics*, 63(2), 285-298.
- Bahl, S., & Milne, G. R. (2007). 15 Mixed methods in interpretive research: an application to the study of the self concept. *Handbook of qualitative research methods in marketing*, 198.
- Bangladesh Climate Change Country Study Program (1997). Assessment of vulnerability and adaptation to climate change. Final report, Department of Environment, Govt of Bangladesh
- Bansal, H. S., Irving, P. G., & Taylor, S. F. (2004). A three-component model of customer to service providers. *Journal of the Academy of marketing Science*, 32(3), 234-250.
- Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic management journal*, 26(3), 197-218.

- Barclay, D., Higgins, C., & Thompson, R. (1995). The partial least squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration. *Technology studies*, 2(2), 285-309
- Barney, J. B., & Hansen, M. H. (1994). Trustworthiness as a source of competitive advantage. *Strategic management journal*, 15(S1), 175-190.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
- Bartelmus, P. (1999). Green accounting for a sustainable economy: Policy use and analysis of environmental accounts in the Philippines. *Ecological Economics*, 29(1), 155-170.
- Bartlett, R. (1989). *Economics and Power: An Inquiry into Human Relations and Markets*. Cambridge: Cambridge University Press.
- Bartlett, R. (2006). *Economics and power: An inquiry into human relations and markets*. Cambridge University Press.
- Batt, P. J. (2003). Building trust between growers and market agents. *Supply Chain Management: an international journal*, 8(1), 65-78.
- Batt, P. J. (2004). Incorporating measures of satisfaction, trust and power-dependence into an analysis of agribusiness supply chains. *Agriproduct supply-chain management in developing countries*, 27-43.
- Bazeley, P. (2004). Issues in mixing qualitative and quantitative approaches to research. *Applying qualitative methods to marketing management research*, 141-156.
- Bazyar, A., Teimoury, E., Fesharaki, M., Moini, A., & Mohammadi, S. (2013). Linking power, risk, and governance: a survey research in new product development relationships. *Journal of Business & Industrial Marketing*, 28(5), 371-382.
- BBS, 1994. Statistical Yearbook of Bangladesh. Bangladesh Bureau of Statistics, Ministry of Planning, Dhaka.

- Becker, J. M., Klein, K., & Wetzels, M. (2012). Hierarchical latent variable models in PLS-SEM: guidelines for using reflective-formative type models. *Long Range Planning*, 45(5), 359-394.
- Beetham, D. (1991). Legitimation. *Power*. Basingstoke: Macmillan.
- Bengtsson, M., & Kock, S. (1999). Cooperation and competition in relationships between competitors in business networks. *Journal of business & industrial marketing*, 14(3), 178-194
- Bentein, K., Vandenberghe, C., Vandenberg, R., & Stinglhamber, F. (2005). The role of change in the relationship between commitment and turnover: a latent growth modeling approach. *Journal of Applied Psychology*, 90(3), 468.
- Benton, W. C., & Maloni, M. (2005). The influence of power driven buyer/seller relationships on supply chain satisfaction. *Journal of Operations Management*, 23(1), 1-22.
- Berry, L. L. (1983). Relationship marketing. American Marketing Association.
- Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of corporate finance*, 14(3), 257-273.
- Bidault, F. & Jarillo, J.C. (1997). "Trust in economic transactions". In: Bidault, F. & Gomez, P-Y. & Marion, G. (Eds.), "Trust: Firm and society", Editions ESKA, Paris.
- Biggadike, R. (1979). 'The risky business of diversification'. Harvard Business Review, 57, 103-111
- Biggemann, S., & Buttle, F. (2009). Coordinated interaction and paradox in business relationships. *Journal of Business & Industrial Marketing*, 24(8), 549-560.
- Bleeke, J. & David, E. (1993). *Collaborating to Compete*. New York: John Wiley & Sons
- Blomqvist, K. (1997). The many faces of trust. *Scandinavian journal of management*, 13(3), 271-286.
- Blomqvist, K. (2002). *Partnering in the dynamic environment: The role of trust in asymmetric technology partnership formation*. Lappeenranta University of Technology.

- Boal, K. B., & Peery, N. (1985). The cognitive structure of corporate social responsibility. *Journal of Management*, 11(3), 71-82.
- Bollen, K., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological bulletin*, 110(2), 305.
- Bolton, J. M., & Dwyer, K. (2003). Chapter 6.1: Achieving supply chain alignment through behavior change. *Gower handbook of supply chain management*.
- Boniface, B. (2011). Producer Segmentation and the Role of Long-Term Relationship in Malaysia's Milk Supply Chains. In *Australasian Agricultural and Resources Economics Society (AARES) 55th Annual Conference*.
- Boniface, B., Gyau, A., & Stringer, R. (2009). Relationship quality as the predictor of long term relationship in the Malaysian dairy industry.
- Boniface, B., Gyau, A., & Stringer, R. (2012). Linking price satisfaction and business performance in Malaysia's dairy industry. *Asia Pacific Journal of Marketing and Logistics*, 24(2), 288-304.
- Boniface, B., Gyau, A., Stringer, R., & Umberger, W. (2010). Building producer loyalty in Malaysia's fresh milk supply chain. *Australasian Agribusiness Review*, 18(5), 1-19.
- Bonoma, T. V. (1976). Conflict, cooperation and trust in three power systems. *Behavioral Science*, 21(6), 499-514
- Boston Consulting Group, (2011). Sustainability: The 'Embracers' Seize Advantage. MIT Sloan Management Review Research Report, Winter.
- Bowman, E. H., & Hurry, D. (1993). Strategy through the option lens: An integrated view of resource investments and the incremental-choice process. *Academy of management review*, 18(4), 760-782.
- Boyle, B., Dwyer, F. R., Robicheaux, R. A., & Simpson, J. T. (1992). Influence strategies in marketing channels: Measures and use in different relationship structures. *Journal of Marketing Research*, 462-473
- Bozarth, C., Handfield, R., & Das, A. (1998). Stages of global sourcing strategy evolution: an exploratory study. *Journal of operations management*, 16(2), 241-255.

- Brashear, T. G., Boles, J. S., Bellenger, D. N., & Brooks, C. M. (2003). An empirical test of trust-building processes and outcomes in sales manager–salesperson relationships. *Journal of the Academy of Marketing Science*, 31(2), 189-200.
- Brown, J. R., Lusch, R. F., & Nicholson, C. Y. (1995). Power and relationship commitment: their impact on marketing channel member performance. *Journal of retailing*, 71(4), 363-392.
- Brown, K. (2002). Innovations for conservation and development. *The geographical journal*, 168(1), 6-17.
- Brundtland, G. H. (1985). World commission on environment and development. *Environmental policy and law*, 14(1), 26-30.
- Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done? *Qualitative research*, 6(1), 97-113.
- Bstieler, L. (2005). The moderating effect of environmental uncertainty on new product development and time efficiency. *Journal of Product Innovation Management*, 22(3), 267-284.
- Burrell, G., & Morgan, G. (1979). Sociological paradigms and organisational analysis. *Elements of the sociology of corporate life*.
- Burns, T., & Stalker, G. M. (1961). The Management of Innovation, Tavistock Institute. *London. England*.
- Campbell, M. C. (1999). Perceptions of price unfairness: antecedents and consequences. *Journal of marketing research*, 187-199.
- Cannon, J. P., & Perreault Jr, W. D. (1999). Buyer-seller relationships in business markets. *Journal of marketing research*, 439-460.
- Carter, C. R., & Liane Easton, P. (2011). Sustainable supply chain management: evolution and future directions. *International journal of physical distribution & logistics management*, 41(1), 46-62.
- Carter, C. R., & Rogers, D. S. (2008). A framework of sustainable supply chain management: moving toward new theory. *International journal of physical distribution & logistics management*, 38(5), 360-387.

- Cashore, B. W., Auld, G., & Newsom, D. (2004). *Governing through markets: Forest certification and the emergence of non-state authority*. Yale University Press.
- Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*. John Wiley & Sons Australia.
- Celly, K. S., & Frazier, G. L. (1996). Outcome-based and behavior-based coordination efforts in channel relationships. *Journal of marketing research*, 200-210.
- Cenfetelli, R. T., & Bassellier, G. (2009). Interpretation of formative measurement in information systems research. *Mis Quarterly*, 689-707.
- Chandler. A. D. (1962). *Sircilegv and Slriiclure*. Cambridge. MA: MIT Press
- Chen, C., & Chou, S. W. (2009). Impact of Environmental Uncertainty and Organizational. *Pacific Asia Journal of the Association for Information Systems*, 1(4), 2.
- Chen, I. J., & Paulraj, A. (2004). Towards a theory of supply chain management: the constructs and measurements. *Journal of operations management*, 22(2), 119-150
- Chen, J., Reilly, R. R., & Lynn, G. S. (2005). The impacts of speed-to-market on new product success: the moderating effects of uncertainty. *IEEE Transactions on engineering management*, 52(2), 199-212.
- Childerhouse, P., & Towill, D. R. (2004). Reducing uncertainty in European supply chains. *Journal of Manufacturing Technology Management*, 15(7), 585-598.
- Childerhouse, P., Disney, S. M., & Towill, D. R. (2008). On the impact of order volatility in the European automotive sector. *International Journal of Production Economics*, 114(1), 2-13.
- Chin, W. W. (1995). Partial least squares is to LISREL as principal components analysis is to common factor analysis. *Technology Studies*, 2(2), 315-319.
- Chin, W. W. (1998a). The partial least squares approach to structural equation modeling. *Modern methods for business research*, 295(2), 295-336.
- Chin, W. W. (1998b). Commentary: Issues and opinion on structural equation modeling.

- Chin, W. W. (2010). How to write up and report PLS analyses. In *Handbook of partial least squares* (pp. 655-690). Springer Berlin Heidelberg.
- Chin, W. W., Marcolin, B. L. & Newsted, P. R. (1996). A Partial Least Squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and voice mail emotion/adoption study. In paper presented *In Proceedings of the Seventeenth International Conference on Information Systems*. Cleveland, Ohio.
- 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.
- Choi, S., & Mattila, A. S. (2009). Perceived fairness of price differences across channels: The moderating role of price frame and norm perceptions. *Journal of Marketing Theory and Practice*, 17(1), 37-48.
- Chou, C. J., Chen, C. W., & Conley, C. (2012). A systematic approach to generate service model for sustainability. *Journal of Cleaner Production*, 29, 173-187.
- Chowdhury, M. M. H., & Quaddus, M. A. (2015). A multiple objective optimization based QFD approach for efficient resilient strategies to mitigate supply chain vulnerabilities: The case of garment industry of Bangladesh. *Omega*, 57, 5-21.
- Christopher, M., & Peck, H. (2004). Building the resilient supply chain. *The international journal of logistics management*, 15(2), 1-14.
- Clarkson, N., & Kulkarni, K. G. (2011). Effects of India's trade policy on rice production and exports.
- Cohen, J. R., Pant, L. W., & Sharp, D. J. (1998). The effect of gender and academic discipline diversity on the ethical evaluations, ethical intentions and ethical orientation of potential public accounting recruits. *Accounting Horizons*, 12(3), 250.
- Colbert, B., Wheeler, D., & Freeman, R. E. (2003). Focusing on Value: Reconciling Corporate Social Responsibility, Stakeholder Theory and Sustainability in a Network World. *Journal of General Management*, 28(3), 1-28.

- Coltman, T., Devinney, T. M., Midgley, D. F., & Venaik, S. (2008). Formative versus reflective measurement models: Two applications of formative measurement. *Journal of Business Research*, 61(12), 1250-1262.
- Core, J. E., Guay, W. R., & Rusticus, T. O. (2006). Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations. *The Journal of Finance*, 61(2), 655-687.
- Costanza, R., Andrade, F., Antunes, P., Van Den Belt, M., Boersma, D., Boesch, D. F., & Molitor, M. (1998). Principles for sustainable governance of the oceans. *Science*, 281(5374), 198-199.
- Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic management journal*, 10(1), 75-87.
- Cox, A., Ireland, P., Lonsdale, C., Sanderson, J., & Watson, G. (2003). *Supply chains, markets and power: Managing buyer and supplier power regimes* (Vol. 18). SUNY Press.
- Creed, W. D., Miles, R. E., Kramer, R. M., & Tyler, T. R. (1996). Trust in organizations. *Trust in organizations: Frontiers of theory and research*, 16-38.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage publications.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of management*, 31(6), 874-900.
- Crosby, L. A., Evans, K. R., & Cowles, D. (1990). Relationship quality in services selling: an interpersonal influence perspective. *The journal of marketing*, 68-81.
- Crosthwaite, J. (2004). Driver research phase background report 6: Factors Influencing Agriculture Agribusiness, Landscape and regions. *Drivers of land use and change*, Department of Sustainability and Environment, Melbourne, Australia
- Cruz, R. V., Harasawa, H., Lal, M., & Wu, S. (2007). Chapter 10 Asia: Climate Change 2007: Impacts, Adaptation and Vulnerability IPCC Fourth Assessment Report: Working Group II Report Cambridge, UK.
- Cui, W. W. (2003). Reducing error in mail surveys. *Practical assessment, research & evaluation*, 8(18), 1-5.

- Cummings, T. G. (1984). Transorganizational development. *Research in organizational behavior*, 6, 367-422.
- Darwin, R., Tsigas, M. E., Lewandrowski, J., & Raneses, A. (1995). *World agriculture and climate change: Economic adaptations* (No. 33933). United States Department of Agriculture, Economic Research Service.
- Dasgupta, P., & Heal, G. (1974). The optimal depletion of exhaustible resources. *The review of economic studies*, 41, 3-28.
- Dauvergne, P. (2008). The shadows of consumption. *Consequences for the Global Environment*.
- Dauvergne, P., & Lister, J. (2012). Big brand sustainability: Governance prospects and environmental limits. *Global Environmental Change*, 22(1), 36-45.
- David, C. C., & Huang, J. (1996). Political economy of rice price protection in Asia. *Economic Development and Cultural Change*, 44(3), 463-483.
- David, R. J., & Han, S. K. (2004). A systematic assessment of the empirical support for transaction cost economics. *Strategic management journal*, 25(1), 39-58.
- Davis, T. (1993). Effective supply chain management. *Sloan management review*, 34(4), 35.
- Davos, C. A. (1998). Sustaining co-operation for coastal sustainability. *Journal of environmental management*, 52(4), 379-387.
- De Toni, A. (1999). Buyer-supplier operational practices, sourcing policies and plant performances: results of an empirical research. *International Journal of Production Research*, 37(3), 597-619.
- Delgado, C., Rosegrant, M., Steinfeld, H., Ehui, S., & Courbois, C. (2001). Livestock to 2020: the next food revolution. *Outlook on Agriculture*, 30(1), 27-29.
- Delgado, C., Rosegrant, M., Steinfeld, H., Ehui, S., & Courbois, C. (2001). Livestock to 2020: the next food revolution. *Outlook on Agriculture*, 30(1), 27-29.
- DeSarbo, W. S., Anthony Di Benedetto, C., Song, M., & Sinha, I. (2005). Revisiting the Miles and Snow strategic framework: uncovering interrelationships between strategic types, capabilities, environmental uncertainty, and firm performance. *Strategic Management Journal*, 26(1), 47-74.

- Deutsch, M. (1958). Trust and suspicion. *Journal of conflict resolution*, 265-279.
- Devuyst, D., Hens, L., & De Lannoy, W. (2001). *How green is the city? Sustainability assessment and the management of urban environments*. Columbia University Press.
- Diamantopoulos, A., & Winklhofer, H. M. (2001). Index construction with formative indicators: An alternative to scale development. *Journal of marketing research*, 38(2), 269-277.
- Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management science*, 35(12), 1504-1511.
- Dietz, T., Ostrom, E., & Stern, P. C. (2003). The struggle to govern the commons. *Science*, 302(5652), 1907-1912.
- Diller, H. (2000). Customer loyalty: fata morgana or realistic goal? Managing relationships with customers. In *Relationship marketing* (pp. 29-48). Springer Berlin Heidelberg.
- Dillman, D. A. (1978). *Mail and telephone surveys* (Vol. 3). Wiley Interscience.
- Dodgson, M. (1993). Learning, trust, and technological collaboration. *Human relations*, 46(1), 77-95.
- Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review*, 20(1), 65-91.
- Doney, P. M., & Cannon, J. P. (1997). An examination of the nature of trust in buyer-seller relationships. *the Journal of Marketing*, 35-51.
- Downey, H. K., Hellriegel, D., & Slocum Jr, J. W. (1975). Environmental uncertainty: The construct and its application. *Administrative science quarterly*, 613-629.
- Duncan, R. B. (1972). Characteristics of organizational environments and perceived environmental uncertainty. *Administrative science quarterly*, 313-327.
- Duncan, T., & Moriarty, S. E. (1998). A communication-based marketing model for managing relationships. *The Journal of marketing*, 1-13.

- Durnev, A. (2010, December). The real effects of political uncertainty: Elections and investment sensitivity to stock prices. In *Paris December 2010 Finance Meeting EUROFIDAI-AFFI*.
- Duxbury, J., & Dickinson, S. (2007). Principles for sustainable governance of the coastal zone: in the context of coastal disasters. *Ecological Economics*, 63(2), 319-330.
- Dwyer, F. R., & Walker Jr, O. C. (1981). Bargaining in an asymmetrical power structure. *The Journal of Marketing*, 104-115.
- Dwyer, F. R., Schurr, P. H., & Oh, S. (1987). Developing buyer-seller relationships. *The Journal of marketing*, 11-27.
- Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of management review*, 23(4), 660-679.
- Eden, L., & Hampson, F. O. (1997). Clubs are trump: the formation of international regimes in the absence of a hegemon. *Contemporary capitalism: The embeddedness of institutions*, 361-94.
- Ekwueme, C. M., Egbunike, C. F., & Onyali, C. I. (2013). Benefits of triple bottom line disclosures on corporate performance: An exploratory study of corporate stakeholders. *Journal of Management and Sustainability*, 3(2), 79.
- El-Ansary, A. I., & Stern, L. W. (1972). Power measurement in the distribution channel. *Journal of Marketing research*, 47-52.
- Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California management review*, 36(2), 90-100.
- Elkington, J. (1997). Cannibals with forks. *The triple bottom line of 21st century*.
- Elkington, J. (1998). Partnerships from cannibals with forks: The triple bottom line of 21st-century business. *Environmental Quality Management*, 8(1), 37-51.
- Elkington, J. (2004). Enter the triple bottom line. *The triple bottom line: Does it all add up*, 11(12), 1-16.

- Ellram, L. M. (1995). A managerial guideline for the development and implementation of purchasing partnerships. *International Journal of Purchasing and Materials Management*, 31(1), 9-16.
- Emerson, R. M. (1962). Power-dependence relations. *American sociological review*, 31-41.
- Environmental Defense Fund (2011). Walmart: Our Seven Areas of Focus at <http://business.edf.org/projects/walmart/walmart-our-seven-areas-focus>.
- Espejel, J., Fandos, C., & Flavian, C. (2008). Consumer satisfaction: A key factor of consumer loyalty and buying intention of a PDO food product. *British Food Journal*, 110(9), 865-881.
- Etgar, M. (1976). Channel domination and countervailing power in distributive channels. *Journal of marketing research*, 254-262.
- Etgar, M. (1979). Sources and types of intra-channel conflict. *Journal of retailing*, 55(1), 61-78.
- Fakir, H. (2015, December 25). Problem in agricultural marketing channel (Dairy Industry). (Researcher, Interviewer) Chittagong.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. University of Akron Press.
- FAO (1994) Mangrove forest management guidelines. FAO Forestry Paper 117. Rome, pp 320
- FAO (2006). Livestock's long shadow: Environmental issues and options. *Rome:[sn]*.
- FAO (2010). Greenhouse gas emissions from the dairy sector: A life cycle assessment. Rome: Food and Agriculture Organization
- FAO (2013). *Development of integrated dairy schemes in Herat*. GCP/AFG/046/ITA. Report of Final Review Mission 9–25 December 2012. Rome, Office of Evaluation, FAO.
- FAO (2014). Developing sustainable food value chains – Guiding principles. *Rome*
- Fawcett, S. E., & Magnan, G. M. (2001). *Achieving world-class supply chain alignment: benefits, barriers, and bridges*. Tempe, AZ: Center for Advanced Purchasing Studies.

- Fawcett, S. E., Ellram, L. M., & Ogden, J. A. (2007). *Supply chain management: from vision to implementation*. Prentice Hall.
- Fisk, G. (1967). *Marketing systems: An introductory analysis*. Harper & Row
- Flynn, B. B., Sakakibara, S., Schroeder, R. G., Bates, K. A., & Flynn, E. J. (1990). Empirical research methods in operations management. *Journal of operations management*, 9(2), 250-284.
- Folke, C. (2006). Resilience: The emergence of a perspective for social-ecological systems analyses. *Global environmental change*, 16(3), 253-267.
- Folke, C., Hahn, T., Olsson, P., & Norberg, J. (2005). Adaptive governance of social-ecological systems. *Annu. Rev. Environ. Resour.*, 30, 441-473..
- Foran, B., Lenzen, M., Dey, C., & Bilek, M. (2005). Integrating sustainable chain management with triple bottom line accounting. *Ecological Economics*, 52(2), 143-157.
- Ford, D., Gadde, L. -E., Ha°kansson, H., Lundgren, A., Snehota, I., Turnbull, P., & Wilson, D. (1988). *Managing business relationships*. West Sussex, England' John Wiley and Sons.
- Fornell, C. (1992). A national customer satisfaction barometer: The Swedish experience. *the Journal of Marketing*, 6-21.
- Fornell, C., & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing research*, 440-452.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 39-50.
- Fornell, C., Lorange, P., & Roos, J. (1990). The cooperative venture formation process: A latent variable structural modeling approach. *Management science*, 36(10), 1246-1255.
- Frazer, L., & Lawley, M. (2000). *Questionnaire administration and design: A practical guide*.

- Frazier, G. L. (1983). Interorganizational exchange behavior in marketing channels: a broadened perspective. *The Journal of Marketing*, 68-78.
- Frazier, G. L. (1983). On the measurement of interfirm power in channels of distribution. *Journal of Marketing research*, 158-166.
- Frazier, G. L., & Rody, R. C. (1991). The use of influence strategies in interfirm relationships in industrial product channels. *The Journal of Marketing*, 52-69.
- Frazier, G. L., Spekman, R. E., & O'neal, C. R. (1988). Just-in-time exchange relationships in industrial markets. *The Journal of Marketing*, 52-67.
- Frazier, G.L., & Summers, J.O., (1984). Inter-firm influence strategies and their application with distribution channels. *Journal of Marketing* 48 (03), 43–55.
- Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Boston, MA: Pitman.
- French, J. R., Raven, B., & Cartwright, D. (1959). The bases of social power. *Classics of organization theory*, 311-320.
- Fuchs, D. A. (2007). *Business power in global governance* (pp. 139-158). Boulder, CO: Lynne Rienner.
- Fullerton, G. (2003). When does commitment lead to loyalty? *Journal of service research*, 5(4), 333-344.
- Gaddis, E. B., Miles, B., Morse, S., & Lewis, D. (2007). Full-cost accounting of coastal disasters in the United States: Implications for planning and preparedness. *Ecological Economics*, 63(2), 307-318.
- Galbraith, J. R. (1973). *Designing complex organizations*. Addison-Wesley Longman Publishing Co., Inc.
- Gambetta, D. (1988). Mafia: the price of distrust. In Trust- making and Braking Relationships, (ed). D. Gambetta. *Basil Blackwll, Oxford*, 213-238.
- Ganesan, S. (1994). Determinants of long-term orientation in buyer-seller relationships. *The Journal of Marketing*, 1-19.
- Garbarino, E., & Johnson, M. S. (1999). The different roles of satisfaction, trust, and commitment in customer relationships. *The Journal of Marketing*, 70-87.

- Gaski, J. F. (1984). The theory of power and conflict in channels of distribution. *The Journal of Marketing*, 9-29
- Gefen, D., Straub, D., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the association for information systems*, 4(1), 7.
- Geum, Y., & Park, Y. (2011). Designing the sustainable product-service integration: a product-service blueprint approach. *Journal of Cleaner Production*, 19(14), 1601-1614.
- Geyskens, I., & Steenkamp, J. B. E. (1995). An investigation into the joint effects of trust and dependence on relationship commitment.
- Geyskens, I., Steenkamp, J. B. E., & Kumar, N. (1999). A meta-analysis of satisfaction in marketing channel relationships. *Journal of marketing Research*, 223-238.
- Gillan, S. L. (2006). Recent developments in corporate governance: An overview. *Journal of corporate finance*, 12(3), 381-402.
- Gladstein, D. L. (1984). Groups in context: A model of task group effectiveness. *Administrative science quarterly*, 499-517.
- Gladwin, T. N., Kennelly, J. J., & Krause, T. S. (1995). Shifting paradigms for sustainable development: Implications for management theory and research. *Academy of management Review*, 20(4), 874-907.
- Global Reporting Initiative (GRI), (2002). Sustainability Reporting Guidelines: 92. Global Reporting Initiative: *Amsterdam*.
- Global Reporting Initiative (GRI), (2006). Sustainability Reporting Guidelines. *GRI Amsterdam, The Netherlands*.
- Global Reporting Initiative (GRI), (2011). *Sustainability reporting guidelines*. <https://www.globalreporting.org/resource/library/G3.1-Guidelines-Incl-Technical-Protocol.pdf> (accessed on 2nd June 2013)
- Glover, J. (1994). Profiting through trust. *International Management*, 38-40.
- Goletti, F., & Minot, N. (1997). *Rice markets, agricultural growth, and policy options in Viet Nam* (No. 14). International Food Policy Research Institute (IFPRI).

- Gompers P.A., Ishii J.L., & Metrick, A. (2003). *Corporate governance and equity prices*. Quarterly. J. Econ. 118(1): 107 -155.
- Goodman, L. E., & Dion, P. A. (2001). The determinants of commitment in the distributor–manufacturer relationship. *Industrial Marketing Management*, 30(3), 287-300.
- Govindarajan, V. (1986). Decentralization, strategy, and effectiveness of strategic business units in multi business organizations. *Academy of Management Review*, 11(4), 844-856.
- Greenbaum, H. H., Holden, E. J., & Spataro, L. (1983). Organizational structure and communication processes: A study of change. *Group & Organization Management*, 8(1), 61-82.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, 11(3), 255-274.
- Gregory, R., & Wellman, K. (2001). Bringing stakeholder values into environmental policy choices: a community-based estuary case study. *Ecological Economics*, 39(1), 37-52.
- Grönroos, C. (1983), *Strategic Management and Marketing in the Service Sector*, Marketing Science Institute, Cambridge, MA.
- Grönroos, C. (1989). *A relationship approach to marketing: the need for a new paradigm*. na.
- Gronroos, C. (1990). Relationship approach to marketing in service contexts: The marketing and organizational behavior interface. *Journal of business research*, 20(1), 3-11.
- Grönroos, C. (1992). Quo vadis, marketing? Towards a neo-classical marketing theory. *Economics and Marketing. Essays in Honour of Gösta Mickwitz, Economy and Society*, (48), 109-24.
- Grönroos, C. (1994). From marketing mix to relationship marketing: towards a paradigm shift in marketing. *Management decision*, 32(2), 4-20.

- Grönroos, C. (1995). *The rebirth of modern marketing: Six propositions about relationship marketing*. Swedish School of Economics and Business Administration.
- Groves, R. M. (2006). Nonresponse rates and nonresponse bias in household surveys. *Public opinion quarterly*, 70(5), 646-675.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, 2(163-194), 105.
- Gulbrandsen, L. H. (2010). *Transnational environmental governance: the emergence and effects of the certification of forest and fisheries*. Edward Elgar Publishing.
- Gummesson, E. (1987). The new marketing—developing long-term interactive relationships. *Long range planning*, 20(4), 10-20.
- Gundlach, G. T., Achrol, R. S., & Mentzer, J. T. (1995). The structure of commitment in exchange. *The Journal of Marketing*, 78-92.
- Gupta, A. K. (1986). Matching managers to strategies: Point and counterpoint. *Human Resource Management*, 25(2), 215-234.
- Gupta, M. C. (1995). Environmental management and its impact on the operations function. *International Journal of Operations & Production Management*, 15(8), 34-51.
- Gyau, A. & Spiller, A. (2010). The Influence of Price and Relational Behaviours on the Relationship Quality in the German Dairy Industry. *British Food Journal* (In Press).
- Gyau, A., & Spiller, A. (2008). The impact of supply chain governance structures on the inter-firm relationship performance in agribusiness. *ZEMEDELSKA EKONOMIKA-PRAHA*-, 54(4), 176.
- Hahn, C. K., Kim, K. H., & Kim, J. S. (1986). Costs of competition: implications for purchasing strategy. *Journal of Purchasing and Materials Management*, 22(4), 2-7.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2013). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks: Sage.

- Hair, J. F., Jr., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning*, 46(1/2), 1–12.
- 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., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the academy of marketing science*, 40(3), 414-433.
- Hakansson, H. (1982). International marketing and purchasing of industrial goods: An interaction approach. *Hampshire: John Wiley & Sons*.
- Hakansson, H. (1989). Corporate Technological Behavior, Co-operative and Networks. *Routledge, London*.
- Halder, S., Urey, I., & Barua, P. (2003). Patterns and Trends in Food Consumption in Poor Urban and Rural Households in Bangladesh: The Field Survey Results. *Research and Evaluation Division, Bangladesh Rural Advancement Committee (BRAC): Dhaka, Bangladesh*, 84.
- Halinen, A. (1994). *Exchange relationships in professional services: A study of relationship development in the advertising sector*. Turku school of economics and business administration.
- Hallén, L., & Sandström, M. (1991). *Relationship atmosphere in international business*. Företagsekonomiska Institutionen vid Uppsala Universitet.
- Hallen, L., Johanson, J., & Seyed-Mohamed, N. (1991). Interfirm adaptation in business relationships. *The Journal of Marketing*, 29-37.
- Han, J. K., Kim, N., & Srivastava, R. K. (1998). Market orientation and organizational performance: is innovation a missing link?. *The Journal of marketing*, 30-45.
- Han, S. L., & Wilson, D. T. (1993). Antecedents of buyer commitment to a supplier: A model of structural bonding and social bonding. *Unpublished paper, Marketing Department, Pennsylvania State University, University Park*.
- Han, S.L., Wilson, D.T. & Dant, S. P. (1993). Buyer-seller Relationships Today. *Industrial Marketing Management* 22, 331-338.

- Hanson, D., & Grimmer, M. (2007). The mix of qualitative and quantitative research in major marketing journals, 1993-2002. *European Journal of Marketing*, 41(1/2), 58-70.
- Hardwick, B., & Ford, D. (1986). Industrial buyer resources and responsibilities and the buyer-seller relationships. *Industrial Marketing and Purchasing*, 1(3), 3-26.
- Harrison, R. L., & Reilly, T. M. (2011). Mixed methods designs in marketing research. *Qualitative Market Research: An International Journal*, 14(1), 7-26.
- Heberlein, T. A., & Baumgartner, R. (1978). Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. *American Sociological Review*, 447-462.
- Heide, J. B. (1994). Interorganizational governance in marketing channels. *The Journal of Marketing*, 71-85.
- Heide, J. B., & John, G. (1990). Alliances in industrial purchasing: The determinants of joint action in buyer-supplier relationships. *Journal of marketing Research*, 24-36.
- Heide, J. B., & John, G. (1992). Do norms matter in marketing relationships?. *The Journal of Marketing*, 32-44.
- Heide, J. B., & Miner, A. S. (1992). The shadow of the future: Effects of anticipated interaction and frequency of contact on buyer-seller cooperation. *Academy of management journal*, 35(2), 265-291.
- Heide, J. B., & Wathne, K. H. (2006). Friends, businesspeople, and relationship roles: A conceptual framework and a research agenda. *Journal of Marketing*, 70(3), 90-103.
- Heiens, R. A. (2000). Market orientation: toward an integrated framework. *Academy of Marketing Science Review*, 2000, 1.
- Hennig-Thurau, T., Gwinner, K. P., & Gremler, D. D. (2002). Understanding relationship marketing outcomes an integration of relational benefits and relationship quality. *Journal of service research*, 4(3), 230-247.
- Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, 28(2), 565-580.

- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in international marketing*, 20(1), 277-319.
- Herbig, P., & Milewicz, J. (1993). The relationship of reputation and credibility to brand success. *Journal of Consumer Marketing*, 10(3), 18-24.
- Hingley, M. K. (2005). Power to all our friends? Living with imbalance in supplier–retailer relationships. *Industrial Marketing Management*, 34(8), 848-858.
- Hodges, T. (1991). Temperature and water stress effects on phenology. *Predicting crop phenology*, 7-13
- Hoffman, J., Sabo, D., Bliss, J., & Hoy, W. (1994). Building a culture of trust. *Journal of school Leadership*, 4(9), 484-501.
- Holling, C. S. (1978). Adaptive environmental assessment and management.
- Holtari, T. & Saarikangas, M. (1994). Katta paalle Kaukalon aarella (Hand-shaking by the icehockey ring). *Finnish Business Journal Fakta* (1), 44-47.
- Hoogenboom, G. (2000). Contribution of agrometeorology to the simulation of crop production and its applications. *Agricultural and forest meteorology*, 103(1), 137-157.
- Hoque, D. A. (2009). *An Assessment of Climate Change on ADP of Bangladesh*. Dhaka: Economic Research Group.
- Hossan, C. G., Sarker, M. A. R., & Afroze, R. (2012). Recent Unrest in the RMG Sector of Bangladesh: Is this an Outcome of Poor Labour Practices? *International Journal of Business and Management*, 7(3), 206.
- Hoy, W. K., & Sabo, D. J. (1998). *Quality Middle Schools: Open and Healthy*. Corwin Press, Inc., 2455 Teller Road, Thousand Oaks, CA 91320-2218 (paperback: ISBN-0-8039-6421-8, \$24.95; cloth: ISBN-0-8039-6420-X, \$55.95).
- Hoy, W. K., & Tschannen-Moran, M. (1999). Five faces of trust: An empirical confirmation in urban elementary schools. *Journal of School leadership*, 9, 184-208.

- Hsiao, H. I., van der Vorst, J. G., & Omta, S. W. F. (2006). Logistics outsourcing in food supply chain networks: Theory and practices. *International agri-food chains and networks*, 135.
- Hsiao, H., Kemp, R. G. M., Van der Vorst, J. G. A. J., & Omta, S. O. (2010). A classification of logistic outsourcing levels and their impact on service performance: Evidence from the food processing industry. *International Journal of Production Economics*, 124(1), 75-86.
- Hulland, J., & Richard Ivey School of Business. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, 20(2), 195-204.
- Hunt, S. D. (1994). On rethinking marketing: our discipline, our practice, our methods. *European Journal of Marketing*, 28(3), 13-25
- Hunt, S. D., & Nevin, J. R. (1974). Power in a channel of distribution: sources and consequences. *Journal of marketing Research*, 186-193.
- Hutt, M.D. and Speh, T.W. (1995), Business Marketing Management, 5th Edition, Dryden Press, Chicago, IL.
- Iacobucci, D., Saldanha, N., & Deng, X. (2007). A meditation on mediation: Evidence those structural equations models perform better than regressions. *Journal of Consumer Psychology*, 17(2), 140-154.
- Ilbery, B., & Maye, D. (2005). Food supply chains and sustainability: evidence from specialist food producers in the Scottish/English borders. *Land Use Policy*, 22(4), 331-344.
- International Development Research Centre (2000). *A Handbook for Value Chain Research*. Ottawa: IDRC.
- IRRI, (2007). Rice around the World in Rice Almanac. *Los Banos, Philippines*
- Jabbar, M. A. (2010). *Policy barriers for dairy value chain development in Bangladesh with a focus on the northwest region*. CARE Bangladesh.
- Jackson, A., Boswell, K., & Davis, D. (2011). Sustainability and triple bottom line reporting-What is it all about. *International Journal of Business, Humanities and Technology*, 1(3), 55-59.

- Jackson, B. B. (1985). *Build customer relationships that last* (Vol. 11, pp. 120-128). Harvard Business Review.
- Jackson, B. B., & Bund, B. (1985). *Winning and keeping industrial customers: The dynamics of customer relationships*. Free Press.
- Jackson, E. L. (2008). *Behavioural determinants of the adoption of forward contracts by Western Australian wool producers* (Doctoral dissertation, Curtin University of Technology, Curtin Business School, Graduate School of Business.).
- Jap, S. D., & Ganesan, S. (2000). Control mechanisms and the relationship life cycle: Implications for safeguarding specific investments and developing commitment. *Journal of marketing research*, 37(2), 227-245.
- Jarvis, C. B., MacKenzie, S. B., & Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of consumer research*, 30(2), 199-218.
- Javidan, M. (1984). Research note and communication. The impact of environmental uncertainty on long-range planning practices of the US savings and loan industry. *Strategic Management Journal*, 5(4), 381-392.
- Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: antecedents and consequences. *The Journal of marketing*, 53-70.
- Jayne, T. S. (1993). *Sources and effects of instability in the world rice market* (No. 54059). Michigan State University, Department of Agricultural, Food, and Resource Economics.
- Jevons, W. S. (1906). *The coal question: an inquiry concerning the progress of the nation, and the probable exhaustion of our coal-mines*. Macmillan.
- Johnson, R. A., & Greening, D. W. (1999). The effects of corporate governance and institutional ownership types on corporate social performance. *Academy of Management Journal*, 42(5), 564-576.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, 33(7), 14-26.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of mixed methods research*, 1(2), 112-133.

- Jones, D. (2005). 'Dow Jones sustainability world indexes guide v. 7.0. *available at: www. Sustainability-indexes. com (accessed 5 March 2007).*
- Jordan, A., Wurzel, R. K., & Zito, A. R. (Eds.). (2004). *New Instruments of Environmental Governance?: National Experiences and Prospects*. Routledge.
- Judd, C. M., & Kenny, D. A. (1981). Process analysis estimating mediation in treatment evaluations. *Evaluation review*, 5(5), 602-619.
- Jusoh, R. (2010). The influence of perceived environmental uncertainty, firm size, and strategy on multiple performance measures usage. *African Journal of Business Management*, 4(10), 1972.
- Jüttner, U., & Maklan, S. (2011). Supply chain resilience in the global financial crisis: an empirical study. *Supply Chain Management: An International Journal*, 16(4), 246-259.
- Kamal, M. M., & Islam, M. S. (2012, July). Marketing Cost and Price Spread of Liquid Milk in Bangladesh: A Study on Chittagong District. *The Cost and Management*, XL(4), 38-43.
- Kaman, D. J.F. (1993) Trust, dependence and opportunism in a network: the rise and fall of a charter carrier. Paper presented at the 9th IMP Conference
- Kaplan, R.S., Norton, D.P. (1993). Putting the balanced scorecard to work. *Harvard Business Review*, 71(5).
- Kaynak, E. (1986). *World food marketing systems*. Butterworths.
- Ke, W., Liu, H., Wei, K. K., Gu, J., & Chen, H. (2009). How do mediated and non-mediated powers affect electronic supply chain management system adoption? The mediating effects of trust and institutional pressures. *Decision Support Systems*, 46(4), 839-851.
- Kelle, U. (2006). Combining qualitative and quantitative methods in research practice: purposes and advantages. *Qualitative research in psychology*, 3(4), 293-311.
- Kelley, H. H. & John W. T., (1978), *Interpersonal Re-lations: A Theory of Interdependence*. New York: John Wiley & Sons.
- Kelley, S. W., Donnelly, J. H., & Skinner, S. J. (1990). Customer participation in service production and delivery. *Journal of retailing*, 66(3), 315-335.

- Kemp, R., & Martens, P. (2007). Sustainable development: how to manage something that is subjective and never can be achieved? *Sustainability: Science, Practice, & Policy*, 3(2).
- Kemp, R., Parto, S., & Gibson, R. B. (2005). Governance for sustainable development: moving from theory to practice. *International Journal of Sustainable Development*, 8(1-2), 12-30.
- Knecht, R. W., & Archer, J. (1993). 'Integration' in the US coastal zone management program. *Ocean & coastal management*, 21(1-3), 183-199.
- Konovsky, M. A., & Cropanzano, R. (1991). Perceived fairness of employee drug testing as a predictor of employee attitudes and job performance. *Journal of applied psychology*, 76(5), 698.
- Kooiman, J. (Ed.). (1993). *Modern governance: new government-society interactions*. Sage.
- Kotler, P., Brown, L., Adam, S. & Arsmtrong, G. (2006). Marketing, 7th ed., *Pearson Prentice-Hall, Sydney*.
- Kumar, N., Hibbard, J. D., & Stern, L. W. (1994). The nature and consequences of marketing channel intermediary commitment. *REPORT-MARKETING SCIENCE INSTITUTE CAMBRIDGE MASSACHUSETTS*.
- Lado, A. A., Dant, R. R., & Tekleab, A. G. (2008). Trust-opportunism paradox, relationalism, and performance in interfirm relationships: evidence from the retail industry. *Strategic Management Journal*, 29(4), 401-423.
- Lagerspetz, O. (1998). *Trust: The tacit demand* (Vol. 1). Springer Science & Business Media.
- Lai, K. H., Bao, Y., & Li, X. (2008). Channel relationship and business uncertainty: Evidence from the Hong Kong market. *Industrial Marketing Management*, 37(6), 713-724.
- Larson, A. (1992). Network dyads in entrepreneurial settings: A study of the governance of exchange relationships. *Administrative science quarterly*, 76-104.

- Larzelere, R. E., & Huston, T. L. (1980). The dyadic trust scale: Toward understanding interpersonal trust in close relationships. *Journal of Marriage and the Family*, 595-604.
- Law, K. S., Wong, C. S., & Mobley, W. M. (1998). Toward taxonomy of multidimensional constructs. *Academy of management review*, 23(4), 741-755.
- Lawrence, P. R., & Lorsch, J. W. (1986). Organization and environment: managing differentiation and integration (Harvard Business School Classics).
- Lawrence, P. R., & Lorsch, J. W. Organization and Environment, Irwin, Homewood, Ill., 1967. *Lawrence Organization and Environment* 1967.
- Layton, L. Y. N. D. S. E. Y. (2011). Wal-mart turns to 'retail regulation'. *The Washington Post*, 27, A04.
- Lee, D. Y. (2001). Power, conflict and satisfaction in IJV supplier—Chinese distributor channels. *Journal of Business Research*, 52(2), 149-160.
- Lehrer, M., Tylecote, A., & Conesa, E. (1999). Corporate governance, innovation systems and industrial performance. *Industry and Innovation*, 6(1), 25-50.
- Leonidou, L. C., Talias, M. A., & Leonidou, C. N. (2008). Exercised power as a driver of trust and commitment in cross-border industrial buyer–seller relationships. *Industrial Marketing Management*, 37(1), 92-103.
- Leung, T. K. P., Lai, K. H., Chan, R. Y., & Wong, Y. H. (2005). The roles of xinyong and guanxi in Chinese relationship marketing. *European Journal of Marketing*, 39(5/6), 528-559.
- Levinthal, D. A. (1997). Adaptation on rugged landscapes. *Management science*, 43(7), 934-950.
- Lewis, J. D., & Weigert, A. (1985). Trust as a social reality. *Social forces*, 63(4), 967-985.
- Li, S. (2002). An Integrated Model for Supply Chain Management Practice. *Performance and Competitive Advantage*, University of Toledo, Toledo, OH.
- Lister, J. (2012). *Corporate social responsibility and the state: International approaches to forest co-regulation*. UBC Press.

- Livestock, D. (2016). *Livestock Economy at a Glance 2015-16*. Dhaka: Department of Livestock. Retrieved September 02, 2016, from [http://dls.portal.gov.bd/sites/default/files/files/dls.portal.gov.bd/page/5f7daa39_d71f4546_aeaf_55b_72ee868f2/updatd%20Livestock%20Economy%20\(2015-2016\).pdf](http://dls.portal.gov.bd/sites/default/files/files/dls.portal.gov.bd/page/5f7daa39_d71f4546_aeaf_55b_72ee868f2/updatd%20Livestock%20Economy%20(2015-2016).pdf)
- Livestock, M. (2012, August 26). Poultry and Dairy Farm Size as per Number of Cow or Check. *Dairy and Poultry Private Farms Registration and Renew*. Dhaka, Bangladesh: Ministry of Fisher's and Livestock, People's Republic of Bangladesh. Retrieved from [www. mofl.gov.bd](http://www.mofl.gov.bd)
- Lohmöller, J. B. (1989). Predictive vs. Structural Modeling: PLS vs. ML. In *Latent Variable Path Modeling with Partial Least Squares* (pp. 199-226). Physica-Verlag HD.
- Lorenz, E. H. (1991). Neither friends nor strangers: Informal networks of subcontracting in French industry. *Markets, hierarchies and networks: the coordination of social life*, 183-191.
- Lusch, R. F., & Brown, J. R. (1982). A modified model of power in the marketing channel. *Journal of marketing research*, 312-323.
- Macaulay, S. (1963). Non-contractual relations in business: A preliminary study. *American sociological review*, 55-67.
- Mackenzie, K. D., & Nicosia, F. M. (1968). *Marketing systems: Toward formal descriptions and structural properties*. University of California.
- MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology*, 58, 593-614.
- Magrath, A. J., & Hardy, K. G. (1989). A conceptual framework for assessing the level of mutual trust between manufacturers and their resellers. In *Proceedings of the 5th IMP Conference*.
- Malhotra, N. K., J. Hall, M. A. Shaw, and Oppenheim, P. P. (2004). *Essentials of Marketing Research*. Australia: Pearson Prentice Hall.
- Maloni, M., & Benton, W. C. (2000). Power influences in the supply chain. *Journal of Business Logistics*, 21(1), 49-74.

- Malthus, T. R. (1976). *An Essay on the Principle of Population*. New York: Norton.
(Originally published in 1798.)
- Mannnan, M. A. (1975). *Principles of Marketing* (First ed.). Dacca: Royal Library.
- March, J. G. (1955). An Introduction to the Theory and Measurement of Influence. *American Political Science Review*, 49(02), 431-451.
- March, J. G. (1994). *Primer on decision making: How decisions happen*. Simon and Schuster.
- Marcus, A. A. (1981). Policy uncertainty and technological innovation. *Academy of Management Review*, 6(3), 443-448.
- Matzler, K., Renzl, B., & Faullant, R. (2007). Dimensions of price satisfaction: a replication and extension. *International Journal of Bank Marketing*, 25(6), 394-405.
- Maxwell, D., Sheate, W., & van der Vorst, R. (2006). Functional and systems aspects of the sustainable product and service development approach for industry. *Journal of Cleaner Production*, 14(17), 1466-1479.
- McGee, G. W., & Ford, R. C. (1987). Two (or more?) dimensions of organizational commitment: Reexamination of the affective and continuance commitment scales. *Journal of applied psychology*, 72(4), 638.
- McKinsey & Company. (2011). *The Business of Sustainability: McKinsey global survey results*. McKinsey Quarterly (October).
- Meade, A. W., Watson, A. M., & Kroustalis, C. M. (2007, April). Assessing common methods bias in organizational research. In *22nd annual meeting of the society for industrial and organizational psychology*, New York (pp. 1-10).
- Meadowcroft, J. (1997). Planning for sustainable development: Insights from the literatures of political science. *European Journal of Political Research*, 31(4), 427-454.
- Meadowcroft, J., Farrell, K. N., & Spangenberg, J. (2005). Developing a framework for sustainability governance in the European Union. *International Journal of Sustainable Development*, 8(1-2), 3-11.

- Meadows, D. H., Meadows, D. H., Randers, J., & Behrens Iii, W. W. (1972). *The limits to growth: A report to the club of Rome (1972)*. Universe Books, New York.
- Mebratu, D. (1998). Sustainability and sustainable development: historical and conceptual review. *Environmental impact assessment review*, 18(6), 493-520.
- Mendis, S., Mills, S., & Yantz, J. (2003). Building community capacity to adapt to climate change in resource-based communities. *Prepared for the Canadian Forest Service*.
- Mendoza, M. S., & Farris, P. L. (1992). The impact of changes in government policies on economic performance (the ARCH model). *Journal of Policy Modeling*, 14(2), 209-220.
- Mentzer, J. T., Min, S., & Zacharia, Z. G. (2000). The nature of interfirm partnering in supply chain management. *Journal of Retailing*, 76(4), 549-568.
- Miles, R. E., Snow, C. C., & Miles, G. (2000). The Future. org. *Long range planning*, 33(3), 300-321.
- Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J. (1978). Organizational strategy, structure, and process. *Academy of management review*, 3(3), 546-562.
- Miller, D. (1988). Relating Porter's business strategies to environment and structure: Analysis and performance implications. *Academy of management Journal*, 31(2), 280-308.
- Miller, D., & Friesen, P. H. (1978). Archetypes of strategy formulation. *Management science*, 24(9), 921-933.
- Miller, D., & Friesen, P. H. (1983). Strategy-making and environment: the third link. *Strategic management journal*, 4(3), 221-235.
- Miller, D., Dröge, C., & Toulouse, J. M. (1988). Strategic process and content as mediators between organizational context and structure. *Academy of Management Journal*, 31(3), 544-569.
- Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management review*, 12(1), 133-143.

- Min, S., & Mentzer, J. T. (2000). The role of marketing in supply chain management. *International Journal of Physical Distribution & Logistics Management*, 30(9), 765-787.
- Mitchell, I. K., & Saren, M. (2008). The living product—Using the creative nature of metaphors in the search for sustainable marketing. *Business Strategy and the Environment*, 17(6), 398-410.
- MOEA (1999). Taiwan Quick Response / Efficient Consumer Response Pilot Project. Ministry of Economic Affairs (MOEA).
- Mohr, J., & Nevin, J. R. (1990). Communication strategies in marketing channels: A theoretical perspective. *The Journal of Marketing*, 36-51.
- Mohr, J., & Spekman, R. (1994). Characteristics of partnership success: partnership attributes, communication behavior, and conflict resolution techniques. *Strategic management journal*, 15(2), 135-152.
- Möller, K., & Halinen, A. (2000). Relationship marketing theory: its roots and direction. *Journal of Marketing Management*, 16(1-3), 29-54.
- Monczka, R. M., Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (1998). Success factors in strategic supplier alliances: the buying company perspective. *Decision Sciences*, 29(3), 553-577
- Monge, P. R., & Contractor, N. S. (2003). *Theories of communication networks*. Oxford University Press, USA.
- Moore, T. T., & Chang, J. C. J. (2006). Ethical decision making in software piracy: Initial development and test of a four-component model. *Mis Quarterly*, 167-180.
- Moorman, C., Deshpande, R., & Zaltman, G. (1993). Factors affecting trust in market research relationships. *the Journal of Marketing*, 81-101.F
- Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of market research: The dynamics of trust within and between organizations. *Journal of marketing research*, 29(3), 314.
- Morgan, R. M. (1991). Relationship commitment and trust in marketing.

- Morgan, R. M., & Hunt, S. (1999). Relationship-based competitive advantage: the role of relationship marketing in marketing strategy. *Journal of Business Research*, 46(3), 281-290.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *The journal of marketing*, 20-38.
- Morse, J. M. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing research*, 40(2), 120-123.
- Morse, J. M. (2003). Principles of mixed methods and multimethod research design. *Handbook of mixed methods in social and behavioral research*, 189-208.
- Mummаланeni, V., & Wilson, D. T. (1991). The Influence of a Close Personal Relationship Between A Buyer and A Seller on the Continued Stability of Their Role Relationship: Penn State's Institute for the Study of Business Markets.
- Munnukka, J. (2008). Customers' purchase intentions as a reflection of price perception. *Journal of Product & Brand Management*, 17(3), 188-196.
- Munson, C. L., Rosenblatt, M. J., & Rosenblatt, Z. (1999). The use and abuse of power in supply chains. *Business Horizons*, 42(1), 55-65.
- Neuman, W. L., & Kreuger, L. (2003). *Social work research methods: Qualitative and quantitative approaches*: Allyn and Bacon.
- Neuman, W. L., & Wiegand, B. (2000). *Criminal justice research methods: Qualitative and quantitative approaches*. Boston: Allyn and bacon.
- Newsome, S., Day, A. L., & Catano, V. M. (2000). Assessing the predictive validity of emotional intelligence. *Personality and individual differences*, 29(6), 1005-1016.
- Nielsen, C. P. (2002). *Vietnam in the international rice market: a review and evaluation of domestic and foreign rice policies*. Fødevarøkonomisk Institut.
- Nike, (2009). Corporate Sustainability Report. Nike Inc., Beaverton, OR.
- Norman K. Denzin, & Yvonna S. Lincoln. (2005). *The Sage handbook of qualitative research*. Sage. Neuman, L. W. (2002). Social research methods: Qualitative and quantitative approaches.

- Norman K. Denzin, & Yvonna S. Lincoln. (2005). *The Sage handbook of qualitative research*. Sage.
- Nunnally, J. C. (1978). *Psychometric Theory*. New York: NY: McGraw-Hill
- Nye, J. S. (2011). *The future of power*. Public Affairs.
- OECD (2002) Governance for Sustainable Development: Five OECD Case Studies, *OECD, Paris, France*
- Ogallo, L. A., Boulahya, M. S., & Keane, T. (2000). Applications of seasonal to interannual climate prediction in agricultural planning and operations. *Agricultural and Forest Meteorology*, 103(1), 159-166.
- Olsson, P., Folke, C., & Berkes, F. (2004). Adaptive comanagement for building resilience in social–ecological systems. *Environmental management*, 34(1), 75-90.
- Omar, M. (2016, January 20). Problem in agricultural marketing channel (Dairy Industry), (Researcher, Interviewer) Chittagong.
- Omore, A, Mulindo, J. C, Islam, S.M. F., Nurah, G., Khan, M. I., Staal, S. & Dugdill, B. T. (2002) Employment generation through small scale dairy marketing and processing: Experiences from Kenya, Bangladesh and Ghana. FAO, Rome, Italy.
- Onwuegbuzie, A. J., & Leech, N. L. (2005). On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies. *International journal of social research methodology*, 8(5), 375-387.
- O'Reilly, C. A., & Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. *Journal of applied psychology*, 71(3), 492.
- Osgood, C. E. (1959). Suggestions for winning the real war with communism. *Journal of Conflict Resolution*, 295-325.
- Overdevest, C., & Rickenbach, M. G. (2006). Forest certification and institutional governance: an empirical study of forest stewardship council certificate holders in the United States. *Forest Policy and Economics*, 9(1), 93-102.

- Parkhe, A. (1998). Understanding trust in international alliances. *Journal of world business*, 33(3), 219-240.
- Parvatiyar, A., & Sheth, J. N. (2001). Customer relationship management: Emerging practice, process, and discipline. *Journal of Economic and Social research*, 3(2), 1-34.
- Perkins, P. E. (2004, July). Participation and watershed management: experiences from Brazil. In *conference of the International Society for Ecological Economics (ISEE)*, Montreal, Canada (Vol. 1014).
- Patel, P. C. (2011). Role of manufacturing flexibility in managing duality of formalization and environmental uncertainty in emerging firms. *Journal of Operations Management*, 29(1), 143-162.
- Patrick, F. L. (2004). Trusting the Communicators. *Profile*, July/August, 17.
- Paulraj, A., & Chen, I. J. (2007). Environmental uncertainty and strategic supply management: a resource dependence perspective and performance implications. *Journal of Supply Chain Management*, 43(3), 29-42.
- Peng, D. X., & Lai, F. (2012). Using partial least squares in operations management research: A practical guideline and summary of past research. *Journal of Operations Management*, 30(6), 467-480.
- Perrini, F., & Tencati, A. (2006). Sustainability and stakeholder management: the need for new corporate performance evaluation and reporting systems. *Business Strategy and the Environment*, 15(5), 296-308.
- Peteraf, M. A. (1993). The cornerstones of competitive advantage: a resource-based view. *Strategic management journal*, 14(3), 179-191.
- Pettigrew, A. M., Whittington, R., Melin, L., Sanchez-Runde, C., Van den Bosch, F. A., Ruigrok, W., & Numagami, T. (Eds.). (2003). *Innovative forms of organizing: International perspectives*. Sage.
- Pezzey, J., & Toman, M. A. (2002). *The economics of sustainability: a review of journal articles*. Washington, DC: Resources for the Future.
- Pinkse, J. (2007). Corporate intentions to participate in emission trading. *Business Strategy and the Environment*, 16(1), 12-25.

- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of management*, 12(4), 531-544.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.
- Polites, G. L., Roberts, N., & Thatcher, J. (2012). Conceptualizing models using multidimensional constructs: a review and guidelines for their use. *European Journal of Information Systems*, 21(1), 22-48.
- Polo Redondo, Y., & Cambra Fierro, J. J. (2005). Moderating effect of type of product exchanged in long-term orientation of firm-supplier relationships: an empirical study. *Journal of Product & Brand Management*, 14(7), 424-437.
- Powers, T. L., & Reagan, W. R. (2007). Factors influencing successful buyer–seller relationships. *Journal of business research*, 60(12), 1234-1242.
- Prakash, A. (2000). *Greening the firm: The politics of corporate environmentalism*. Cambridge University Press.
- Prakash, A., & Potoski, M. (2006). Racing to the bottom? Trade, environmental governance, and ISO 14001. *American journal of political science*, 50(2), 350-364.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, 36(4), 717-731.
- Premuroso, R. F., & Bhattacharya, S. (2007). Is there a relationship between firm performance, corporate governance, and a firm's decision to form a technology committee?. *Corporate Governance: An International Review*, 15(6), 1260-1276
- Rabbani, M. S., Alam, M. M., Ali, M. Y., Rahman, S. M. R., & Saha, B. K. (2004). Participation of rural people in dairy enterprise in a selected area of Bangladesh. *Pakistan Journal of Nutrition*, 3(1), 29-34.
- Rai, A., Patnayakuni, R., & Seth, N. (2006). Firm performance impacts of digitally enabled supply chain integration capabilities. *MIS quarterly*, 225-246.

- Rainforest Alliance & Sustainable agriculture Network. (2010). Sustainable Agriculture Standard (Vol. 2010)
- Ramasamy, B., & Ting, H. W. (2004). A comparative analysis of corporate social responsibility awareness: Malaysian and Singaporean firms. *The Journal of Corporate Citizenship*, (13), 109.
- Randall, D. M., & Gibson, A. M. (1990). Methodology in business ethics research: A review and critical assessment. *Journal of business ethics*, 9(6), 457-471.
- Randall, D. M., & Gibson, A. M. (2013). Methodology in Business Ethics Research: A Review and Critical Assessment. In *Citation Classics from the Journal of Business Ethics* (pp. 191-211). Springer Netherlands.
- Ratnasingam, P. (2000). The influence of power on trading partner trust in electronic commerce. *Internet Research*, 10(1), 56-63.
- Rindfleisch, A. & Heide, J.B. (1997). Transaction cost analysis: Past, present, and future applications. *Journal of Marketing*, 61 (October), 30-54.
- Rinehart, L. M., Eckert, J. A., Handfield, R. B., Page, T. J., & Atkin, T. (2004). An assessment of supplier—customer relationships. *Journal of Business Logistics*, 25(1), 25-62.
- Ringle, C. M., Sarstedt, M., & Straub, D. (2012). A critical look at the use of PLS-SEM in MIS Quarterly. *MIS Quarterly (MISQ)*, 36(1).
- Rossi, P. H., Wright, J. D., & Anderson, A. B. (1983). Sample surveys: History, current practice, and future prospects. *Handbook of survey research*, 1-20.
- Roth, P. L., & Switzer, F. S. (1995). A Monte Carlo analysis of missing data techniques in a HRM setting. *Journal of Management*, 21(5), 1003-1023.
- Rotter, J. B. (1967). A new scale for the measurement of interpersonal trust¹. *Journal of personality*, 35(4), 651-665.
- Roumasset, J., & Setboonsarng, S. (1988). Second-best agricultural policy: Getting the price of Thai rice right. *Journal of Development Economics*, 28(3), 323-340.
- Rowe, W. G., & Barnes, J. G. (1998). Relationship marketing and sustained competitive advantage. *Journal of Market-Focused Management*, 2(3), 281-297.

- Roy, R. (2000). Sustainable product-service systems. *Futures*, 32(3), 289-299.
- Russell, R.M., & Krajewski, L.J. (1992). Coordinated replenishments from a common supplier. *Decision Sciences* 23, 610–632.
- Sako, M. (1998). Does trust improve business performance? *Organizational Trust: A Reader*, 88-117.
- Sanders, W. G., & Carpenter, M. A. (2003). Strategic satisfying? A behavioral-agency theory perspective on stock repurchase program announcements. *Academy of Management Journal*, 46(2), 160-178.
- Salmond, D. (1994). Refining the concept of trust in business-to-business relationship theory, research and practice. In *second research conference on relationship marketing: theory, methods and applications*.
- Sanders, W. G., & Carpenter, M. A. (2003). Strategic satisficing? A behavioral-agency theory perspective on stock repurchase program announcements. *Academy of Management Journal*, 46(2), 160-178.
- Santosa, P. I., Wei, K. K., & Chan, H. C. (2005). User involvement and user satisfaction with information-seeking activity. *European Journal of Information Systems*, 14(4), 361-370.
- Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, 5(1), 105-115.
- Scherer F., (1980). Industrial Market Structure and Economic Performance (2nd edn). *Rand McNally: Chicago, IL*.
- Schmid, A. A. (1987). *Property, power, and public choice: an inquiry into law and economics*. A. Allan Schmid.
- Schurr, P. H., & Ozanne, J. L. (1985). Influences on exchange processes: Buyers' preconceptions of a seller's trustworthiness and bargaining toughness. *Journal of consumer research*, 11(4), 939-953.
- Schwarz, A., Schwarz, C., & Rizzuto, T. (2008, January). Examining the “urban legend” of common method bias: Nine common errors and their impact. In *Hawaii International Conference on System Sciences, Proceedings of the 41st Annual* (pp. 441-441). IEEE.

- Sellnow, T., & Brand, J. (2001). Establishing the structure of reality for an industry: Model and anti-model arguments as advocacy in Nike's crisis communication. *Journal of Applied Communication Research*, 29(3), 278-295.
- Seppänen, R., Blomqvist, K., & Sundqvist, S. (2007). Measuring inter-organizational trust—a critical review of the empirical research in 1990–2003. *Industrial marketing management*, 36(2), 249-265.
- Sergiovanni, T. J. (1992). *Moral leadership: Getting to the heart of school improvement*. Jossey-Bass Inc., Publishers, 350 Sansome Street, San Francisco, CA 94104 (US sales); Maxwell Macmillan International Publishing Group, 866 Third Avenue, New York, NY 10022 (sales outside US).
- Sethuraman, R., Anderson, J. C., & Narus, J. A. (1988). Partnership advantage and its determinants in distributor and manufacturer working relationships. *Journal of Business Research*, 17(4), 327-347.
- Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of cleaner production*, 16(15), 1699-1710.
- Shamsuddoha, A. K., & Edwards, G. (2000, January). Dairy Industry in Bangladesh: Problems and Prospects. In *AARES 2000 Conference. School of Business, La Trobe University*.
- Shani, D., & Chalasani, S. (2013). Exploiting niches using relationship marketing. *Journal of Services Marketing*.
- Sheffi, Y., & Rice Jr, J. B. (2005). A supply chain view of the resilient enterprise. *MIT Sloan management review*, 47(1), 41.
- Sheth, J. N., & Parvatiyar, A. (1995a). The evolution of relationship marketing. *International business review*, 4(4), 397-418.
- Sheth, J. N., & Parvatlyar, A. (1995b). Relationship marketing in consumer markets: antecedents and consequences. *Journal of the Academy of marketing Science*, 23(4), 255-271.
- Sheth, J. N., & Sisodia, R. S. (1995). Feeling the heat-Part 2. *Marketing Management*, 4(3), 19.

- Sheth, J. N., Sethia, N. K., & Srinivas, S. (2011). Mindful consumption: a customer-centric approach to sustainability. *Journal of the Academy of Marketing Science*, 39(1), 21-39.
- Sheu, J. B., & Hu, T. L. (2009). Channel power, commitment and performance toward sustainable channel relationship. *Industrial Marketing Management*, 38(1), 17-31.
- Shin, H., Collier, D. A., & Wilson, D. D. (2000). Supply management orientation and supplier/buyer performance. *Journal of operations management*, 18(3), 317-333.
- Shrivastava, P. (1995). The role of corporations in achieving ecological sustainability. *Academy of management review*, 20(4), 936-960.
- Shtatfeld, R., & Barak, A. (2009). Factors related to initiating interpersonal contacts on Internet dating sites: A view from the social exchange theory. *Interpersona*, 3, 19.
- Siemes, H. (2008). Climate change–Dairy sector will take the bull by the horns.
- Siggelkow, N., & Rivkin, J. W. (2005). Speed and search: Designing organizations for turbulence and complexity. *Organization Science*, 16(2), 101-122.
- Siltaoja, M. E. (2006). Value priorities as combining core factors between CSR and reputation—a qualitative study. *Journal of Business Ethics*, 68(1), 91-111.
- Simons, R. (1987). Accounting control systems and business strategy: an empirical analysis. *Accounting, Organizations and Society*, 12(4), 357-374.
- Sinclair, P. (2011). “Describing the elephant”: A framework for supporting sustainable development processes. *Renewable and sustainable energy reviews*, 15(6), 2990-2998.
- Skinner, S. J., Gassenheimer, J. B., & Kelley, S. W. (1992). Cooperation in supplier-dealer relations. *Journal of Retailing*, 68(2), 174.
- Slaper, T.S. & Hall, T. (2011). The Triple bottom Line: What is it and how does it Work? *Indian Business Review*, 4-9
- Slater, S. F., & Narver, J. C. (1994). Market orientation, customer value, and superior performance. *Business horizons*, 37(2), 22-28.

- Smith, A., Stirling, A., & Berkhout, F. (2005). The governance of sustainable socio-technical transitions. *Research policy*, 34(10), 1491-1510.
- Smith, J. K. (1983). Quantitative versus qualitative research: An attempt to clarify the issue. *Educational researcher*, 12(3), 6-13.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological methodology*, 13(1982), 290-312.
- Sobel, M. E. (1986). Some new results on indirect effects and their standard errors in covariance structure models. *Sociological methodology*, 16, 159-186.
- Solow, R. M. (1974). Intergenerational equity and exhaustible resources. *The review of economic studies*, 41, 29-45.
- Sorensen, J. (1997). National and international efforts at integrated coastal management: definitions, achievements, and lessons. *Coastal management*, 25(1), 3-41.
- Spekman, R. E., Kamauff, J., & Spear, J. (1999). Towards more effective sourcing and supplier management. *European Journal of Purchasing & Supply Management*, 5(2), 103-116.
- Srivastava, R. K., Shervani, T. A., & Fahey, L. (1998). Market-based assets and shareholder value: A framework for analysis. *The Journal of Marketing*, 2-18.
- St John, C. H., & Heriot, K. C. (1993). Small suppliers and JIT purchasing. *International Journal of Purchasing and Materials Management*, 29(4), 11-16.
- Statistics, B. B. O. (1998). Statistical Yearbook of Bangladesh. *Dhaka, Bangladesh*, 14-16.
- Stern, L. W. (Ed.). (1969). *Distribution channels: Behavioral dimensions*. Houghton Mifflin Harcourt (HMH).
- Stern, L. W., & El-Ansary, A. I. (1996). *Marketing channels* (5th Edition). New Jersey' Prentice-Hall.
- Stern, L. W., & Reve, T. (1980). Distribution channels as political economies: a framework for comparative analysis. *The Journal of Marketing*, 52-64.
- Stiglitz, J. (1974). Growth with exhaustible natural resources: efficient and optimal growth paths. *The review of economic studies*, 41, 123-137.

- Styger, L. E. (2010). Analyzing the gap between sustainability and the supply of new talented people within the global foundry sector.
- Sun, Y., Wang, Y. & Li, T. (2007). *The Destination of Agriculture supply management Dss: the IEEE international Conference on Automation and Logistics*, Jinan, China.
- Sundaramurthy C (1996). Corporate governance within the context of anti-takeover provisions. *Strategic Management Journal*. 17(5), 377-394
- Sutcliffe, K. M., & Zaheer, A. (1998). Uncertainty in the transaction environment: an empirical test. *Strategic management journal*, 1-23.
- Svensson, L. E. (1986). Comment on RM Solow," On the Intergenerational Allocation of Natural Resources". *The Scandinavian Journal of Economics*, 153-155.
- Swamidass, P. M., & Newell, W. T. (1987). Manufacturing strategy, environmental uncertainty and performance: a path analytic model. *Management science*, 33(4), 509-524.
- Sweeney, J. C., & Webb, D. A. (2007). How functional, psychological, and social relationship benefits influence individual and firm commitment to the relationship. *Journal of Business & Industrial Marketing*, 22(7), 474-488.
- Tanaka, J. S. (1987). " How big is big enough?": Sample size and goodness of fit in structural equation models with latent variables. *Child development*, 134-146.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches* (Vol. 46). Sage.
- Tashakkori, A., & Teddlie, C. (Eds.). (2010). *Sage handbook of mixed methods in social & behavioral research*. Sage.
- Taylor, D. H., & Fearne, A. (2006). Towards a framework for improvement in the management of demand in agri-food supply chains. *Supply Chain Management: An International Journal*, 11(5), 379-384.
- Teas, R. K., & Sibley, S. D. (1980). An examination of the moderating effect of channel member firm size on perceptions of preferred channel linkages. *Journal of the Academy of Marketing Science*, 8(3), 277-293.

- Tenenhaus, M., Vinzi, V. E., Chatelin, Y. M., & Lauro, C. (2005). PLS path modeling. *Computational statistics & data analysis*, 48(1), 159-205.
- Treleven, M. (1987). Single sourcing: a management tool for the quality supplier. *Journal of Purchasing and Materials Management*, 23(1), 19-24.
- Trevelen, M. (1987). A management tool for the quality supplier. *Journal of Purchasing and Materials Management*, 26(4), 2-7.
- Tsai, M. T., & Huang, Y. C. (2008). Exploratory learning and new product performance: The moderating role of cognitive skills and environmental uncertainty. *The Journal of High Technology Management Research*, 19(2), 83-93.
- Tsui, A., & Wang, D. (2002). Employment relationships from the employer's perspective: Current research and future directions. *International review of industrial and organizational psychology*, 17, 77-114.
- Uddin, M. M., Sultana, M. N., Ndambi, O. A., Alqaisi, O., Hemme, T., & Peters, K. J. (2011). Milk production trends and dairy development in Bangladesh. *Outlook on AGRICULTURE*, 40(3), 263-271.
- Ullman, J. B., & Bentler, P. M. (2012). Structural Equation Modeling. In *Handbook of Psychology, Second Edition*: John Wiley & Sons, Inc.
- UN Food and Agriculture Organization. (2010). Greenhouse Gas Emissions from the Dairy Sector. A Life Cycle Assessment.
- United Nations Development Programme, Reconceptualizing Governance (UNDPRG), (1997) (emphasis added); see also Marita Thornhill et al., The Environment as Catalyst: Understanding Environmental Governance for Sustainable Development 2, available at <http://www.phelamanga.co.za/Environment%20as%20Catalyst.doc> (quoting Ian Kooiman, Societal Political Governance: Overview, Reflection and Design, 1 Pub. Mgmt. 67, 70 (1999)). (“All those interactive arrangements in which public as well as private actors participate aimed at solving social problems, or creating social opportunities, and attending to the institutions within which these governing activities take place.”)

- United Nations. (2010). United Nations Millennium Development Goals. Available at: [http:// www.un.org/millenniumgoals /](http://www.un.org/millenniumgoals/) (accessed November 14, 2012)
- Unnayan Shamannay. (2015). *Policy Brief*. Unnayan Shamannay, financial assistance from CUTS.
- Usunier, J. (1990). The role of trust in the marketing of projects: an intercultural approach.
- UTZ. (2012). UTZ Certified. Available at: <http://www.utzcertified.org/> (accessed November 30, 2012)
- Uzzi, B. (1999). Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing. *American sociological review*, 481-505.
- Vachon, S., & Mao, Z. (2008). Linking supply chain strength to sustainable development: a country-level analysis. *Journal of Cleaner Production*, 16(15), 1552-1560.
- van der Vorst, J. G. (2000). *Effective food supply chains: generating, modelling and evaluating supply chain scenarios*. Landbouwniversiteit Wageningen (Wageningen Agricultural University).
- Vasileiou, K., & Morris, J. (2006). The sustainability of the supply chain for fresh potatoes in Britain. *Supply Chain Management: An International Journal*, 11(4), 317-327.
- Verdu, A. J., Tamayo, I., & Ruiz-Moreno, A. (2012). The moderating effect of environmental uncertainty on the relationship between real options and technological innovation in high-tech firms. *Technovation*, 32(9), 579-590.
- Virolainen, V. M. (1998). *Motives, circumstances, and success factors in partnership sourcing* (p. 232). Lappeenranta: Lappeenranta University of Technology.
- Von Braun, J., & Bos, M. S. (2005). The changing economics and politics of rice: implications for food security, globalization, and environmental sustainability. *IRRI reports*, 7-20.

- Voss, C., & Blackmon, K. (1994). Total quality management and ISO 9000: A European study. *Centre for Operations Management, London Business School, London*.
- Wang, E. (2004). Social exchange theory applied to romantic relationships. *Paper*, 3, 1-8.
- Wang, L., Yeung, J. H. Y., & Zhang, M. (2011). The impact of trust and contract on innovation performance: The moderating role of environmental uncertainty. *International Journal of Production Economics*, 134(1), 114-122.
- WCED. World Commission on Environment and Development, B. C., (1987). Our Common Future. *Oxford, U.K.: Oxford University Press*.
- Webster Jr, F. E. (1992). The changing role of marketing in the corporation. *The Journal of Marketing*, 1-17.
- Wei, H. L., Wong, C. W., & Lai, K. H. (2012). Linking inter-organizational trust with logistics information integration and partner cooperation under environmental uncertainty. *International Journal of Production Economics*, 139(2), 642-653.
- Weitz, B. A., & Jap, S. D. (1995). Relationship marketing and distribution channels. *Journal of the academy of Marketing Science*, 23(4), 305-320.
- Welford, R. (1999). *Corporate environmental management*. Universities Press.
- Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS quarterly*, 177-195.
- Wheeler, D., B. Colbert, & Freeman, R. E. (2003). Focusing on Value: Reconciling Corporate Social Responsibility, Sustainability and a Stakeholder Approach in a Network World. *Journal of General Management* 28 (3), 1-28.
- Wijnands, J. H. M., & Ondersteijn, C. J. (2006). Quantifying the agri-food supply chain: overview and new research directions. *Frontis*, 15, 1-10.
- Wilding, R. (1998). The supply chain complexity triangle: uncertainty generation in the supply chain. *International Journal of Physical Distribution & Logistics Management*, 28(8), 599-616.

- Wilkinson, D. E. (2000) *the Researcher's Toolkit. The Complete Guide to Practitioner Research*, Routledge
- Wilkinson, I. F. (1973). Distribution channel management: Power considerations. *International Journal of Physical Distribution*, 4(1), 4-15.
- Williams, L. J., Vandenberg, R. J., & Edwards, J. R. (2009). 12 structural equation modeling in management research: a guide for improved analysis. *The Academy of Management Annals*, 3(1), 543-604.
- Williamson, O. E. (1999). Strategy research: governance and competence perspectives. *Strategic management journal*, 20(12), 1087-1108.
- Wilson, B., & Henseler, J. (2007). Modeling reflective higher-order constructs using three approaches with PLS path modeling: a Monte Carlo comparison. ANZMAC.
- Wilson, D. T. (1995). An integrated model of buyer-seller relationships. *Journal of the academy of marketing science*, 23(4), 335-345.
- Wilson, D. T., & Moller, K. E. (1988). Buyer-seller relationships: alternative conceptualizations. In *IMP Conference (4th)* (Vol. 4). IMP.
- Wilson, D. T., & Moller, K. E. (1991). Buyer-Seller Relationships: Alternative Conceptualizations.
- Wilson, D. T., & Swati A. J. (1993). Understanding the Value of a Relationship. *Paper at the International proceedings Colloquium Relationship Marketing Melbourne: Monash University*
- World Bank (2009). Thailand Economic Monitor: April –June 2009. Sander, F.G., Bhaopichitr, K., Sirimaneetham, V., Triratanasirikul, N. & Anantavasilpa, R. Bangkok, Thailand, 1-74
- Wroe, A. (1965). Dynamic Marketing Behavior.
- Xu, J., & Quaddus, M. (2005). Exploring the perceptions of knowledge management systems. *Journal of Management Development*, 24(4), 320-334.
- Yao, S. (1997). Rice production in Thailand seen through a policy analysis matrix. *Food Policy*, 22(6), 547-560.

- Yao, S. (1999). Efficiency impacts of Government policy on agricultural production in the presence of externalities. *Journal of environmental management*, 55(1), 57-67.
- Yeung, K., Lee, P. K., Yeung, A. C., & Cheng, T. C. E. (2013). Supplier partnership and cost performance: The moderating roles of specific investments and environmental uncertainty. *International Journal of Production Economics*, 144(2), 546-559.
- Young, L. C., & Wilkinson, I. F. (1989). The role of trust and co-operation in marketing channels: a preliminary study. *European Journal of Marketing*, 23(2), 109-122.
- Young, L. C., & Wilkinson, I. F. (1993). A conceptualization of evolving interfirm trust. In *Paper presented at 9th IMP conference*.
- Young, O. R. (1994). *International governance: Protecting the environment in a stateless society*. Cornell University Press.
- Young-Ybarra, C., & Wiersema, M. (1999). Strategic flexibility in information technology alliances: The influence of transaction cost economics and social exchange theory. *Organization science*, 10(4), 439-459.
- Zabid, A. R. M., & Alsagoff, S. K. (1993). Perceived ethical values of Malaysian managers. *Journal of Business Ethics*, 12(4), 331-337.
- Zboja, J. J., & Voorhees, C. M. (2006). The impact of brand trust and satisfaction on retailer repurchase intentions. *Journal of Services Marketing*, 20(6), 381-390.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *The Journal of marketing*, 2-22.
- Zhang, C., Cavusgil, S. T., & Roath, A. S. (2003). Manufacturer governance of foreign distributor relationships: do relational norms enhance competitiveness in the export market?. *Journal of International Business Studies*, 34(6), 550-566.
- Zhao, X., Huo, B., Flynn, B. B., & Yeung, J. H. Y. (2008). The impact of power and relationship commitment on the integration between manufacturers and customers in a supply chain. *Journal of Operations Management*, 26(3), 368-388.

Appendices

Appendix A:

Field Study Questionnaire

Semi-Structured Questionnaire for the Qualitative Study

The principal objective of the research is to develop an extended model of the agricultural marketing system for sustainable dairy industry in Bangladesh. In this consideration, the objective of this interview is to understand the present status of sustainability dimension like economic, social and environmental sustainability factors of the dairy industry in Bangladesh. Along with this, it also aims at exploring dimensions of the agricultural marketing system, particularly agricultural marketing channel relationship, sustainability governance and environmental uncertainty for ensuring the sustainable development of the dairy industry in Bangladesh.

Introductory Questions

Your name.....

Your present position:

Duties, and responsibilities.....

Semi - structured questions of Agricultural Marketing Channel Relationship (AMCR):

1. Concept of Agricultural Marketing Channel Relationship
 - a) What is the Agricultural marketing Channel Relationship?
 - b) Who are the related members of the farm marketing channel in term of flow of goods and information?
 - c) (Please sketch a diagram to present the marketing channel member of the dairy industry in Bangladesh).
2. Which are the dimensions of the agricultural marketing channel relationship? (Example: Trust, Commitment, Cooperation, Power, Satisfaction, Communication and others)
3. Do you think the sustainable performance of the dairy industry influence by the agricultural marketing channel relationship? If yes, Please draw the link between these two constructs.

Semi- structured questions of Sustainability Governance (SUG)

4. Concept of Sustainability Governance
 - a. What is perception regarding the sustainability governance?
 - b. Who are the integrated parties for the development of the sustainability governance according to your experience?

5. Which are the dimensions of the sustainability governance? (Example: Business sustainability, Integration, Governance Power and Financial control and others?)
6. Do you think, sustainability governance can mediate between the agricultural marketing channel relationship and sustainable performance? If yes, please draw a mediation links among these three constructs.

Semi- structured questions of Environmental Uncertainty (EU):

7. Concept of Environmental Uncertainty
 - a. What is Environmental Uncertainty?
 - b. What is your perception regarding the environmental uncertainty in the context of the dairy industry in Bangladesh according to your previous experience?
8. Which are the dimensions that represent the environmental uncertainty in the context of the dairy industry in Bangladesh? (Example: Demand uncertainty, supply uncertainty, climate uncertainty and others).
9. Do you think, environmental uncertainty can moderate the performance between the agricultural marketing channel relationship and sustainable performance, as well as sustainability governance and sustainable performance? If yes, please draw a moderating effect in the model links among these three construct.

Semi- structured questions of Environmental Uncertainty (SUP):

10. Concept of Sustainability
 - a. What is your understanding of the sustainability and application of sustainability in the dairy industry in Bangladesh?
 - b. What is your perception about the triple bottom line framework in sustainability?
11. Which are the dimensions of the sustainable performance; explain the measurement of sustainable performance? (Example: Environment, Society and Economy and others).
 - a) Which are the social factors (e.g. *health and safety, fair wages, training and development*) do you usually think those factors are important for the sustainable performance of dairy industry?
 - b) Which are environmental factors (pollutant treatment, emission control, environmental hazard free product) do you usually think those factors are important for the sustainable performance of dairy industry?
 - c) Which are the economic factors (cost, competition, productivity, profitability) do you usually think those factors are important for the sustainable performance of dairy industry?
12. Do you think an agricultural marketing channel relationship is essential for the sustainable performance of the dairy industry in Bangladesh? Why or why not?

Appendix B

Survey Questionnaire

Honorable Respondent

Thank you for agreeing to participate voluntarily in completing this questionnaire. I have respect for your confidentiality and anonymity as voluntary respondent and personally committed to protecting these. This also ensures and guarantee that respondents who cooperates in the research will be identified or be capable of identification in the writing up of the research for academic publication. Any data presented will be aggregated as I am interested in general trends, not in a specific individual or organization.

The questionnaire attempts to find out the *main factors that influence the Agricultural marketing channel relationship and sustainable performance of the industry in Bangladesh*. Your cooperation in completing this questionnaire would be precious not only to me (as a researcher) but would also make an important contribution to our knowledge about the pathway of achieving the goal like sustainable performance and agricultural marketing channel relations in the dairy industry in Bangladesh. Finally, I will appreciate your sincere response to the questionnaire and kind contribution.

This study has been approved by the Academic Council, University of Dhaka. If needed, verification of approval can be obtained by contact with the Registrar, Dhaka University, Bangladesh. If you would like to concurrent information regarding this study, Please feel free to contact me on +88 -01819518668 or by e-mail: sirajuits@hotmail.com. Also, you may further query by contact with my supervisor, Dr. Belayet Hossain, Professor, Department of Marketing, University of Dhaka, and Mobile No: +88-01715524048 or e-mail: prof_belayet@yahoo.com

Approval to participate

Your participation in the research is entirely voluntary. You have the right to extract your value addition at any stage without it affecting your rights or my responsibilities.

This survey is divided into two sections and section two divided into four parts. Please make sure that you have completed all the items listed in these sections and parts.

Thank you very much for patience and effort to complete this survey.

Yours sincerely,

Mohammad Sirajul Islam

Section 1

Some general information about you and your organization

Some required information regarding you and your farm or company will be collected in this section of the Questionnaire. The background information will be used for statistical analysis purposes only.

Please tick the most appropriate answer and write in the open space about the questions:

Name of Farm: -----

Designation of Respondent: ☐ Owner ☐ Director ☐ Manager ☐ Others

Nature of Customer: ☐ Agent or Goala ☐ Sweet Maker ☐ Milk Manufacturing Company

☐ Dairy products Manufacturer ☐ All types of Customer

Type of Ownership: ☐ Sole Proprietorship ☐ Partnership ☐ Private Limited Company
☐ Public Limited Company

Nature of Employee: ☐ Permanent ☐ Temporary ☐ Contractual ☐ both type

Tax Payer: ☐ Yes ☐ No

Age of Farm: ----- **Number of Employee:** -----

Number of Cows: -----

Section- 2

Questionnaire about Major Constructs of Research Model

Part- A

Questionnaire about Agricultural Marketing Channel Relation (AMCR)

●Agricultural marketing channel relationship (AMCR) refers the secondary relationship among the marketing channel members for ensuring the stakeholder's value maximization. ●Listed below are the statements that reflect the Agricultural marketing channel relationship (AMCR) in terms of Trust, Commitment, Satisfaction, Power, Communication and Co-operation. ●Please read each statement carefully checking the appropriate number on a scale of 1 to 5 and select your best choice according to your knowledge.			Strongly Disagree	Disagree	Neither agree nor Disagree	Agree	Strongly Agree
S.L	Items	Measuring Statements					
2.1.1	TRT1	Buyer keeps its promises to farm.	1	2	3	4	5
2.1.2	TRT2	Buyer has always been sincere with the farm.	1	2	3	4	5
2.1.3	TRT3	We shared information with the buyer.	1	2	3	4	5
2.1.4	TRT4	Buyer has trust on farm.	1	2	3	4	5
2.1.5	TRT5	Buyer consideration on what is right for us.	1	2	3	4	5
2.1.6	TRT6	Buyers level of integrity.	1	2	3	4	5
2.1.7	COMT1	Cares about the long-term success of buyer	1	2	3	4	5
2.1.8	COMT2	Farm has something to buyer that we are very committed to each other	1	2	3	4	5
2.1.9	COMT3	Buyer is very important to our farm.	1	2	3	4	5
2.1.10	COMT4	The farm has something to a customer that is intending to maintain it definitely.	1	2	3	4	5
2.1.11	COMT5	The customer deserves from us that our maximum attention to maintaining this.	1	2	3	4	5
2.1.12	COMT6	Our farm agreed to make decisions that would benefit buyers.	1	2	3	4	5
2.1.13	SAT1	We received frequent customers' complaints.	1	2	3	4	5
2.1.14	SAT2	We are satisfied with the services that we get from our buyers.	1	2	3	4	5
2.1.15	SAT3	We would like to discontinue selling to buyers*.	1	2	3	4	5
2.1.16	SAT4	Our customer is a good and we recommended them to others.	1	2	3	4	5

2.1.17	SAT5	Customer offering price satisfactory compared to that of competitors' offer.	1	2	3	4	5
2.1.18	SAT6	Price received from buyers reflects the quality of the product.	1	2	3	4	5
2.1.19	POW1	Our customer withholds important supports from us if we don't comply with their demands.	1	2	3	4	5
2.1.20	POW2	Our customer business threatened us to deal with another customer in order to make submit to their demands.	1	2	3	4	5
2.1.21	POW3	Our customer offers incentives when we are reluctant to cooperate.	1	2	3	4	5
2.1.22	POW4	Our customer has no right to expect our cooperation*.	1	2	3	4	5
2.1.23	POW5	Our customer has a lot of experience and knowledge regarding the product and market.	1	2	3	4	5
2.1.24	POW6	The information provided by buyers is logical and just time.	1	2	3	4	5
2.1.25	COMU1	Customers do not understand our production process and ability*.	1	2	3	4	5
2.1.26	COMU2	My farm informs buyers as soon as possible of any unexpected problems.	1	2	3	4	5
2.1.27	COMU3	Our customer keeps us very well informed about what is going on the effectiveness of my investments.	1	2	3	4	5
2.1.28	COMU4	Our customer does not hesitate to explain to me the pros and cons of present business*.	1	2	3	4	5
2.1.29	COMU5	The channels of communication are well understood.	1	2	3	4	5
2.1.30	COMU6	Price change information shared by customer timely.	1	2	3	4	5
2.1.31	COOP1	We co-operate with buyers with respect to forecasting and production planning	1	2	3	4	5
2.1.32	COOP2	We co-operate buyers with respect to process the product.	1	2	3	4	5
2.1.33	COOP3	We do not co-operate extensively with a customer with respect to inventory holdings*.	1	2	3	4	5
2.1.34	COOP4	We co-operate with a customer with respect to information and communication technologies.	1	2	3	4	5
2.1.35	COOP5	We think that no matter who is at fault, problems are our joint responsibilities.	1	2	3	4	5
2.1.36	COOP6	We must work together to be successful.	1	2	3	4	5

Part- B**Questionnaire about Sustainability Governance (SUG)**

●Sustainability Governance (SUG) refers the governance structure where all stakeholders participate in the governance system for ensuring sustainable development. ●Listed below are the statements that reflect the Sustainability Governance (SUG) in terms of Business sustainability, Integration, Governance power, and Financial control. ●Please read each statement carefully checking the appropriate number on a scale of 1 to 5 and select your best choice according to your knowledge.			Strongly Disagree	Disagree	Neither agree nor Disagree	Agree	Strongly Agree
S.L	Items	Measuring Statements					
2.2.1	BSUT1	We are aware regards to sustainability	1	2	3	4	5
2.2.2	BSUT2	We have a goal of sustainable performance	1	2	3	4	5
2.2.3	BSUT3	We do campaign for environmental protection.	1	2	3	4	5
2.2.4	BSUT4	We made a partnership with NGO for environmental protection.	1	2	3	4	5
2.2.5	BSUT5	We do not considerate consumerism*.	1	2	3	4	5
2.2.6	BSUT6	We have concentrated on greening effort through the value chain.	1	2	3	4	5
2.2.7	INTN1	A multidisciplinary knowledge group working for the formulation of the policy and decision making.	1	2	3	4	5
2.2.8	INTN2	Participation of customers (public, private and civil society/ Ngo) for decision making.	1	2	3	4	5
2.2.9	INTN3	Customers and others internal and intrapersonal department are not communication*.	1	2	3	4	5
2.2.10	INTN4	Stakeholder's integration of ICT supports plan and integration.	1	2	3	4	5
2.2.11	GPOW1	Private brand or customer pressure for reducing cost.	1	2	3	4	5
2.2.12	GPOW2	Private brand or buyers building a relationship and supporting to costs down through eco-efficiencies.	1	2	3	4	5
2.2.13	GPOW3	Private brand or buyer's asked certificate or any code of conduct about the product.	1	2	3	4	5
2.2.14	GPOW4	Buyers are connected with others facilitating organization (public, private and civil society).	1	2	3	4	5

2.2.15	GPOW5	The government does not directly regulate the operations of the production and distribution*.	1	2	3	4	5
2.2.16	GPOW6	The government indirectly regulated the operations of the production and distribution through co-regulation.	1	2	3	4	5
2.2.17	GPOW7	The government makes pressure to the customer for paying a fair price.	1	2	3	4	5
2.2.18	FC1	Authority gives the benefit guarantee for sustainable performance (eco-efficiencies).	1	2	3	4	5
2.2.19	FC2	Authority declared penalty for defective performance (excessive carbon emission, Anti- social activities, and financial corruption).	1	2	3	4	5

Part- C

Questionnaire about Environmental Uncertainty (EU)

●Environmental Uncertainty refers the conditions which do not predictive and lack of information regarding the future course of actions. This uncertainty hampers the performance of any organization . ●Listed below are the statements which format by the Environmental Uncertainty (EU) in terms of Supply uncertainty, Demand uncertainty, Competitor uncertainty, Government uncertainty, Climate uncertainty and Political uncertainty. ●Please read each statement carefully checking the appropriate number on a scale of 1 to 5 and select your best choice according to your knowledge.			Strongly Disagree	Disagree	Neither agree nor Disagree	Agree	Strongly Agree
S.L	Items	Measuring Statements					
2.3.1	SU1	Delivery time and quality of dairy support product are unpredictable.	1	2	3	4	5
2.3.2	SU2	Price change of dairy support product is predictable to farm*.	1	2	3	4	5
2.3.3	DU1	The volume of buyer demand is difficult to predict for the farm.	1	2	3	4	5
2.3.4	DU2	Customer's buying behavior change is unpredictable.	1	2	3	4	5
2.3.5	DU3	The customer always expect a discount	1	2	3	4	5
2.3.6	CU1	Competitors' actions are unpredictable	1	2	3	4	5
2.3.7	CU2	Competition is unpredictable due to intensifying in the domestic and the international market.	1	2	3	4	5
2.3.8	GU1	The affect of government production and distribution policies unpredictable.	1	2	3	4	5
2.3.9	GU2	The guaranteed price from government regulation is predictable*	1	2	3	4	5

2.3.10	CLU1	Drought occurrence and its duration are unpredictable.	1	2	3	4	5
2.3.11	CLU2	Flooding occurrence and its duration are unpredictable.	1	2	3	4	5
2.3.12	CUL3	The temperature varies and duration is unpredictable.	1	2	3	4	5
2.3.13	PU1	Prophecy of change of the government and pre-election situation is unpredictable.	1	2	3	4	5
2.3.14	PU2	The influence of political demonstration and duration is unpredictable.	1	2	3	4	5
2.3.15	PU3	Amount of business loss by political demonstration is unpredictable.	1	2	3	4	5

Part- D

Questionnaire about Sustainable Performance (SUP)

• Sustainable performance (SUP) refers the organizational performance with equal consideration of the profit, people and planet at a time without any discrimination. • Listed below are the statements that reflect the Sustainable Performance (SUP) in terms of Economic sustainability, Social sustainability, and Environmental sustainability. • Please read each statement carefully checking the appropriate number on a scale of 1 to 5 and select your best choice according to your knowledge.			Strongly Disagree	Disagree	Neither agree nor Disagree	Agree	Strongly Agree
S.L	Items	Measuring Statements					
2.4.1	ECS1	Our farm's 'Net Sales' is as much as we expected in each year.	1	2	3	4	5
2.4.2	ECS2	'Cost of goods sold' is minimum to we expect.	1	2	3	4	5
2.4.3	ECS3	My farm made the maximum profit as we desired or predicted earlier.	1	2	3	4	5
2.4.4	ECS4	My farm paid standard payroll and benefits (Including wages, pension, and other benefits) to employees.	1	2	3	4	5
2.4.5	ECS5	My farm never paid taxes on income*	1	2	3	4	5
2.4.6	ECS6	My farm has received subsidiaries (Tax relief, and other types of financial benefits)	1	2	3	4	5
2.4.7	ECS7	The productivity of per head cow is much as expected before.	1	2	3	4	5
2.4.8	ENS1	My farm used direct energy by primary source (Electricity).	1	2	3	4	5
2.4.9	ENS2	My farm used water for farming and processing of the dairy product.	1	2	3	4	5
2.4.10	ENS3	Dairy farming makes soil conservation very high degree rate.	1	2	3	4	5

2.4.11	ENS4	My dairy farm does not effect on bio-diversity.*	1	2	3	4	5
2.4.12	ENS5	My dairy farm emission Greenhouse gas and Carbon in the earth	1	2	3	4	5
2.4.13	ENS7	My farm waste and loss link profitability.	1	2	3	4	5
2.4.14	ENS8	My farm does not release materials in air, soil, water at any stage in the food chain*.	1	2	3	4	5
2.4.15	SOS1	My farm used (Full time or part time) labour.	1	2	3	4	5
2.4.16	SOS2	The average turnover rate in your farm very poor.	1	2	3	4	5
2.4.17	SOS3	My farm provided worker benefits beyond those legally mandated.	1	2	3	4	5
2.4.18	SOS4	My farm has provision for worker participation in decision making and corporate governance.	1	2	3	4	5
2.4.19	SOS5	My farm has practiced on recording and notification of occupational accidents and diseases.	1	2	3	4	5
2.4.20	SOS6	My farm arranged the training programs for every category of worker.	1	2	3	4	5
2.4.21	SOS7	My farm has a policy and procedure for preventing all forms of discrimination among the worker.	1	2	3	4	5
2.4.22	SOS8	My farm received the award for best result in social, ethical and environmental performances.	1	2	3	4	5
2.4.23	SOS9	My farm does not receive complaints against the organization and worker corruptions*.	1	2	3	4	5
2.4.24	SOS10	My farm has a policy for preserving customer health and safety during production and distribution.	1	2	3	4	5