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DETERMINANTS OF ORGANIC FOOD PURCHASE  
BEHAVIOR OF CONSUMERS IN BANGLADESH



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DOCTOR OF PHILOSOPHY  
UNIVERSITI UTARA MALAYSIA  
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**DETERMINANTS OF ORGANIC FOOD PURCHASE BEHAVIOR  
OF CONSUMERS IN BANGLADESH**

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**UUM**  
Universiti Utara Malaysia

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In Fulfillment of the Requirements for the Degree of Doctor of Philosophy**



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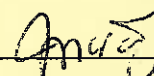
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## ABSTRACT

Organic food market has experienced steady growth throughout the world over the last decade. It is expected that a double-digit growth could be sustained in the foreseeable future. However, for developing countries specifically, including Bangladesh, the growth opportunities may not be fully realized unless the emerging challenges are addressed. Some of these challenges are credibility, availability and low level of consumers' adoption on such foods. It appears that understanding behavioral issues related to organic foods may highlight some important directions towards addressing these emerging challenges. Therefore, this study is conducted to explore the determinants of organic food purchase behavior and to explain the magnitude of influences of such determinants on purchase behavior in Bangladesh. Based on a systematic review of literature, a research framework was developed from Integrated Behavior Model which was originally proposed by Montano and Kasprzyk. The causal model was empirically tested by using partial least-square structural equation modeling. The survey is comprised of 416 usable samples, collected from organic food buyers in Bangladesh. Results suggest that the model fit is significant and adequate. All antecedents of intention appear to be significant, except perceived behavioral control. Emotional and environmental attitudes share are contributing factors to attitude construct. Intention, along with habit, is found to have significant impact on purchase behavior. Trust is found to have significant moderating impact on the relationship between intention and behavior. However, moderating effect of situational constraints in the intention-behavior relationship is not existent. In addition to the theoretical implications, a number of managerial implications are observed. Managers need to enhance consumers' trust on various stakeholders, reduce situational constraints and project environmental benefits to consumers. Overall, the study is expected to confer value to future organic food researchers and managers.

**Keywords:** organic foods, purchase behavior, trust, situational constraints, affective attitude.

## ABSTRAK

Pasaran makanan organik telah menyaksikan pertumbuhan yang stabil di seluruh dunia sepanjang dekad yang lalu. Pertumbuhan dua digit dijangka akan dapat bertahan pada masa hadapan. Walau bagaimanapun, bagi negara-negara membangun termasuk Bangladesh, peluang-peluang pertumbuhan mungkin tidak dapat direalisasikan sepenuhnya melainkan cabaran yang muncul dapat ditangani. Kredibiliti, ketersediaan dan tahap penerimaan yang rendah oleh pengguna terhadap makanan tersebut adalah antara cabaran utama yang dihadapi. Memahami isu-isu tingkah laku yang berkaitan dengan makanan organik boleh mengetengahkan beberapa arah penting bagi menangani cabaran-cabaran baharu yang muncul. Oleh itu, kajian semasa dijalankan untuk meneroka penentu tingkah laku pembelian makanan organik dan menjelaskan betapa besarnya pengaruh penentu-penentu tersebut pada tingkah laku pembelian di Bangladesh. Berdasarkan literatur kajian yang sistematik, satu rangka kerja penyelidikan daripada Model Tingkah Laku Bersepadu yang pada asalnya dicadangkan oleh Montano dan Kasprzyk telah dibangunkan. Model sebab dan akibat telah diuji secara empirikal dengan menggunakan pemodelan persamaan separa berstruktur terkecil. Kaji selidik terdiri daripada 416 sampel yang boleh digunakan, dikumpulkan daripada pembeli makanan organik di Bangladesh. Keputusan mencadangkan bahawa ketetapan model adalah signifikan dan mencukupi. Kesemua penentu kepada niat adalah signifikan, kecuali tanggapan kawalan tingkah laku. Sikap emosi dan persekitaran merupakan faktor penyumbang kepada pembinaan sikap. Niat, berserta dengan tabiat, didapati mempunyai kesan yang besar ke atas tingkah laku pembelian. Kepercayaan didapati mempunyai kesan pengantara yang signifikan ke atas hubungan antara niat dan tingkah laku. Walau bagaimanapun, kesan pengantaraan kekangan situasi dalam hubungan niat-tingkah laku tidak wujud. Selain implikasi teori, beberapa implikasi pengurusan turut dicerap. Pengurus perlu meningkatkan kepercayaan pengguna terhadap pelbagai pihak berkepentingan, mengurangkan kekangan situasi dan menonjolkan faedah alam sekitar kepada pengguna. Secara keseluruhan, kajian itu dijangka memberikan nilai kepada penyelidikan dan pengurusan makanan organik pada masa hadapan.

**Kata kunci:** makanan organik, tingkah laku pembelian, kepercayaan, kekangan ituasi, sikap afektif.



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## TABLE OF CONTENTS

CERTIFICATION .....	ii
PERMISSION TO USE .....	iv
ABSTRACT .....	v
ABSTRAK .....	vi
ACKNOWLEDGEMENT .....	vii
LIST OF TABLES .....	xii
LIST OF FIGURES .....	xiii
LIST OF ABBREVIATIONS .....	xiv
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.1 Background of the Study .....	1
1.2 Problem Statement .....	6
1.3 Research Questions .....	11
1.4 Research Objectives .....	11
1.5 Scope of Study.....	12
1.6 Significance of the Study.....	13
1.7 Definition of Key Terms .....	23
1.8 Outline of the Study .....	25
CHAPTER TWO.....	27
LITERATURE REVIEW .....	27
2.1 Green Consumerism and Organic Food Marketing .....	27
2.2 Organic Food Purchase Behavior .....	30
2.2.1 Organic Food Purchase Behavior in Bangladesh .....	30
2.2.2 Consequences of Organic Food Purchase Behavior .....	38
2.3 Purchase Intention.....	40
2.4 Intention-Behavior Gap.....	42
2.5 Antecedents of Purchase Intention.....	48
2.5.1 Attitude and Behavior .....	48
2.5.2 Subjective Norms.....	56
2.5.3 Perceived Behavioral Control .....	59
2.6 Situational Constraints .....	61

2.7 Trust .....	65
2.8 Habit .....	71
2.9 Summary of Literature Review.....	74
2.10 The Underpinning Theory .....	75
2.11 The Research Framework.....	79
2.12 The Proposed Model Vs. The IBM .....	86
2.13 Hypotheses.....	90
CHAPTER THREE .....	99
METHODOLOGY .....	99
3.1 Introduction.....	99
3.2 Research Design.....	99
3.3 Operationalization .....	101
3.4 Measurement.....	112
3.4.1 Scale Granularity .....	112
3.4.2 Self-reporting Issues .....	113
3.4.3 Construct Measurements.....	115
3.5 Population and Sample .....	134
3.6 Data Collection .....	136
3.7 Minimizing Nonresponse Bias.....	138
3.8 Pilot Study .....	139
3.9 Data Analysis .....	143
3.9.1 Common Method Bias .....	144
3.9.2 Descriptive Statistics.....	147
3.9.3 Inferential Analysis.....	147
3.9.4 Power Analysis and Quality Criteria .....	157
CHAPTER FOUR .....	160
FINDINGS .....	160
4.1 Pilot Study Results .....	160
4.2 Non-Response Bias .....	161
4.3 Data Screening .....	164
4.3.1 Missing Value Analysis .....	165
4.3.2 Outlier Analysis .....	167
4.3.3 Normality Check.....	173

4.3.4 Homoskedasticity Check.....	178
4.3.5 Multicollinearity Check .....	179
4.4 Common Method Bias.....	180
4.5 Demographic Profile .....	184
4.6 Model Specification and Initial Run .....	185
4.7 Outer Model Measurements .....	187
4.7.1 Convergent Validity.....	187
4.7.2 Discriminant Validity.....	191
4.8 Structural Model Results .....	194
4.8.1 R <sup>2</sup> and Effect Size Measurement .....	194
4.8.2 Path Coefficients and Significance .....	196
4.9 Supplementary Analysis .....	200
4.9.1 Classification of Moderator Variable .....	200
4.9.2 Power Test.....	201
4.9.3 Predictive Validity .....	202
4.9.4 Model Fit Measure.....	202
CHAPTER FIVE.....	203
DISCUSSION AND CONCLUSION .....	203
5.1 Recapitulation of the Study .....	203
5.2 Discussion.....	205
5.2.1 The Intention-Behavior Relationship.....	205
5.2.2 The Role of Habit .....	207
5.2.3 Direct and Moderating Effect of Trust.....	209
5.2.4 Direct and Moderating Effect of Situational Constraints.....	212
5.2.5 Attitude and Purchase Intention .....	215
5.2.6 The Role of Subjective Norm.....	219
5.2.7 Influence of Perceived Behavioral Control.....	222
5.3 Contributions of the Study.....	224
5.3.1 Theoretical Contributions.....	224
5.3.2 Practical Contributions.....	227
5.4 Limitations and Future Research Directions .....	231
5.5 Conclusion .....	235
REFERENCES.....	236

APPENDIX A: Study Questionnaire (English Version) .....	302
APPENDIX B: Study Questionnaire (Bangla Version) .....	310
APPENDIX C: List of Stores Selling Organic Foods in Bangladesh .....	319
APPENDIX D: Common Method Bias Check (PAF extraction) .....	320
APPENDIX E: Estimation Maximization (EM) Values .....	321
APPENDIX F: Boxplots Indicating Potential Outliers .....	322
APPENDIX G: Multivariate Outlier Identification.....	343
APPENDIX H: Univariate Normality Tests .....	344
APPENDIX I: Skewness and Curtosis .....	346
APPENDIX J: Model Specification and First-run of PLS Algorithm .....	349
APPENDIX K: Final Model after Conducting CFA .....	350
APPENDIX L: Final Model Showing Bootstrap Results .....	351
APPENDIX M: Stone-Geissure Predictive Validity.....	352



## LIST OF TABLES

	Page
3.1 Summary of Variables, Dimensions and Total Number of Items	111
3.2 Purchase Behavior	122
3.3 Purchase Intention	123
3.4 Habit	124
3.5 Trust	125
3.6 Situational Factors	126
3.7 Health Attitude	127
3.8 Cognitive Attitude	128
3.9 Affective Attitude	129
3.10 Environmental Attitude	130
3.11 Subjective Norms	131
3.12 Perceived Behavioral Control	132
3.13 Summary of the measurement characteristics	133
4.1 Reliability Coefficients of Multiple Variables in the Pilot Study	161
4.2 Independent Samples Test	164
4.3 Outlier Analysis by Comparing Mean vs. Trimmed Mean	171
4.4 Multicollinearity Statistics (VIF values)	180
4.5 Total Variance Explained	183
4.6 Demographic Profile of Respondents	184
4.7 Two-Step Process of PLS Modeling	187
4.8 Factor Loadings, Composite Reliability (CR) and AVE	189
4.9 Intercorrelations of First-order Constructs	192
4.10 Intercorrelations of Second-order Constructs	192
4.11 Heterotrait-Monotrait Criteria for Discriminant Validity	193
4.12 $f^2$ Effect Size	195
4.13 Hypothesis Testing	196
4.14 Moderating Effect Analysis	197

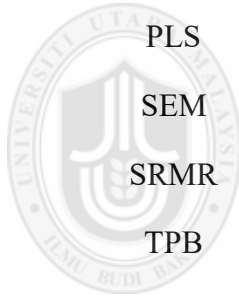
## LIST OF FIGURES

<u>Part</u>		<u>Page</u>
Figure 2.1	The Integrated Behavior Model	78
Figure 2.2	The Proposed Research Framework	86
Figure 4.1	Histogram Showing Distribution Regression Standardized Residuals of Intention	176
Figure 4.2	P-P Plot of Regression Standardized Residual of Intention	176
Figure 4.3	Histogram Showing Distribution Regression Standardized Residuals of Behavior	177
Figure 4.4	P-P Plot of Regression Standardized Residual of Behavior	177
Figure 4.5	Scatterplot for Homoskedasticity	178
Figure 4.6	Moderating Effect of Trust on the Intention-Behavior Relationship	199



## LIST OF ABBREVIATIONS

<b>Abbreviations</b>	<b>Description</b>
AVE	Average Variance Extracted
CB-SEM	Covariance-based SEM
CMV	Common Method Variance
CR	Composite Reliability
FDA	Food and Drug Administration
GM	Genetically Modified
IBM	Integrated Behavior Model
NGO	Non-Government Organization
PBC	Perceived Behavioral Control
PLS	Partial least-square
SEM	Structural equation modeling
SRMR	Standardized Root Mean-square Residual
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
VB-SEM	Variance-based SEM
VIF	Variance Inflation Factor



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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

Global warming and climate change have been an important concern for governments, private sector organizations, academia and the general public all over the world since the problem emerged at a global scale (*Global Risks*, 2014; Turner, 2008; Nisbet & Myers, 2007). Apart from ecological and social effects of global warming and environmental degradation, there would be a considerable impact of the same on businesses and consumers as well. For example, at one hand, consumers are becoming more aware of the environmental impact of industrialization and preferring eco-friendly goods and services, e.g., energy from renewable sources, organic foods etc. (Spence, 2010; Thogersen, 2012); on the other hand, producers are trying to adopt more environmentally friendly processes and make products that appeal to eco-conscious customers (Thogersen, 2011; Delmas & Grant, 2010; Averdung & Wagenfuehrer, 2011). These developments have set the perfect breeding ground for eco-friendly products. Particularly in the food sector, the organic food has become a prominent green product category that has been showing steady growth over the last decade. According to a report by Soil Association (2013), there are strong indications that global demand for eco-friendly products, particularly demand for organic foods is increasing due to rising awareness of eco-consumers.

At the same time, on the supply side, more and more cultivable lands are gradually coming under eco-friendly farming practices. Government and regulatory bodies are also facilitating this growth by formulating and enforcing regulatory measures like

certification procedures and eco-labeling (Jones, Clarke-Hill, Comfort, & Hillier, 2008). It is expected that all these developments would lead to a sustainable framework for green and responsible marketing practices, particularly in the organic food sector.

This global rise of eco-consumerism focusing on organic foods has been evident in both the developed and developing countries (Halberg, Alroe, & Knudsen, 2006; Soil Association, 2013). Various studies have attributed this growth to consumers' environmental awareness, health concerns and safety perception (Dahm, Samonte, & Shows, 2009; Anderson, Wachenheim, & Lesch, 2006). Due to its production process without the use of synthetic pesticide, synthetic fertilizer, growth hormones and genetically modified organisms, organic foods hold a promising place in the world food basket. In addition, adoption of organic agriculture may reduce the carbon footprint significantly since it is estimated that agriculture's contribution to total environmental degradation could be as much as 30 percent (Grunert & Grunert, 1993). Some studies indicated a number of dietary curtailments that could reduce the environmental burden of food consumption, including the substitution of conventional food with organic foods and vegetables (Baroni, Cenci, Tettamanti, & Berati, 2007; Jungbluth, Fluri, & Doublet, 2013). Moreover, despite the popular belief that organic crops provide lower yield than genetically modified crops, scientific evidence indicates that this is not the case with developing countries (Badgley et al., 2007).

This finding on organic yield is also applicable to Bangladesh that organic methods of cultivation, without environmentally harmful pesticides and fertilizers, have at par or higher yields than conventional farming (Kamal & Yousuf, 2012; Shorna, Joardar, Nasreen, Rashid, & Huq, 2012). Such environmental promises of organic foods may

have positive impact on the attitude of Bangladeshi customers as well. For example, Mukul et al. (2013) found that consumers perceive organic food to be environmentally friendly. However, it remains to be seen whether such perception would lead to actual purchase and adoption of organic foods instead of conventional foods in Bangladesh.

Apart from the positive impact of organic farming on the environment, organic foods have numerous other benefits from consumers' points of view. Most studies in the past found organic foods to be more nutritious than genetically modified (GM) foods (Benbrook, Zhao, & Yáñez, 2008; Palupi, Jayanegara, Ploeger, & Kahl, 2012). Past researchers found that Bangladeshi consumers also perceive organic foods to be more nutritious and tasty (Mukul et al., 2013). Organic foods are also found to be safer since consumers can avoid pesticide exposure that may occur from conventional foods (Smith-Spangler et. all 2012). This safety aspect could be of utmost importance to consumers under Bangladesh context due to widespread reports of food adulteration in the local market (Rahman, 2014). Consequently, consumer studies attributed the growth of organic foods market to consumers' perception about safety, healthiness and the positive environmental impact of organic foods (Winter & Davis, 2006; Organic Market Report, 2013).

Despite this perception of safety, healthiness and environmental impact of organic foods, the market for organic foods is not without challenges. It is reported that conventional food still constitutes the biggest portion of the global food consumption basket. In the USA, where the organic food sector is growing, the United States Department of Agriculture (USDA) reveals that in 2012, organic foods constituted about 3.5% of total domestic foods sales (Osteen, Gottlieb, & Vasavada, 2012). While

many Asian countries are producers and exporters of organic foods, their internal consumption ratio of organic foods to total foods is very low (about 1% or less) as compared to global trend (Kim, 2013). Although no official data could be traced on organic food consumption ratio in Bangladesh, it appears from other published sources that the ratio would not be higher than the Asian average (Willer, Helga, & Lernoud, 2015). Some of the bottlenecks in consumer adoption of organic foods in Bangladesh were identified as credibility issues, availability and price (Mamoon & Haque, 2013). It is also evident that government may not be interested in regulatory intervention at this stage since it seems to be a priority to maintain food security by relying on high-yield conventional crops (Hossain & da Silva, 2013). As a result, domestic sales of organic foods does not require government certification or regulatory assurance. Thus consumers may find credence issues as a major barrier in adopting organic foods.

Despite these bottlenecks, organic food sector holds other promises for Bangladesh. It is evident that public awareness is increasing about environmental degradation and impact of the same in Bangladesh. At the same time, there are growing concern of adulterated foods and contamination of food with unhealthy colors, pesticide residue etc. (Parveen, 2008). According to Ali (2013), there are increasing risks of public health issues like acute and chronic illnesses due to these adulteration and unhealthy food practice. As already noted, the increasing eco-awareness as well as rising health concerns may have sparked the recent interest of consumers into organic food market in Bangladesh (Mamoon & Haque, 2013) .

However, the contradiction remains as to why the domestic adoption of organic foods is not widespread despite positive environmental and health perception of consumers

towards organic foods. Therefore, it is necessary that a consumer-end study look into the determining factors behind consumers' buying decision of organic foods. Regrettably, only a handful of studies can be traced under Bangladesh context in this regard. For example, about 11 studies could be traced so far, among which only four could be traced to the consumer-end; five could be traced to the farmer-end, and the rest were institutional reports. Out of these four consumer-end studies (i.e., Mamoon & Haque, 2013; Mukul, Afrin, & Hassan, 2013; Rahman, Omar, & Ullah, 2007; Yoshino, 2010), only one study was found to be of causal design and measured consumer perception only (i.e., Mukul, Afrin, & Hassan, 2013). Thus hardly any study under Bangladesh context could be found that analyzed actual purchase behavior or purchase intention of organic food products.

Therefore, keeping in view of the environmental, health, social and economic benefits of organic foods, it is important to know the current organic customers more in terms of their preferences, purchase behavior and motivation to buy organic foods in Bangladesh.

## 1.2 Problem Statement

Although the rise in consumers' eco-awareness and growth of organic farming are opening windows of opportunities to its stakeholders, including the food scenario in Bangladesh, the market of organic food is loaded with numerous challenges. The share of organic foods to total food consumption is still very low all over the world. Specifically in Bangladesh, despite increasing land use in organic farming, the internal consumption of organic foods is still considered to be low (Sarker & Itohara, 2008). The apparent controversy of benefit of organic foods vs. low domestic demands poses the question of how, why and who are purchasing organic foods. In other words, if consumers are willing, what is preventing them from adopting organic foods?

Some of the practical issues that are hindering such adoption may be classified into three different factors. They are: credence, availability and price issues. It was observed that unlike for export markets, the domestic sales of organic foods does not require government certification; therefore, it may confer a lack of confidence among consumers to trust foods that are claimed to be organic (Mamoon & Haque, 2013). Availability is another issue since most of the organic foods are perishable in nature, many retailers do not carry enough varieties due to uncertainties. This leads to narrowed-down choices for customers (Parveen, 2008). Price could also be a barrier towards widespread adoption as some of the organic foods are reported to be selling at 80% higher prices than similar conventional foods (Meenabazar, 2015). However, it is also observed that despite all these bottlenecks, customers are showing increasing interest in organic foods (Mukul et al., 2013). Therefore, it remains to be seen as to what extent these issues are influencing consumers intention and actual buying behavior of organic foods.

In order to understand the determinants of consumer intention to buy organic foods and purchase behavior, a number of theoretical frameworks have been proposed and tested, among which the Theory of Reasoned Action and its later variant the Theory of Planned Behavior have been found to be widely used in recent studies (Aygen, 2012; Voona et al., 2011; Shaharudin & Pani, 2010; Smith & Paladino, 2010). Theoretically, “purchase intention” has been used by most researchers as a predictor for purchase behavior, based on the Theory of Planned Behavior (Ajzen & Fishbein, 1980). It was observed that not many studies focused on actual purchase behavior. This has also been the case for studying purchase behavior under Bangladesh context.

Other studies tracing consumers’ intention to buy green products vis-à-vis the actual purchase of green products, discrepancy has been observed in the intention-behavior relationship (Lockie et al, 2002; Niessen & Hamm, 2008). Consequently, many authors have suggested use of other factors to explain this gap (Fennis, Adriaanse, Stroebe, & Pol, 2011; Carvalho et al., 2010; Allan, 2008). Therefore, further studies are warranted to investigate the intention-behavior gap.

Among the variables frequently viewed as barriers to green and organic purchases are price and availability (Lockie et al. 2002, Raab & Grobe, 2005), situational constraints (Carvalho et al., 2010; Soye, 2012), implementation intention (Fennis et al., 2011; Sheeran, Webb, & Gollwitzer, 2005) and consumers’ trust in the certification and product (Hughner et al., 2007; Janssen & Hamm, 2012; Van Loo, Diem, Pieniak, & Verbeke, 2013). Although similar barriers were noted by some descriptive studies conducted under Bangladesh context (Mamoon & Haque, 2013; Akter, 2012), no causal study was available that examined the effect of such barriers

on actual behavior. It appears that further systematic investigation is warranted to study the effect of barriers to actual purchase behavior.

In addition, a number of previous studies identified trust as an important factor in buying organic products (Sangkumchaliang & Huang, 2012; Thøgersen, 2009). However, not many studies were done on this variable to explain the intention-behavior gap. Similarly, situational factors have long been proposed to explain the intention-action gap (Soyez, 2012, Carvalho et al., 2010, Belk, 1977). However, only a few studies investigated this variable in the organic food context in their research framework (Carrington, Neville, & Whitwell, 2010; Lee, 2016). Highlighting the importance of situational factors, Montano and Kasprzyk (2008) proposed IBM (Integrated Behavior Model), an extension to the theory of Planned Behavior (TPB), by incorporating “environmental constraints”, a concept similar to situational constraints in studying health behavior. Consequently, it was observed from literature survey that adoption of latest behavioral model (like IBM) to explain organic food purchase behavior has been scant. Thus, further systematic studies by adopting evolving models may be warranted.

The marketing literature also mentioned habit as an important predictor of repeat purchase intention (Naik & Moore, 1996; Rauyruen, Miller, & Groth, 2009). Yet habit seems to have been understudied in organic food researches so far. In fact, only a few papers can be traced that studied “habit” in the organic food context, thus warranting a systematic study in this regard.

Many past studies also emphasized attitude as an influencing factor on purchase intention of organic foods (Chen, 2007; Perez-Cueto, Pieniak, & Verbeke, 2011; Saba & Messina, 2003). Most previous studies linked health concern and belief influencing



this favorable attitude towards organic foods (Kesse-Guyot et al., 2013; Kriwy & Mecking, 2012; Yin, Wu, Du, & Chen, 2010). However, Zepeda and Li (2007), Tarkiainen and Sundqvist (2005), and Jolly and Dhesi (1989) reported no significant relationship between personal health concern and purchase of organic food. Similar contradictory findings were reported by Michaelidou and Hassan (2008) that health attitude was not significant in determining purchase intention of organic foods. Thus, these conflicting results warrant further investigation of the relationship between attitude and purchase intention.

Based on TPB and IBM, another important predictor appears to be the subjective norm. According to Lapinski and Rimal (2005), subjective norms can be viewed as a composition of injunctive norms and descriptive norms. It appears that most researchers used injunctive norm as a proxy to subjective norm, leaving descriptive norm understudied (Aertsens & Verbeke, 2009). Therefore, integrated effect of both types of norms appears to be understudied in the case of organic food purchase studies.

Perceived Behavioral Control (PBC), where the idea of motivation and ability (control) were included as precursors to behavior (Montano & Kasprzyk, 2008), was mentioned in many past studies as a significant predictor of intention to purchase organic foods (Chen, 2007; Ling, 2013; Zhou, 2013). However, under Bangladesh context, it is rare to find any study in the organic food sector that investigated the impact of this variable. Since PBC accounts for non-volitional elements under the TPB framework, inclusion of this variable would represent the non-volitional elements of consumer decision-making that are not within immediate control of consumers in Bangladesh. Extant literature indicates that there are factors that are not

within the control of Bangladeshi consumers. For example, it was reported that food retailers carry fewer varieties of vegetables that lead to narrowed-down alternatives to customers, resulting in the loss of customers' control on what to buy (Ahmed & Rahman, 2015) . It appears that, in order to capture the perceived degree of control of consumers , it is important to investigate PBC in the organic food behavior context.

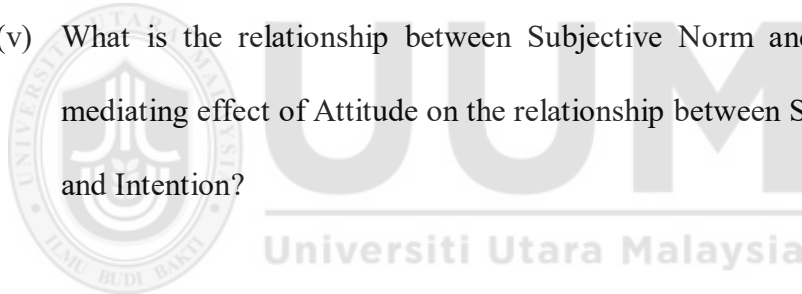
Therefore, the problem statements stands as, –What are the determinants of consumer purchase behavior of organic foods in Bangladesh, and to what extent do these factors relate to and influence the magnitude of their relationships to intention and actual purchase behavior?”



### **1.3 Research Questions**

The following are the tentative research questions of the study:

- (i) What is the relationship between organic food Purchase Intention and actual Purchase Behavior by Bangladeshi consumers?
- (ii) What is the relationship between Habit and actual Purchase Behavior of organic foods?
- (iii) What is the moderating effect of Situational Factors and Trust on the relationship between Purchase Intention and actual Purchase Behavior?
- (iv) What is the relationship of Attitude, Subjective Norm and Perceived Behavioral Control with Purchase Intention of organic foods?
- (v) What is the relationship between Subjective Norm and Attitude, and mediating effect of Attitude on the relationship between Subjective Norm and Intention?



### **1.4 Research Objectives**

The general objective of the study is to identify determinants of organic food purchase behavior under Bangladesh context and shed lights on motivations and consumer insights that may seem valuable to practicing managers, academicians and other stakeholders in their respective decision making.

Specific research objectives may be defined as follows:

- (i) To examine the relationship between organic food Purchase Intention and actual Purchase Behavior by Bangladeshi consumers.

- (ii) To investigate the relationship between Habit and actual Purchase Behavior of organic foods.
- (iii) To examine the moderating effect of Situational Factors and Trust on the relationship between Purchase Intention and actual Purchase Behavior.
- (iv) To study the relationship of Attitude, Subjective Norm and Perceived Behavioral Control with Purchase Intention of organic foods.
- (v) To investigate the relationship between Subjective Norm and Attitude, and mediating effect of Attitude on the relationship between Subjective Norm and Intention.

### **1.5 Scope of Study**

The study will be geographically limited to Dhaka city only, where about 95% of supermarkets selling organic foods are located. Most researchers adopted this practice of conducting their studies in urban areas since organic food consumers were mostly city-based (Chen, 2013; Connor & Douglas, 2001; Zhou, 2013). Therefore, the limited scope may still yield a representative sample of organic food buyers in Bangladesh.

In addition, the research would focus on the domestic consumption and not on the export market, since the objective of the study is to identify the determinants of purchase behavior of Bangladeshi consumers. According to Krystallis, Fotopoulos, and Zotos (2006), investigating behavioral determinants requires that respondents have the decision making capacity in the buying process. Therefore, studying only the decision-making individuals would be required. It would be verified before data

collection whether the individual respondents are buying on someone else's behalf or he/she has the decision-making role in the process.

The study would include both the certified and uncertified but self-labeled products, since certification process is at a nascent stage and is not legally required for domestic sales in Bangladesh (Hossain & Sugimoto, 2007). Past researchers studied behavioral aspects of such organic products and termed them as "organic by default", since self-labeling by retail stores was based on organic cultivation process of such food products that only lack authoritative certification (Kristiansen, Taji, & Reganold, 2006; Zaman, 2012). However, some certified products that are FDA (USA) certified for export but are also available for sale in the local retail chains would be included since these are also meant for domestic sales.

### **1.6 Significance of the Study**

This study is expected to contribute to the body of knowledge that may be useful for academicians, practicing managers and regulatory bodies including the government. The following sections depict the major contributions expected of this study. First, theoretical significance is discussed. Practical significance is discussed thereafter.

The study is aimed to exploring some branches of the marketing literature related to consumer behavior for organic foods, as well as to develop further understanding of the working model of green purchase behavior focusing on organic foods. In terms of knowledge contribution, this study is expected to impact at least in six ways.

First, the study is expected to shed new light on some issues of organic food purchase behavior and its various dimensions that probably were not studied in-depth before. For example, new variables are proposed to account for the long-standing reported

gap between intention and actual purchases. Most of these variables were either understudied, or were studied under a different theoretical model or context. For example, habit has long been seen as a potential predictor of intention and actual behavior (Rauyrue, Miller, & Groth, 2009; Kollmuss & Agyeman, 2002). However, only a few studies actually investigated this variable under organic food context (Tarkiainen & Sundqvist, 2009). This has also been the case in studies done under the Bangladesh context. To the best of the researcher's knowledge, about eleven studies can be traced to organic food sector in Bangladesh where only four out of these eleven studies were conducted at the consumer end (Mamoon & Haque, 2013; Mukul, Afrin, & Hassan, 2013; Rahman, Omar, & Ullah, 2007; Yoshino, 2010). The rest of the researches include five farmer-end studies (i.e., Hoque, 2012; Hossain & Sugimoto, 2007; Paul & Vogl, 2012; ; Sarker & Itohara, 2011; Sarker, Itohara, & Hoque, 2005), and two status reports from various institutions (i.e., Partap & Saeed, 2010; Uddin, Ahmad, & Halim, 2011). None of those four studies at the consumer end investigated "habit" to explain consumer behavior about organic food in Bangladesh, thus leaving the gap in the local context as well.

In addition, while considering new variables to explain intention-behavior gap, the literature review revealed that an existing underpinning theory may exist but the theory was rarely used in explaining organic food purchase behavior. The latter point is elaborated below.

Second, as it follows from the previous section, the study is expected to contribute from methodological point of view as well. The study has proposed to use a relatively new underpinning theory that was rarely used in studying organic food purchase behavior. The Integrated Behavior Model (Montano & Kasprzyk, 2008), prominently

used in health behavior and communication studies, has been found appropriate to be used in explaining organic food purchase behavior. In fact, the Integrated Behavior Model (IBM) is an extended version of TPB, yet contains new variables to explain new dimensions of health behavior. To the best of the researcher's knowledge, only two recent studies can be traced where the respective authors partially used the aforesaid model in explaining food related behavior, e.g., Quick, Byrd-Bredbenner, and Corda (2013) and Hämmerle et al. (2012). Under Bangladesh context, theoretical deliberation on the model has been absent in the four consumer-end studies as mentioned earlier. Therefore, the current study would provide a wide coverage of the IBM model in organic food context, probably for the first time.

Third, the conceptual framework proposes two variables (trust and situational factors) simultaneously in an attempt to find the interaction effect with the purchase behavior, which has rarely been investigated so far. Although fragmented efforts can be traced in various studies (Sangkumchaliang & Huang, 2012; Padel & Foster, 2005; Carvalho et al., 2010), simultaneous inclusion of these two variables as moderator is scant in consumer behavior literature. It may be noted here that, it is not only the treatment of this variables as moderator is scant in literature, but also the study of these variables in any form, specifically situational factors, is also scant in organic food behavior research. The same is true for studies done under the Bangladesh context. Only one study can be traced that refers to the trust factor, yet being exploratory in nature, did not put the factor under any theoretical context ( Mamoon & Haque, 2013). Therefore, the proposed study is expected to contribute by looking into the interaction effect of these variables.

Fourth, Fishbein and Ajzen (2005) indicated that past researchers emphasized the significant effect of attitude on intention and behavior. However, simultaneous study of cognitive and affective attitude has been reported to be scant in organic food studies (Aertsens & Verbeke, 2009). Further literature survey reveals that the simultaneous inclusion of these two dimensions is indeed understudied. For example, most studies in organic food sector considered cognitive attitude while excluding the affective attitude (Wei & Zeng, 2006; Padel & Foster, 2005; Ahmad & Juhdi, 2010). Only a few studies can be traced where affective attitude has been included (Arvola et al., 2008). In addition to the lack of simultaneous studies, it was also found that affective attitude alone was hardly studied in organic food behavior context as compared to the study of cognitive attitude. In addition, such deliberation has been found to be absent in studies conducted under Bangladesh perspective as well. Therefore, the study would contribute by looking into this aspect, both globally and locally.

Fifth, past studies in organic food sector indicated that subjective norms could be an important determinant of purchase intention under the TPB or its variant models in general (Lodorfos & Dennis, 2008; Sadati & Mohammadi, 2012; Tarkiainen & Sundqvist, 2005). However, most of these studies did not make the distinction between descriptive norms and injunctive norms, and used subjective norm synonymous to injunctive norm only. There are only a few studies that investigated the both types of norms simultaneously (Zhou, 2013), or investigated such constructs like “personal norms” that closely resembles the combination of both types of norms (Arvola et al., 2008). It appears that the Fishbein and Ajzen's (2005) recommendation to design items to tap both types of norms to obtain a complete measure of norms received scant attention till to date. The similar findings can be drawn from studies



conducted under Bangladesh perspective where measurement of norm itself received scant attention. Therefore, in the organic food context, the current research will be among those few studies that would include both the descriptive and injunctive norms.

Sixth, in addition to the lack of dimensional studies, another important relationship between subjective norm and attitude has been ignored in the organic food behavior literature. Some researchers suspected that norms significantly affect attitude rather than purchase intention (Aertsens, Mondelaers, Verbeke, Buysse, & Huylenbroeck, 2011). Specifically to organic food related behavior, the influence of subjective norm on attitude has also been evident from investigations by Al-Swidi et al. (2014), Tarkiainen and Sundqvist (2005) and Smith and Paladino (2010). However, other than these handful of studies, no further studies can be traced that actually investigated this relationship further, despite repeated emphasis by researchers to research on this relationship in organic food context. The current study is also aimed at fulfilling this gap by investigating the relationship between subjective norm and attitude towards organic foods.

As a consequence of measuring the effect of Subjective norm on Attitude, the relational path results in the Attitude being a mediating variable in the relationship between Subjective Norm and Intention. This is a consequential modeling effect that also deserves empirical investigation.

In addition, some methodological contributions may also be noted. The paper is expected to contribute to methodology in at least two ways. First, while most literature elaborates on the process of back-translating a questionnaire, there appears to have a more rigorous method like back-translating separately by two different

translators and then synchronize them after separate translations are available (Beaton, Bombardier, Guillemin and Ferraz, 2000). Extant literature reveals that the method of using two different translators was hardly used, therefore, the outcome of such questionnaire development technique appears to be hardly envisioned. The current paper employs this technique and results appear to be consistent and encouraging for future researchers.

Another methodological contribution lies in identifying and incorporating the dimensional elements of situational constraints under Bangladesh context. Literature survey reveals that the dimensions of this construct are highly dependent on the context like geography, market situation, demographic parameters, etc. Therefore, various authors measured this variable in various ways depending on their specific research context. Since the variable was hardly used in research under Bangladesh context, the challenge to choose relevant dimensions has been critical to validate the construct and meet the subsequent modeling requirements. Hence, some dimensions were modified based on previous research, then defined and relevance were effectively tested under Bangladesh context, so that the construct is now not only applicable to current research, but also expected to be readily usable by future researchers.

At this point, some practical contributions may be noted as well. Practical contribution would be of immense value to practicing managers who might be primarily working on formulation, implementation and control of marketing plans. Understanding organic consumers and knowing their preferences would provide them with immense ability to design and execute plans effectively in marketing organic foods. It may provide valuable consumer insight to aid in efficiency in marketing

programs, particularly product design and promotion. The study is expected to help practicing managers in at least eight ways. They are elaborated as follows.

First, knowing the organic consumers' purchase behavior may provide important behavioral map to understand their preferences and conceivable link to consumer profile. Such understanding will help managers know the preference of consumers in terms of buying frequency, assortment target and locational differences. It may immensely help them in designing and implementing product assortment and distribution decisions. Particularly for a country like Bangladesh, such information would provide immense value to organic food marketers in their assortment and distribution decisions.

Second, knowing customer profile and linking the same to purchase behavior may provide important insights that might be usable in designing effective promotion. If there is any actual gap between intention and behavior, then corresponding reasons may be identified in this research that would be of immense value in designing and prioritizing promotional decisions. Under Bangladesh context, where general food safety has been a rising concern for citizen (Huda, Muzaffar, & Ahmed, 2009), customer insights about organic foods may immensely aid advertising agencies and food marketers to design effective promotional campaign.

Third, the inclusion of contingent or situational factors may yield immense practical value to practicing managers. Marketers may need to appreciate situational factors not from their own point of view, but from customers' point of view. Since situational factors are usually beyond control of consumers, marketers can identify the positive situational cues that can be managed to elicit better response from consumers. Under Bangladesh context, understanding situational factors would contribute to better

customer service since it is controllable at the marketers' end only. Marketers' may plan and design only those situational cues that would contribute positively to customer experience.

Fourth, the inclusion of habit as a predictor variable may confer another practical advantage in addition to contributions mentioned in the earlier point. If habit positively influences the purchase behavior, then marketers can design programs that may lead to store and product loyalty in such a way that there might be an increase in the number of habitual customers. Since studies in the past reported that repeat purchase intentions are influenced by habits (Grankvist & Biel, 2007), such information may have immense value in designing loyalty programs in future. The same would be applicable under Bangladesh perspective where rising competition in this sector may call for creating a loyal customer base for marketers. Studying the habitual effect would immensely contribute in visualizing customer insights in terms of loyalty.

Fifth, in this interconnected world of smart technology, words-of-mouth and referrals are expected to play an important role in influencing consumer behavior (Jalilvand & Samiei, 2012). In this area, subjective norms may play an important role that can be viewed as a theoretical proxy for social normative information, thus may influence word-of-mouth leading to loyalty (R. Lee, Murphy, & Neale, 2009). Thus, the measurement of influence of subjective norms may yield immense insight to practicing managers in designing social promotion and loyalty programs for organic food market in future as well. Similarly in the Bangladesh context, where social media is showing increasing popularity among younger generation and professionals (M. Kamal & Fariduddin, 2013), customer insights on this aspect would help in designing social media promotion.

Sixth, knowing customers' motivation has always been an elusive pursuit for many practicing managers and academicians alike. The current study investigates four important dimensions of attitude (cognitive, affective, health and environment) that might shed lights on relative weights of attitudes on customers' purchase intention. Therefore, based on the findings in future, practicing managers may gain useful insights on what motivates customers to buy organic foods in terms of attitudinal components. This may ultimately help them in designing product, price, place and promotion and executing operational plan effectively. It was observed that, the studies done so far under Bangladesh context lack enough emphasis on attitude factors in their deliberation. In fact, only one study out of those four studies as mentioned earlier was of explanatory design (Mukul et al., 2013), however, the study did not address any of these attitude factors in their proposed model. The same has been the case with rest of the studies. Therefore, under Bangladesh context where researches on organic food at the consumer end has been scant, such investigation would immensely help managers in designing their marketing programs in future.

Seventh, the study may help the government in formulating and executing green marketing and sustainable business practice regulations in the organic food sector. In terms of evolving complexity of legislatures and nature of green technological advancement, the study may provide a basic understanding of how customers think and act in the world of green products, particularly organic foods. Consumers' level of trust may be an important consideration for government policy formulation and implementation in future. Without understanding the current level of trust, it would be hard for governments to formulate any meaningful program in future. Under Bangladesh context, where pressure groups are already urging the government to

formulate an organic food policy (Bhuyan, 2012), such investigation would provide useful input from consumers' end to aid in the government's policy formulation.

Government's role may also be important in preventing deceptive communication or green washing related to organic foods. It is not only the certification and related regulatory issues that are important, but also the prevention of misuse of these credence factors that matters to ensure long run trust of organic foods among consumers. Therefore, the study is expected to highlight on these regulatory issues from Bangladesh perspective, thus providing a base of guidelines to future government regulations.

Eighth, though not direct, yet the study may have a long run indirect or spill-over effect on the social, economic and environmental aspects of Bangladesh. It was found that consumers were generally aware of organic foods and domestic demands were gradually rising in Bangladesh (Mamoon & Haque, 2013). However, the study also found that despite rising awareness of environmental degradation and knowledge about benefits of organic foods, the demand for organic food has been still low compared to that of conventionally grown foods. If the proposed study can contribute to the growth of domestic organic food market through the efforts of practicing managers and government bodies, tremendous spill-over impact may be observed in terms of food safety, health, nutrition and environmental outcomes of such efforts.

Literature survey reveals that adoption of organic food would reduce carbon emission, increase soil quality and reduce soil erosion, ensure food security, increase the quality of livelihood and contribute to overall well-being through health impacts (Badgley et al., 2007; Bennett & Franzel, 2013; MacKendrick, 2009). Under a developing country

context like that of Bangladesh, such practical outcomes would immensely contribute to the overall development agenda of the nation.

Therefore, considering the theoretical and practical contributions, the study would immensely be useful to future researchers and practitioners alike. The nature of the investigation would also ensure that the research stays relevant and beneficial both in the global and local context.

### **1.7 Definition of Key Terms**

The following are the definitions of key terms as adopted from various authors and sources for the purpose of this study:

**Organic Food:** Organic food refers to foods grown by farmers who give importance to the use of renewable resources and the conservation of soil and water to augment environmental quality for future generations. Organic meat, eggs, and dairy items must come from animals that are not given antibiotics or growth hormones in the process. Conventional pesticides, fertilizers made with synthetic ingredients or sewage sludge, bioengineering, or ionizing radiation cannot be used in producing organic foods (USDA, 1995).

**Consumer Behavior:** Consumer behavior, as a subject, is the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires (Solomon, 2008). Thus consumer behavior refers to those aspects of human behavior that are related to selection, purchase, use or dispose of products, services, ideas of experience in attaining consumers' needs and desires.

Purchase behavior: Behavior refers to the observable act of the subject (Martin Fishbein & Ajzen, 1975). Thus purchase behavior refers to the overt and observable buying behavior of consumers regarding any product.

Purchase Intention: Intentions are self-instructions to perform particular behavior or to have certain outcomes (Triandis, 1979). Thus purchase intention may refer to the consumers' willingness to perform purchase behavior to have certain outcomes.

Habit: Habit can be viewed as a situation-behavior sequences that are or have turn out to be automatic, so that they take place without self-instruction (Triandis, 1979).

Situational Factors: A consumer situation may be seen as composed of all those factors specific to a time and place (e.g. a purchase situation) which may not originate from a knowledge of personal and stimulus attributes, and which have a demonstrable and systematic influence on customers' current behavior (Belk, 1974). Therefore, situational variables are those variables that consumers do not have immediate control and may not expect to face in a particular purchase situation, but may have important implication in his/her purchase decision.

Trust: Trust is an expectancy of positive outcomes that an individual can obtain based on the anticipated action of another party in an interaction described by uncertainty (Bhattacharya, Devinney, & Pillutia, 1998).

Attitude: Attitude toward the behavior means the extent to which a person has a favorable or unfavorable disposition or evaluation of a behavior (Ajzen, 1991).

Affect: Affect refers to a person's feelings towards and evaluation of some objects, person, issues or events (Fishbein & Ajzen, 1975).



Cognition: Cognition refers to a person's knowledge, opinion, beliefs and thoughts about the object (Martin Fishbein & Ajzen, 1975).

Subjective Norms: It is the consumer's perception that most people who are important to him/her would think he should or should not perform the conduct in question (Ajzen & Fishbein, 1980).

Perceived Behavioral Control: Perceived behavioral control refers to the perceived ease or difficulty of performing the behavior; and also perceived control over performance of a behavior (Ajzen, 2002a).

### **1.8 Outline of the Study**

This tentative proposal consists of three chapters. The first chapter introduces the overall topic and tone of the research. The chapter consists of the background, problem statement, research questions, research objectives, scope of the study, significance of the study and the outline of the tentative thesis.

Chapter two, the literature survey, presents the most important constructs of this study. This chapter also shed lights on previous studies on organic food purchase behavior.

Chapter three discusses the methodological issues of the study. It discusses conceptual framework of the study based on literature review, the relationship between the key constructs and tentative hypotheses of the research.

Chapter four presents the findings based on statistical analysis and interpretation. It elaborates on pilot testing, sample characteristics and model analysis. It includes PLS-SEM results, statistical tests and elaboration of findings in relation to key research questions of the study.

Chapter five contains detailed elaboration and discussion of results in terms of theoretical and practical relationships reported in the study.



## CHAPTER TWO

### LITERATURE REVIEW

Literature review will look into exploring various dimensions of sustainable marketing and green marketing behavior linking to organic foods purchase behavior. Since purchase behavior of organic food can be viewed as a subset of green consumer behavior, a brief discussion on green marketing and green consumer behavior is included. Then this section looks into identifying determining factors that caused consumers to purchase organic food, and look further into current consumer issues relevant to organic food purchase behavior.

#### **2.1 Green Consumerism and Organic Food Marketing**

Green marketing can be viewed as the application of marketing tools to enable exchanges that may meet organizational and individual goals in manners that would help in preserving, safeguarding and conserving the natural environment on a priority basis (Mintu & Lozada, 1993). Thus, green marketing may simply be seen as marketing effort while taking care of environmental issues. Other researchers, e.g., Polonsky (1994) argues that most people believe that green marketing only means the promotion or advertising of products having eco-characteristics with terms such as, recyclable, refillable, ozone-friendly, etc. While these terms are green marketing claims, in general, it is a concept of a much broader range, one that may be applicable to consumer products, industrial goods and even to services. Thus green marketing encompasses a wide range of business activities that may comprise of modification into the design, production process, packaging as well as advertising of the product (Polonsky, 1994). Such modification not only adds to the sustainability of business

operations, but also poses as superiority claims as a means of differentiation proposition to customers. The differentiation attempt has been evident through certification of green products and higher price premium commanded by certified green products as being “different” and “superior” from their non-green counterparts (Crespi & Marette, 2005). Green perception may also contribute to the consumers’ intention of paying more for such products. Many past studies found that consumers were willing to pay price premium for environmentally friendly products (Bang et al., 2000; Laroche, Bergeron, & Barbaro-forleo, 2001; Rahman & Haque, 2011; Lin, 2010).

Such a differentiation proposition, if accepted by consumers, would ultimately impact the environmental well-being via consumers’ adoption of eco-friendly products and producers’ compliance to make more eco-friendly products. It has also been evident from previous studies that many scholars generally assume a link between environmental knowledge, environmental concern and pro-environmental behavior. Past studies supported the assumption that consumers’ environmental knowledge is a significant predictor of eco-friendly products (Pagiaslis & Krontalis, 2014). In fact, it is highly likely that people's level of concern for environment would ultimately inspire them to take action (Swim, Clayton, Doherty, & Gifford, 2009). Past research also indicated that concern about environmental change increases consumers' willingness to alter their behaviors (Semenza et al., 2008).

It may be noted here that eco-friendly behavior does not necessarily mean only purchasing (green products), but other behavior like less consumption, recycling etc. Past studies suggested various dimensions of green behavior like reducing consumption, re-using, re-cycling and purchasing green products as a part of

consumers overall green behavior. For example, Mostafa (2007) observed that, getting involved in environmental-caring activities could be like using recycled packaging, energy saving and composting foods; accepting lower technical performance standards of the products purchased if it is eco-friendly; dependency of purchase decisions on eco-related issues, such as biodegradable, CFC-free, and organic products; willingness to pay higher prices for acquiring eco-friendly goods; and willingness to travel to non-conventional outlets, such as organic food shops, to buy green products. Eco Product Directory (Asian Productivity Organization, 2012) also defined green products based on these dimensions of consumers' green behavior. It defines green products as having the feature of taking care about eco-related issues like recyclability, reusability, refill-ability, long life, degradability, high quality etc. to be viewed in terms of its green performance, energy saving, and composed of recycled materials.

It appears that the types of green consumer behavior as Mostafa (2007) pointed out are also mentioned by other studies in this field. European Commission has their own directives about waste management (European Union, 2008) that deliberates on this 3R framework (Reduce, Re-use, Recycle). Therefore, the green behavior can be broadly classified as:

- Reducing consumption (that saves energy and material inputs)
- Re-using of products (puts less burden on resources)
- Recycling (reduces waste)
- Purchase of environment friendly products (supporting eco-friendly products like hybrid car, green electricity, organic food etc.)

Based on this brief discussion linking green marketing and organic food market, we may logically view organic food as a green product. Since organic foods appear to have far reaching social and environmental benefits, purchase of organic food can be treated as a green consumer behavior by its own right. Therefore, many theories applicable in understanding green consumer behavior may also be applicable in studying the consumer behavior regarding organic foods.

## **2.2 Organic Food Purchase Behavior**

Consumer behavior can be defined as the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy their needs and desires (Solomon, 2008). As a subject, this specialized area of knowledge intersects with a wide array of disciplines like psychology, sociology, anthropology and economics. The current study attempts to measure the organic food purchase behavior and its determining factors in a developing country context like Bangladesh.

This section has been divided into two parts. The first one sheds light on purchase and consumption behavior, and the second part looks into the consequences of organic food purchase behavior.

### **2.2.1 Organic Food Purchase Behavior in Bangladesh**

It has been observed that a very few studies were done to investigate the purchase intention and purchase behavior of organic food in Bangladesh. In addition, studies so far done mostly used exploratory design to focus on customer background and their descriptive preferences. There were other studies in the western context that may lack certain emerging variables which may have significant impact on the purchase behavior. Therefore, a number of potential gaps can be addressed by studying the

consumers' purchase behavior of organic food, and particularly so in Bangladesh context.

Purchase of organic foods can broadly be grouped into a type of environmentally responsible consumer behavior since the production process organic foods takes care of the environmental issues (Grunert & Juhl, 1995). In addition, environmentally responsible purchase behavior can be treated as a socially conscious behavior (Anderson Jr. & Cunningham, 1972; Sarumathi, 2014; Pepper, Jackson, & Uzzell, 2009) because the behavior (e.g., buying eco-friendly products) may reflect a conscious consideration for the environmental. Under Bangladesh context, consumers' environmental awareness and attitude towards environmental conservation due to organic farming have been found to be related to their perception of organic food. For example, Mukul et al. (2013) found that consumers perceive organic food to be environmentally friendly. Other researchers indicated that the profile of organic food purchasers refers to those customers who belong to the middle and upper-income group of people, therefore, the level of awareness was found to be more than other income groups since they had higher level of education as well. This urban centric customers, being aware of environmental and safety aspects of organic foods, tend to prefer organic foods instead of conventional ones (Sarker & Itohara, 2008). Therefore, it needs to be seen whether there are still sufficient evidence of such findings under the current market context in Bangladesh. Since environmental concern may not always translate into actual purchase behavior (Ohtomo & Hirose, 2007), other consumer related issues like consumers' health concerns, acceptance of price premium, product availability and trust in the product also need to be studied.

Many past studies also found that consumers buy organic foods for health benefits (Magistris & Gracia, 2008; Magnusson, Arvola, Hursti, Åberg, & Sjöden, 2003; Paul & Rana, 2012; Thøgersen & Zhou, 2012; Crinnion, 2010). Some authors found that many consumers might prefer organic food due to protective motivation to keep themselves away from diseases (Makatouni, 2002; Ritson & Oughton, 2007). Other studies, though somewhat skeptic about potential disease-preventing properties of organic food, ultimately conceded to the fact that there is a great potential of disease-preventing nature of organic foods due to its superior nutritional contents (Huber, Rembiałkowska, Średnicka, Bügel, & van de Vijver, 2011). Thus, purchasing organic foods can be considered as a behavior related to health too. Studies under Bangladesh context also indicates on this health aspect of organic foods, implying that health concern could be a reason for organic food choices (Mamoon & Haque, 2013). Rationally, it follows that the purchase behavior for organic foods may have certain differences with purchase behavior of other types of day-to-day consumer products.

Some studies indicated that the difference between purchase behavior of organic foods vs. the purchase behavior of other day-to-day consumer products is primarily held in underlying motivation of consumers (Zanoli & Naspetti, 2002; Idda, Madau, & Pulina, 2008; Christos, George, & Anastasios, 2009). Generally, it is understood in the consumer behavior literature that the purchase of a particular product or service is steered by an evaluation of costs of acquiring vs. benefits accruing out of the product. Such mental calculation of cost-benefit determines the strength of motivation or intention to actual behavior. However, unlike most consumer products, the benefits that accrue from purchasing organic foods are mostly future-oriented and unlikely to belong to only the person performing the behavior (Kim, 2011). For example,



consumers' health concerns stemming from food products are primarily due to food safety issues related to conventional foods.

Food safety has been an alarming issue in Bangladesh. This leads to health issues among consumers, stemming from adulteration of common food items (Huda et al., 2009). There are frequent news reports on health hazard and adulteration of common food products in local media (Hasib, 2014). The chemicals used in food items include formalin, calcium carbide, sodium cyclamate, coloring agents, dye, urea, DDT (dichloro-diphenyl-trichloroethane), aldrin, chlordane, heptachlor, melamine, burnt engine oil, hormone and Sulphuric acid (Islam & Hoque, 2013; Rahman, 2014). Consequently, other studies found that adulterated foods have serious health impacts, which can cause diseases like cancer, kidney and liver failures, memory loss, respiratory problems, anemia, infertility, damage to cardiac system, etc. (Munikrishnan, 2015). Besides hazards of intentional adulteration of food products in the supply chain, there are concerns of pesticide and hormone residues in food products also. Low level of pesticides are reported to be present in tea products in Bangladesh (Islam & Hoque, 2013). On the other hand, antibiotic residues were reported in meat products (Sattar, Hassan, Islam, Alam, & Faruk, 2014). In contrast, researchers indicated that consumers in Bangladesh have a general perception of organic foods as being healthy since these are free from pesticides and other contaminants (Sarker & Itohara, 2008; Mamoon & Haque, 2013). Therefore, researchers suggested that consumers' awareness of such issues have actually raised their preference for organic foods in Bangladesh.

Another study conducted by Mukul, Afrin, and Hassan (2013) confirmed the aforesaid finding that the rising demand for organic foods is partly due to health concerns associated with risk perception of conventional foods. Therefore, it is

possible that health concerns could be a determining factor in their purchase intention and behavior regarding organic food. However, the controversy remains as to why consumers' adoption of organic food is still low compared to conventional foods if consumers were really aware of health issues. Therefore, understanding the purchase behavior of organic foods will probably shed new light in investigating the motivation and determining factors of such behavior.

In studying purchase behavior of organic foods in Bangladesh, it may be noted here that organic foods are not required to be certified for domestic sales in Bangladesh. Therefore, organic foods are traded in the domestic market based on growers' declaration on one hand, and buyers' trust on special outlets for the purpose. In many countries, such uncertified, yet de facto organic foods are defined as "Organic by Default" (Kristiansen et al., 2006). Probably because of this limitation, consumers' trust on the seller/distribution channels is extremely important under the context of Bangladesh. In fact, the lack of trust was indicated by past researchers when they talked about consumer issues under Bangladesh context. Majority of studies noted that consumers have doubt on the authenticity of organic foods available in the market (Rahman et al., 2007; Sarker & Itohara, 2008). As already mentioned, consumers' lack of confidence may also stem from the fact that organic foods do not require official clearance for domestic sales. Some researchers found that consumers in Bangladesh expect official certification for domestic sales since they do not feel confident about the authenticity of available organic foods (Rahman et al., 2007; Sarker & Itohara, 2008). In a more recent study, about 43% of respondents believed that organic foods in Bangladesh are really authentic (Mamoon & Haque, 2013). Therefore, it appears that lack of confidence in the authenticity of organic foods could be a plausible explanation for low level of consumer adoption in this sector. This is

probably the reason why in the urban set-up, only renowned mega-stores like Agora, Meena Bazaar etc. deal in organic foods. Besides these mega stores, the Non-Government Organizations (NGOs) like PROSHIKA and UBINIG who pioneered the organic cultivation in Bangladesh, also have their specialized outlets in urban set-up.

Another suspected reasons why organic food market is based on urban customers is its premium pricing, thereby limiting affordability except for the affluent customers (Parveen, 2008). For example, past studies unanimously reported that consumers perceive organic foods to be of high price, however, it was also reported by majority of studies that consumers are willing to pay higher price for such products (Sarker & Itohara, 2008). Similarly, other studies found that customers appear to be willing to pay higher prices for organic foods in Bangladesh (Rahman, Omar, & Ullah, 2007). Therefore, the current study may look into more important consumer issues like trust and convenient access to retail stores selling organic foods.

Access to retail stores has been mentioned as an important determinant of actual purchase behavior (Mamoon & Haque, 2013). Many consumers reported that the difficulty of accessing organic food stores is a bottleneck in their frequent purchase decision. The study found that majority of respondents prefers to have an organic outlet in major areas of Bangladesh. Consequently, Shabnam (2013) proposed that availability is an important issue to organic food customers, therefore, should be considered as an important determinant of consumers' intention under Bangladesh context. Another reason why consumers may want retail outlets in major areas is that consumers prefer to buy organic vegetables more frequently (like twice a week) to ensure access to fresh ones (Mamoon & Haque, 2013). If outlets are far from major areas, it will act as a limiting factor for consumers in making frequent trips for

shopping. It appears that, location of retail outlets not only ensures accessibility, but also impacts the perception of quality among potential and actual customers.

Past studies also observed that, despite expanding distribution network of organic foods in urban set-up, the internal demand is still to be considered low in Bangladesh (Mukul et al., 2013). Although both urban and rural consumers may contribute to this low but growing demand of organic foods, there are reports of different consumer behavior based on urban and rural segments. For example, the study done by Mukul et al. (2013) draws a line between urban and rural consumption behavior of organic foods. Consumers in the urban and primarily affluent segment look for organic foods mostly on the demarcated shelves in renowned mega-stores like Agora, Meena Bazaar etc. There are also specialized agriculture outlets (like *Mohammadpur Krishi Market*) where customers may look for organic foods. In line with global trend, organic foods command price premium to customers in most Bangladesh markets.

The study (Mukul et al., 2013) also sheds light on organic food behavior in the rural set-up. Since most commercially grown organic foods are cultivated under contract farming through private enterprises/NGOs, the farmers who grow organic foods for their personal consumption usually do so in their homestead (backyard garden). Subsequently, these rural farmers often sell their surplus production to local market (Uddin et al., 2011). It is most likely that rural customers buy those products not being aware of its organic nature, but perceiving them as “local” food. Though any definitive study in Bangladesh can hardly be found on the consumers’ perception of taste of local foods, it was reported in other studies in western context that consumers usually find “local” foods tastier than other types of foods (Spiller, 2012). Since rural consumers in Bangladesh buy homestead farmers’ surplus production from the local farmers’ market, it is possible that they might think those products to be tastier based

on ‘local’ perception. This is quite different from urban consumers who need to go to specialized stores to find organic foods in a labeled corner and be willing to pay more than the conventional foods. The current research proposes to look into this urban consumer segment and study the determinants of purchase behavior.

However, the low level of domestic demand as reported by past studies, can hardly be explained by the high level of willingness to buy organic foods and concern for environment (Sarker & Itohara, 2008). It is indicated that, although the domestic demand of organic food is on the rise, the proportion of organic food to total food portfolio is still low. The situation actually resembles the global scenario. For example, in the USA, organic foods constituted about 3.5% of total foods sales (Osteen et al., 2012). In the case of Asian countries, while there are many growers and exporters of organic foods, the region’s internal demand is very low as compared to global trend (Kim, 2013; Willer, Lernoud, & Kilcher, 2013).

Among the organic food categories sold in Bangladesh, the most popular organic food appears to be rice varieties, followed by vegetables and tea (Mamoon & Haque, 2013). The study also found that, most vegetable consumers prefer to visit market twice a week in order to have fresh supply of vegetables. Consumers were also found to be willing to consume organic vegetables and pay higher prices for it. The current study will look into the determinants of purchase behavior of organic foods as a category in Bangladesh.

It may be understood from the literature review that majority of studies on organic food consumers in Bangladesh were exploratory in nature, therefore, it is difficult to conclusively infer about purchase behavior and motivation of such behavior. It is expected that, understanding behavior of organic food consumers will shed light on

future policy issues, demand estimation, designing marketing programs as well as promotion of such foods for greater benefits of both the growers and consumers.

### **2.2.2 Consequences of Organic Food Purchase Behavior**

Cultivation and consumption of organic foods have far reaching consequences for the society and economy. The current study will look into three dominant areas where the adoption of organic food yields multifarious benefits to its stakeholders.

First, organic foods are believed to be a healthy choice by majority of food experts (Kearney, 2010). Scientific evidences also suggests that in many cases, organic foods are more nutritious and appears to be tastier than conventional foods (Benbrook et al., 2008; Schifferstein & Oude Ophuis, 1998). Food experts and scientists unanimously agree on the fact that the organic food does not contain harmful pesticide (Krieger-Steffen, Boland, Lohscheidt, Schneider, & Stolze, 2010), however, scientific community may disagree on what is the safe level of pesticide presence in foods and off-setting benefit accruing out of fruit consumption that may still ingest low level of pesticides (Reiss, Johnston, Tucker, DeSesso, & Keen, 2012). In order to evaluate such claims that accrued benefits of fruit consumption outweighs the low level of pesticide contamination in conventional fruits, we may look into what consequences are suspected of low level pesticide contamination. Past scientific studies suspect that, continued exposure of low level of pesticide contamination for a long time may lead to certain health risks like pre-mature greying of hair, pre-mature ageing and cancer (Halder, 2007; Hayes, 2004). In order to be on the safe side, it seems that a cautionary approach would be justified in favor of consuming organic food until further scientific proofs are there in favor of conventional and low contaminated

foods. Therefore, adoption of organic food is expected to promote health and well-being of consumers.

The second dominant area where organic food adoption may greatly contribute is the prevention of environmental degradation. It has been suggested by many studies that organic food is friendly to environment because of its resource conserving nature (Francis & Hodges, 2009), its ability to reduce chemical contamination in water and soil (Partap & Saeed, 2010), its friendliness in maintaining bio-diversity (Bengtsson, Ahnström, & Weibull, 2005) and its ability to prevent soil erosion (Siegrist, Schaub, Pfiffner, & Mäder, 1998). Evidently, all these environmental benefits are expected to have far reaching social and economic implications for any country.

The third dominant area of influence would be the economic impact. A bigger market due to higher level of organic demand will mean bigger business and higher income for farmers since organic foods are mostly sold at premium prices (D'Souza, Taghian, Khosla, & Souza, 2007). It has also been observed that, while many developing countries are producers of organic foods, they are not necessarily the consumers themselves (Kim, 2013; Soil Association, 2013). Due to rising export markets, these countries may earn foreign currencies that are critically needed for their economic development. In addition, organic food can greatly add to the food security of the world. Past studies have also substantially proved that organic food cultivation is sustainably productive and can feed the world population (Badgley et al., 2007; Hewlett & Melchett, 2008).

There are other encouraging studies that report improvement in overall livelihood because of organic farming. In a study conducted in Africa and Latin America, 31 documented cases were analyzed where the farmers under study were converted to

organic agriculture (Bennett & Franzel, 2013). The authors assessed the impact of organic farming on farmers' livelihoods and reported that the yield went up in 19 of the 25 cases, food security improved in seven of eight cases, and net income rose in 19 of 23 cases. Although the authors cautioned not to make any generalization of these results because of small sample sizes, yet the results somewhat indicate the tentative positive effect of organic farming on overall livelihood improvement of farmers. Evidently, these outcomes may be expected to have positive spill-over effect on the national economy.

Therefore, considering the environmental, health, social and economic benefits of purchasing organic foods, stakeholders should play their respective roles in encouraging consumers to involve in purchasing organic foods.

### **2.3 Purchase Intention**

Intentions are self-instructions to perform particular conduct or to have certain outcomes (Triandis, 1979). Ajzen and Fishbein (1980) defined behavioral intention as self-prediction, a measure of the likelihood that a person will engage in a given behavior. Intention has been an important and widely used construct in explaining consumer behavior in many instances (Armitage & Conner, 2001). According to Ajzen (1991), intentions are assumed to account for the motivational factors that may predict a behavior. Other scholars also opined in similar ways, that the intentions are the best individual indicators of planned behavior and are an unbiased indicator of an effort (Bagozzi, Baumgartner, & Yi, 1989). This line of thoughts primarily supports the TPB model where Intention has been treated as a mediator between antecedent factors and actual behavior. Fishbein and Manfredo (1992) posit that the examination of determinants of intention to perform a certain behavior is almost the same as the



examination of the determinants of the behavior itself. Therefore, in marketing and consumer behavior studies, intention is oftentimes considered as a proxy for measuring variables like purchase behavior and consumers' choices and loyalty status (Kozup, Creyer, & Burton, 2003; Shaw & Shiu, 2003). Many past studies invariably followed this assumption that measurement of intention is sufficient since intention predicts the behavior. For example, Holst and Iversen (2011) studied intention to use personal care products as a proxy for purchase behavior; Moss, O'Connor, and White (2010) investigated student's intention to use podcast as a learning tool; Kemp and Bui (2011) studied intention leading towards brand commitment and connection; Knabe (2012) examined the intention to adopt online course instruction; Lee, Cerreto, and Lee (2010) studied intention to use computers to formulate and deliver lessons; Soyez (2012) found that national cultural values significantly affect intention which significantly influences consumer purchase behavior; Ouellette and Wood (1998) reported in a meta-study of 64 research papers that intention significantly affects behavior; Ha and Janda (2012) studied consumers' intention to purchase energy-efficient products, etc. All these studies assumed that measuring intention invariably leads to measuring potential behavior; therefore, examining intention could be treated as a proxy for examining actual behavior.

According to Aertsens and Verbeke (2009), many past studies related to organic food or green purchase behavior also took this approach of taking intention as a proxy of actual behavior. For example, in predicting eco-friendly behavior, Mostafa (2006) studied consumer intention to buy green products; Hartmann and Ibáñez (2012) studied consumer intention to buy green energy brands; Amran & Nee (2012) examined intention on sustainable food consumption; Kim and Chung (2011) studied consumer intention to purchase organic personal care products; Rahim, Shamsudin,

Mohamed, & Radam (2013) studied consumer intention to buy green food products; Yin, Wu, Du, and Chen (2010) examined consumer intention to buy organic foods. All these studies investigated consumer intention with the key assumption of the TPB model that intention leads to behavior. Such assumptions are actually supported by two meta-analytical papers which investigated past studies in the context of eco-friendly behavior, including various pro-environmental activities. The meta-analysis reported a synthesis of the main categories of variables studied by past researchers. Both the papers found that the strongest predictor of eco-friendly behavior was consumer's intention to act (Bamberg & Möser, 2007; Hines, Hungerford, & Tomera, 1986).

However, the following section will present an alternative argument that this has not been a straightforward case as many researchers had assumed in the past.



#### **2.4 Intention-Behavior Gap**

Although many scholars maintained that intention could be a good predictor of actual behavior, other studies also found discrepancies between intention and behavior. The relationship between intention and behavior is oftentimes termed as “modest” (Armitage & Conner, 2001). This issue has been well-reflected in some studies that mentioned the difficulty surrounding this relationship. For example, Follows and Jobber (1999) posits that the intention is the key predictor of buying behavior, though the measurement of exhibited buying intentions and the comparative evaluation between exhibited buying intentions and actual buying behavior may have been difficult.

It can be inferred from the review of literature that certain factors must be present to create a strong relationship between the intention and actual behavior so that intention can easily be taken as a proxy for measuring actual behavior. According to Fishbein and Ajzen (1975), buying intention and buying behavior are expected to have strong link when measured at the same level of specificity with respect to the action, target, context, and time frame. Moreover, the time gap between buying intention and buying behavior should be short enough to warrant that intentions have not altered (Randall & Wolff, 1994).

It is evident that many studies taking TPB as their framework found that the purchase intention did not necessarily translated into purchase behavior (Armitage & Conner, 2001; Niessen & Hamm, 2008; Zuur & Fuchs, 2010). One elaborative study by Kollmuss and Agyeman (2002) analyzed such discrepancy across a wide array of studies and attempted to identify probable reasons behind this phenomenon. Sheeran (2002) reported in a meta-study that the intention explained 28% variance in behavior. Similarly, Bamberg and Möser's (2007) meta-analysis of 57 published papers revealed that there is an intention–behavior gap that needs explanation. The analysis showed that intention explains only 27% of the variance in self-reported eco-behavior. Therefore, the explanation behind closing this gap requires further systematic investigation.

It is to be noted here that these studies attempted to measure self-reported behavior. It appears that people usually tend to overstate their intention towards behavior when there is a time-gap between the intention and actual behavior (Koehler & Poon, 2006), which may produce inaccurate predictions. Hence, there is a potential gap in studying temporal elements in purchase intention and purchase behavior in order to explain the factors that may account for the variation between intention and action.

Addressing this issue specifically for organic food market, it is observed from literature survey that most past studies on organic food investigated into Purchase Intention rather than actual purchase behavior. Many studies that investigated purchase behavior, inconsistencies have been reported between purchase intention and purchase behavior (Padel & Foster, 2005; Vermeir & Verbeke, 2008). For example, Niessen and Hamm (2008) found in a study that 50% of consumers, on average, said that they purchased organic products, but in reality only 15% bought what they said. Other studies conducted by Lockie and Lyons (2002), Aertsens and Verbeke (2009), Thøgersen (2009) and Zhou (2013) reported such intention-action gap for organic food consumers. Another study documented such gap across a wide array of ethical purchase intention and behavior cases, including purchase intention and behavior of organic food customers (Carrington et al., 2010). Before deliberating on what variables researchers have recommended to explain this intention-action gap for organic food consumers, a critical review of original literature by the proponents of TPB in this respect seems necessary.

Fishbein and Ajzen (2005) indicated some of the dimensions of TPB-based studies for which the intention-behavior gap may exist. One of the reasons that intention-action gap exists is due to the lack of “intention stability”. One way to measure intention stability is the time passed between intention formation and actual action. Studies reported a negative correlation between the time passed since intention formation and action taken (Randall & Wolff, 1994; Sheeran & Orbell, 1999). It means that intention becomes less stable as time-gap increases, thus leading to deviance in action. Similarly, a meta-analysis confirmed the aforesaid argument and found that there was a significant positive relationship between intention-stability and actual behavior, even though many inconsistencies in measurement were observed (Kellar & Hankins,

2013). Another study by Ittersum (2011) reported similar results, with the addition that the intention-action inconsistency resulting from time gap may be higher for high-risk products and lower for low-risk products.

The second element that Fishbein and Ajzen (2005) reported was the Intention-Action Compatibility. The lack of compatibility between intention and action measurements may lead to weak relationship between them. It was argued that the general attitudes may fail to predict specific behaviors because of incompatibility in the action, context, and time elements. Authors also posit that the attitude is usually directed only to the target object, while a specific behavior means a specific conduct aimed at the target object in a given context and time. Therefore, it seems important to ensure measurement compatibility while evaluating the intention-action relationship.

The third element mentioned was the Literal Inconsistency between intention and behavior, meaning that even after ensuring measurement compatibility between intention and behavior, study results might show discrepancy between what people expressed as their intention and what they actually did (Martin Fishbein & Ajzen, 2005). It was argued with examples that such literal inconsistency is asymmetric, meaning that those who do not intend to perform an action will most likely not do it in future; however, those who intend to perform an action, many of them may not do so in future. It appears that the intention-action gap is more pronounced in “positive intention-actual action” gap rather than “negative intention-no action” gap. The concept of Pseudo Inconsistency (D. Campbell, 1963) was elaborated to explain this asymmetric literal inconsistency. The concept argued that literal inconsistency results from the fact that people tend to deviate in action from intention when the action is difficult to perform, but people with moderate dispositions seem to show behaviors consistent with the disposition when the behaviors are not difficult to perform.

However, posterior empirical studies contradicted Campbell's findings and left this proposition somewhat unresolved. Further investigation may be warranted in this aspect of intention-action inconsistency dimension.

The fourth element was the introduction of Implementation Intention originally proposed by Gollwitzer (1999). It was argued that, in many instances, the intention-action gap can be closed by prompting people to form an implementation intention. This refers to the formation of intention centering on the specificity of time, place and situation so that such intention influences the decision maker with a memory effect and commitment. This type of time, place and situation specificity of an intended action may confer a number of particular cues that can aid the decision maker in recalling the intention and make it more probable that the intention will be implemented. In other words, it is conceivable to characterize the effectiveness of implementation intentions to a projection of commitment they confer in people's minds. In the context of consumer behavior, once a customer clearly expresses the willingness and the specificity of an action in a certain situational and time dimensions, he/she most likely makes a commitment to implement the intention. Studies conducted in this aspect of implementation intention confirmed that such commitment can greatly increase the probability that people will perform the action as intended (Ajzen, Czasch, & Flood, 2009).

The fifth element was the intention-action gap arising out of measurement issue while measuring behavior vs. goal. Past studies indicated that there is a distinction between behavior and goal, indicating that this difference calls for treating intentions as immediate antecedents of behavior or action, but not of goal attainment. It was argued that, behavior is more under volitional control unlike goal attainment, since the latter depends not only on the person's behavior but also on other factors. These factors

may not be within immediate control of an individual, thus may not play a role in the actual behavioral performance. It is likely that in many instances, apparently volitional behavior may be subject to incomplete volitional control, therefore, the difficulty of measurement issues rises. It was further argued that, since behavior is more toward the volitional end of the continuum and goal is more toward the non-volitional end of the continuum, a measure of intention is supposed to predict a behavior or goal achievement only to the range that these criteria are under volitional control of the decision maker. Therefore, weak correlations between intentions and actions, as were reported by some empirical studies, could have been because of measuring behavior or goal that is more toward non-volitional end. This has been reported by other studies that when behavior is more toward non-volitional end, the measurement of perceptions of control can make an important contribution in addition to mere intentions (Madden, Ellen, & Ajzen, 1992). On the other hand, when behavior is more toward volitional end, intentions appear to be good predictors of behavior whereas the contribution of perceived control is very low (Courneya & McAuley, 1995). It follows that the degree of volitional control must be high when TPB or its variants may be taken as research framework for any study, thus requiring special attention to subsequent measurement issues.

Based on the foregoing review of what Fishbein and Ajzen (2005) elaborated about Intention-Behavior gap, it must be evident that the inclination of the explanation was more towards underlying dimensions of the variables used in the TPB model and validity of measurement issues, and less towards including potential variables into the model. However, the original proponents of TPB explicitly left the possibility of including new variable open to empirical researchers (Fishbein & Ajzen, 2005). This provides an opportunity or gap to be studied in future investigations.

In addition to explaining the gap between intention and action based on measurement issues, it is necessary that other factors of the TPB be considered while accounting for the variance in actual behavior. As indicated by the TPB, the antecedents of the intention of performing an action include certain personal factors like attitude, norms and behavioral control. It seems reasonable to look into the causal variables preceding intention, pending further investigation on potential variables that could be included in the model.

## **2.5 Antecedents of Purchase Intention**

Based on the Theory of Planned Behavior and also the IBM, the antecedents were identified as attitude, subjective norms and perceived behavioral control. Findings from literature survey are presented in the following sub-sections.

### **2.5.1 Attitude and Behavior**

Attitude toward the behavior means the extent to which a person has a favorable or unfavorable disposition or evaluation of a behavior (Ajzen, 1991). The more positive the attitude towards a behavior, the stronger is the person's intention to perform that behavior. Ajzen (1991) classified attitude into two broad groups. One includes general attitude, and the other includes behavior specific attitude. An important distinction has been drawn by Fishbein and Ajzen (2005) in defining these two types of attitudes that seems to be important when it comes to issues of measurement and making a causal inference. A parallel distinction was also made between broad behavioral categories (called "multiple-act aggregates") and single behavior.



General attitude has been broadly defined as attitudes toward physical objects, racial or ethnic groups, institutions, policies, or other general targets. This refers to a general and broadly defined positive or negative disposition about those elements in people's minds. On the other hand, the second type of attitude called the "attitudes toward a behavior" refers to the predisposition aimed at performing specific behaviors with respect to an object or target. It is argued that, general attitude may fail to predict specific behavior in many cases since such attitude can lead to behavior only under certain circumstances and personality factors, thus leading to a lack of predictive validity. On the other hand, when the behavioral criterion is broadly representative of the behavioral domain, rather than a single action, strong relations between attitudes and behavior are observed (Martin Fishbein & Ajzen, 1975). This "principle of aggregation" combining multiple behavioral actions representing a particular behavior domain under study, will most likely measure the attitude with predictive validity. Based on this analytical premise, it is important that representative actions concerning attitude be identified from the behavioral domain (e.g., consumption of organic foods) before determining the components of attitude construct in this case.

Despite all these measurement and compatibility issues, attitude towards consumption of a product or service has been found to be one of the most important predictors of consumers' choices, including food preferences (Bredahl, 2001; Kim & Hunter, 1993; Conner, Povey, Sparks, James, & Shepherd, 2003). In most food related studies, it was observed that attitudes act as a significant antecedent of purchase intention (Povey, Wellens, & Conner, 2001; Arvola et al., 2008). Most green behavior studies including studies concerning organic foods, attitude construct has widely been employed from reasoned action perspective which assumes that people's behavior follows reasonably from their beliefs, attitudes, and intentions.

In line with this reasoned action perspective, Sparks and Shepherd (1992) and Saba and Messina (2003) found that people with positive attitudes towards consumption of organic food are more likely to demonstrate intentions to consume such food, thereby translating positive attitude to purchase intention. Other studies also found positive and significant relationship between favorable attitude toward organic food and purchase intention (Gracia & Magstris, 2007; Dean, Raats, & Shepherd, 2008; Leonidou, Leonidou, & Kvasova, 2010).

In line with various types of consumer attitudes towards organic foods, four dominant types of attitudes will be studied in depth: health attitude, cognitive attitude, affective attitude and environmental attitude related to organic foods. These four types of attitudes will be modeled as first order constructs, leading to the overall attitude as second order construct in the proposed research framework. The following subsections presents literature review on these four types of specific attitudes.

#### **2.5.1.1 Health Attitude towards Organic Food**

Consumers' positive attitude towards organic food may stem from safety and health perception of organic food. Personal health has been reported to be one of the most dominant reasons among consumers in purchasing organic foods (Soil Association, 2013; Kriwy & Mecking, 2012). Other studies also mentioned similar results that health concern is an important driving factor for consumers in purchasing organic foods (Magnusson et al., 2003; Kesse-Guyot et al., 2013; Yin, Wu, Du, & Chen, 2010). The positive association of organic food with health perception may stem from the fact that organic foods do not contain any pesticide residue, and some foods are more nutritious than genetically modified foods (Crinnion, 2010). Increasing media coverage on food scares and also news reporting on debates and controversies over pesticide residues and GM foods might have contributed to this positive health

association with organic foods (Cahill, Morley, & Powell, 2010; Hughner et al., 2007).

However, some studies contradicted the popular findings that health concern is driving organic food sales. A study by Michaelidou and Hassan (2008) found that such health concern is not significant in organic food purchases. In another study, Zepeda and Li (2007) reported no significant relationship at the 5% level between personal health concern and purchase of organic food, using national survey data. The study also found no significant relationship between environmental concerns and organic food purchase. Some scholars also reported that health concerns were not significantly related to general attitude towards organic food (Tarkiainen & Sundqvist, 2005; Jolly & Dhesi, 1989). One study suspected that, health concern might vary subject to the type of food under consideration, thereby requiring caution in generalizing these findings that are specifically valid to a particular food category (Tarkiainen & Sundqvist, 2005). These conflicting results might require further investigation into health concern as a part of attitude construct and measure the relationship of attitude and purchase intention.

#### **2.5.1.2 Cognitive and Affective Attitude towards Organic Food**

Other dimensions of attitude construct also needs attention in the reasoned action approach to account for variance in intention and behavior. Many scholars confirmed that attitude has been a complex construct composed of separate affective and cognitive elements (Edwards, 1990; Trafimow & Sheeran, 1998; de Mooij, 2010). The affective component is defined by feelings that people may have towards the attitude object and the cognitive component is defined by thoughts that people have

about the attitude object (Eagly & Chaiken, 1993). Though they are distinct attitude elements, it seems that two conceptual systems (cognitive and affective) act in a simultaneous way (Shiv & Fedorikhin, 1999).

However, many researchers criticized the TPB for lack of sufficient coverage for affective impact on behavior. The assumption that attitude is founded upon cognitive beliefs has been continually questioned by scholars. The “rationality” assumption has been challenged by numerous authors and the model has been a subject of criticism for insufficient coverage of affective dimension of attitude (Fazio & Petty, 2008; French & Sutton, 2005). However, the proponents of the TPB, in their latter writings, accepted the fact that affective dimension has received little attention in the framework, even though emotional factors may have great potential to influence intention and behavior (Martin Fishbein & Ajzen, 2005). The existing framework was defended by referring to the fact that emotional factors influence behavior indirectly since these factors are ingrained in individuals’ background and mood.

Due to this complex nature of cognitive and affective attitude and expected influence on intention and behavior, some researchers opined that simultaneous inclusion of these two components of attitude construct may provide better explanation of behavior than the evaluation of a single component (Bagozzi & Burnkrant, 1979). It is also argued that emotional elements influence attitudes in a unique way (Lavine, Thomsen, Zanna, & Borgida, 1998). Similar suggestions were made by other scholars that emotions have potential to explain pro-environmental behavior – or its rejection (Fraj & Martinez, 2006).

Despite this potential influence of emotional component on consumer decision making process, many scholars reported that this component is understudied in the

literature (Bagozzi, Gopinath, & Nyer, 1999; Kim, Chan, & Chan, 2007; Perlusz, 2004; Hartmann, Ibáñez, & Sainz, 2005). Such a scant study of emotional effect on purchase behavior could partly be due to the measurement difficulty of emotion as a construct (Izard, 2010), or due to the “rationality theme” centering primarily on cognitive aspect that received the most attention in organic food research agenda (Hughner et al., 2007). Thus many scholars insisted on further research into the consequences of emotions on pro-environmental purchase behavior (Hartmann & Apaolaza-Ibáñez, 2012; Hartmann et al., 2005). Specific to organic food sector, this deficiency in analyzing the influence of affective attitude appears to be still existent. For example, in a meta-study of organic food researches, Aertsens and Verbeke (2009) observed that emotional attitude has been an understudied dimension in organic food behavior research. They also opined that past findings might have been inconclusive on the effect of cognitive component of attitude on purchase intention. Therefore, cognitive and affective attitude warrant concomitant investigation in studying organic food purchase behavior.

### **2.5.1.3 Environmental Attitude towards Organic Food**

While environmental concern has been defined in many ways, Dunlap and Jones (2002) appear to have given a comprehensive definition. Environmental concern has been defined as the awareness of an individual about the ecological problems, his/her efforts to solve them or the level of his/her commitment to exert such efforts. Increasing level of environmental concern among consumers is motivating them to prefer environmentally beneficial products, particularly organic foods (Dettmann, 2008). Many past studies reported that, besides health concerns, one of the buying

motivations of organic food is the consumers' concern for environment. Hughner et al. (2007) mentioned that the customers' motivation to buy organic products is influenced by their eco-concerns.

Many past studies considered this eco-concern synonymously with environmental attitude (Chan & Lau, 2004), thus eco-concern can be seen as a part of broader attitude construct. In general, a positive attitude to ecological issues is positively identified with the organic food purchases and repeat purchases over time (Grunert & Juhl, 1995). Davies, Titterington, and Cochrane (1995) also found that environmental concern was the dominant influencing factor in purchasing organic foods. A study done by Squires, Juric, & Cornwell (2001) showed that those consumers having a positive attitude for the environment, have higher probability of purchasing organic products than those consumer who holds weaker or negative views of environmental concerns.

However, despite supporting evidence that environmental concern has been an important component of consumers' attitude, this component may not be as important as health concerns of consumers. For example, some studies found that attitude towards ecological issues explain smaller contribution to purchase decision of organic foods than that of health concerns (Padel & Foster, 2005; Krystallis & Chryssohoidis, 2005; Chen, 2007). Other studies, primarily done with organic fruits and vegetable products, reported similar findings about the relationship of the environmental concern and organic food purchases (Magistris & Gracia, 2008; Kuhar & Juvancic, 2010).

Still, there are some studies that contradict the past findings even more. Alwitt and Pitts (1996) cited past studies and mentioned that consumers' purchase intention of

organic food may not be related to environmental concern. Ohtomo and Hirose (2007) opined that environmental concern does not always lead to environment-friendly behavior. According to Kollmuss and Agyeman (2002), environmental attitudes have been found to have a varying, usually very small influence on eco-friendly behavior. The authors referred to a study by Diekmann and Preisendorfer (1992) where this apparent contradiction was explained by employing a low-cost/high-cost model. It is proposed that individuals will adopt an eco-friendly behavior that involves the least cost, time and effort. An attempt was made to demonstrate that environmental attitude is primarily linked to low-cost eco-friendly behavior. It follows that, eco-conscious individuals will most likely engage in actions such as recycling, but may not necessarily involve in actions that are expensive and not so convenient. It can be deduced from their argument that people will most likely act pro-environmentally as long as their pro-environmental attitude matches with their expected personal benefits. This was also noted by Ajzen (1991) that people will agree and purchase green product when their pro-ecological behavior associates with their values / self-interests, and this behavior is also normative.

Another explanation of weak relationship between environmental concern and eco-friendly behavior is given by Bamberg (2003). He posits that the weak relationship between eco-concern and particular eco-friendly behavior is due to the mistaken assumption that general attitudes like eco-concerns are direct determinants of specific behaviors. Consequently, it is proposed that eco-concern may no longer be viewed as a direct determinant of eco-friendly behavior, rather be treated as an indirect one. The weak relationship between eco-concern and pro-environment behavior (like organic food choice) is also reported in other subsequent studies. In a qualitative study by Campbell-arvai (2011) on food decision making, respondents rarely mentioned

environmental concern as a determining factor for food choices. In a causal study conducted by Yin, Wu, Du, and Chen (2010), weak relationship is reported between environmental concern and purchase intention of organic food. In addition to contradictory findings, it has also been reported that the impact of environmental concerns on purchase of organic foods is understudied in Asian context (Shabnam, 2013; Zeinab & Seyedeh, 2012). Therefore, environmental attitude warrants to be investigated in determining the influence on organic food purchase behavior.

After deliberating on various attitude dimensions, the following sections discusses further on other antecedents of Purchase Intention like Subjective Norms and Perceived Behavioral Control.

### **2.5.2 Subjective Norms**

Another important factor that may affect behavior is the subjective norm, as proposed by TPB (Ajzen & Fishbein, 1980). Subjective norm refers to the perceived social pressure to perform or not to perform the behavior. This is composed of injunctive norms and descriptive norms (Cialdini, Reno, & Kallgren, 1990). Injunctive norms refer to what is usually approved of, i.e., what ideally ought to be done; on the other hand, descriptive norms refer to what people do in reality (Lapinski & Rimal, 2005). Consequently, the perceived norms provide information as to what is normal behavior (Kallgren, Reno, & Cialdini, 2000). In some studies concerning organic foods, subjective norm has been found to have significant effect on purchase intention (Dean et al., 2008). Other studies found that, though subjective norm and perceived behavioral control might have effect in purchase intention of food products, attitude seems to be a better predictor than those predictor variables (Backman, Haddad, Lee,



Johnston, & Hodgkin, 2002). Similarly, Vermeir and Verbeke (2008) found weak relationship between intention and subjective norm in a study on sustainable food products.

According to Aertsens and Verbeke (2009), although both types of norms (descriptive and injunctive) were found to influence behavior, they do not function in the same way, in fact, importance of norms to individuals determines which norm will be activated in a particular situation. However, it was reported that most researchers worked with one type of norm at a time, therefore, integrated effect of perceived norms appears to be understudied (Weir, 2012). This has also been evident during literature survey in the context of organic food purchase behavior. It is evident through literature review that despite being an important construct, many studies on organic food did not even consider this construct in their models (Gracia & Magistris, 2007; Chen, 2009; Magnusson et al., 2003). These observations make this construct a deserving candidate for further studies in organic food studies.

Some researchers on organic foods reported mixed results in a cross-cultural study when subjective norm was taken based on the TPB framework. Arvola et al. (2008) examined certain factors that affect intentions to purchase organic apples and pizza across Italy, Finland, and UK. In order to measure the intention to purchase organic apples, social norms and attitudes were the only independent variables. Another independent variable (moral attitude) was taken as third predictor for measuring influence on intentions for organic pizza. The study reported that in Italy and the UK, moral attitude was a better predictor of purchase intention than social norms. On the other hand, social norms were reported to be a better predictor than moral attitude in Finland. Such findings indicate that there might be an underlying cross-cultural

difference in the efficacy of subjective norm as a predictor in the TPB model. Therefore, the construct deserves further investigation in different cultural contexts.

There are other studies that contradict the TPB model itself, especially when applied in the organic food context. Some studies suggested that norms significantly affect attitude rather than purchase intention (Aertsens, Mondelaers, Verbeke, Buysse, & Huylenbroeck, 2011; Tarkiainen & Sundqvist, 2005). The early research on this aspect may be linked to Miniard and Cohen (1979), where multi co-linearity between normative and attitudinal measures was mentioned. In fact, there were many past studies that emphatically pointed towards the influence of subjective norms on attitude (Chang, 1998; Oliver and Bearden, 1985; Sheperd and O'Keefe, 1984). Specifically to organic food related behavior, the influence of subjective norm on attitude has also been evident from investigations by Al-Swidi et al. (2014).

Early empirical and pioneering work by Tarkiainen and Sundqvist (2005) and later by Smith and Paladino (2010) in the food context may have immense inspiration on subsequent researchers to focus on such relationship. The sustaining interest in examining this subjective norm-attitude relationship has also been evident from the investigations by Aertsens et al. (2011). In the same line of thought, this significant relationship between subjective norm and attitude seems plausible as Ryan (1982) posited that normative beliefs influence attitude formation, since attitudes could be formed based on the information given by an expert or the expectations of other significant people around an individual. However, such a relationship was hardly studied in the past, thereby calling for inclusion in a new research agenda.

It appears that positive or negative attitudes towards organic foods were influenced by the opinion of significant people in the societal context. Since both the Subjective Norm and Attitude have direct relational influence on Intention, and Subjective Norm is suspected to have influence on Attitude, it appears that the relational paths would refer to a mediating effect of Attitude in the relationship between Subjective Norm and Intention. According to Baron and Kenny (1986), the mediator represents the generative mechanism through which the focal predictor variable is able to influence the criteriaon variable of interest. Therefore, the resulting relational paths may be tested for mediation effects.

Thus those having positive pre-disposition towards organic food influenced others' attitude in this attitude formation process. However, the proponents of the TPB seem to differ on such findings. Ajzen and Fishbein (1980) maintained that enough degree of discriminant validity exists between these variables. Therefore, since contradictory positions are observed among researchers and proponents of the TPB, the relationship may be studied under Bangladesh context.

### **2.5.3 Perceived Behavioral Control**

Perceived Behavioral Control, an important construct of the TPB and its variants, shares some similar characteristics of another construct from Bandura's research (Bandura, 1977; 1994). One core construct of Bandura's (1994) Social Cognitive Theory is called Self Efficacy, that has tremendous influence in shaping the construct PBC in the Theory of Planned Behavior and its other later variants. Self-efficacy is the belief that a behavior is or is not within an individual's control and is usually evaluated as the degree of confidence the individual has that he/she could still perform

the behavior in the face of various impediments (Conner, 2010). It appears that, while behavioral intention represents an individual's consciously formulated plan to perform a specific behavior (Ajzen, 1991), it is not a sufficient condition for the implementation of behavior (Ajzen, Kuhl, & Beckmann, 1985). Intention is constricted in its capacity to forecast behaviors that are not fully volitional in nature. With a view to addressing this limitation, perceived behavioral control (PBC) has been inducted in the widely used theory of planned behavior (Ajzen, 1991), which is somewhat similar to the Self Efficacy (Bandura, 1977, 1986).

PBC construct is expected to capture the effect of non-volitional elements and forecast behavior. Since the concept of behavioral intention has known limitations of its inability to account for the influence of non-volitional factors, perceived behavioral control (Ajzen, 1991) in the TPB model has been a significant addition. However, perceived behavioral control also has some known limitations, such as inaccuracy in the face of uncertainty regarding behavior (Sheeran, Trafimow, & Armitage, 2003). There have been studies to see whether PBC and Self-efficacy are different constructs. Many researchers reported that Self-efficacy and Perceived Behavior Control are separate constructs (Tavousi et al., 2009).

There is another similar construct called Perceived Consumer Effectiveness (PCE), advanced by Kinnear, Taylor, and Ahmed (1974). This refers to the degree to which individuals hold the belief that their actions alone would contribute to make a difference in solving a problem (Ellen, Wiener, & Cobb-walgren, 1991; Kinnear et al., 1974). For example, the individual belief that buying organic food will contribute to a broader goal of reducing pesticide in agriculture. Some people with high PCE might think that individual action will change the broader scenario, whereas some

people may think that mere individual action will have so significant impact on the whole scenario. The original factor that was included in the TPB was Perceived Behavioral Control (PBC) where Ajzen included the idea of motivation and ability (control) as a precursor to behavior (Montano & Kasprzyk, 2008). Therefore, when people think that they possess the ability to act and such actions may have expected results, then they are more motivated to act accordingly. Thus, consumers may act either favorably or unfavorably depending on their outcome belief (Pelsmacker, Janssens, Sterckx, & Mielants, 2006). According to Hofstede and Bond (1984), these beliefs flow from the consumer's values and culture that are aimed at reaching both personal and social interests of the individual. In past studies, PCE has consistently been linked to socially conscious attitudes (Vermeir & Verbeke, 2008) and majority of studies found this to be significant in explaining organic food purchase intention (Ling, 2013; Zhou, 2013). However, these studies were looking into the "Attitude towards Environment" (General Attitude) and measuring organic food purchase intention (a specific context). Thus PCE was more relevant in those studies than Self Efficacy or Perceived behavioral control.

Therefore, to capture the non-volitional part of consumer behavior, Perceived Behavioral Control warrants inclusion in the proposed research model.

## **2.6 Situational Constraints**

Many scholars have viewed situational variables as one of the influencers of organic food purchase behavior (Carvalho et al., 2010). In past studies, situational factors were proposed to account for the intention-action gap (Soyez, Francis, & Smirnova, 2012; Carvalho et al., 2010). According to a meta-study, it was suggested that beyond

the relationship between knowledge and attitudes, attitudes and intentions, and intentions and actual responsible behavior, there seem to be many factors that affect eco-friendly behavior (Hines et al., 1986). Authors called them situational factors that consisted of economic limitations, social influence, and availability of alternatives. It appears that the situational variables are mostly viewed as extraneous variables outside the consumers' immediate control. This is also echoed by a highly cited and classic study of situational factors on consumer behavior conducted by Belk (1977). He identified five types of situational constraints that may have significant influence on consumers' decision making. The author indicated that the inconsistency between consumer characteristics and behavior may be accounted for by the influence of situational factors on consumers.

Situational factors may have immense influence in consumer behavior studies. Some past studies observed that the attempt to explain the variation in intention and behavior has largely been looked upon by identifying moderating variables that may seem promising to explain such gap (Cialdini, Petty, & Cacioppo, 1981; Wong & Sheth, 1985). Cote and Wong (1985) referred to their comparing the effects of several intervening variables on intention-behavior consistency and reported that situational factors explained most of the inconsistency in the relationship. According to their study, these situational factors, often termed as unexpected events, may refer to the antecedent and continuous stimuli that were not expected to occur when intention was formed, thus may bar the individual from action if such events take place at the time of action. Therefore, it was argued that situational transitions may lead to a change in attitude and create inconsistency between previously measured intention and latter behavior (Cote & Wong, 1985). Due to this effect of situational factors on consumer

behavior, many authors indicated in various discussions about the effects of such factors as “intervening variables” on the intention-action relationship (Ajzen & Fishbein, 1973; Belk, 1977; Sheth, 1973). For example, Sheth (1973) suggested that the situational events at the time of consumption can either assist or resist the transformation of affect and behavior intention into actual behavior. Similarly, Bagozzi (2000) considered ‘Situational Forces’ as contingent factors in the cognitive decision-making model, where these forces may facilitate or inhibits the attainment of consumption goals. Specifically, many studies related to organic food purchase behavior viewed price and availability as important inhibiting or facilitating factors, while other scholars found no significant impact of availability on behavior (Persson, 2013). It appears that situational events may change consumers actual behavior from what was otherwise planned in the first place. Similar line of thinking was adopted by Triandis (1977), where it was suggested in the model of interpersonal behavior that for any level of intention, the absence or existence of certain "facilitating conditions" will affect the probability of a behavior. One of these facilitating factors was indicated to be situational factors. In a research paper by Carrington et al. (2010), it was suggested that situational factors be studied as moderator between the intention-behavior relationship. Hines et al. (1986) also reported similar findings in a meta-study that situational factors can facilitate or resist environmentally responsible behavior.

Despite indications on the impact of situational factors on purchase behavior, only a few studies actually investigated this variable in the organic food context in their research framework till to date. For example, situational variables were studied in store format choice decisions (Jayasankaraprasad, 2010), internet and store shopping

behavior (Gehrt & Yan, 2004), leisure and non-leisure behavior (Havitz & Mannell, 2005), recycling behavior (Bezzina & Dimech, 2011; Latif, Omar, Bidin, & Awang, 2013), grocery shopping behavior in general (Iyer & Smith, 1989), consumer behavior in shopping malls (Zhuang, Tsang, Zhou, Li, & Nicholls, 2006), ethical purchase behavior (Carrington et al., 2010), and so on. Montano and Kasprzyk (2008) have proposed an extension to TPB by incorporating situational constraints as a predictor in studying health behavior. The study termed this extended theory as IBM (Integrated Behavior Model). Although IBM framework has specifically been developed for health behavior and communication research, recent studies are using some of its components to study food safety (Quick et al., 2013) and purchase intention of organic foods (Hämmerle et al., 2012).

Although many past authors highlighted the importance of situational factors in consumers' green decision making process, their operationalization greatly varied across contexts. Some authors operationalized with multiple dimensions (Iyer & Smith, 1989), whereas some operationalized as a single-dimensional construct (Kaiser, 1996). The operationalization section will elaborate on this issue further.

Under Bangladesh context, studies are scant on the influence of situational factors, and more so in the research on organic food sector. To the best of the researcher's knowledge, only one conceptual paper can be traced where the author recommended studying situational variables in organic food market in Bangladesh (Shabnam, 2013). Therefore, situational variables may deserve further investigation in organic food behavior context.



## 2.7 Trust

One of the barriers towards consumers' buying of organic foods was reported as trust in the certification and product (Van Loo, Diem, Pieniak, & Verbeke, 2013; Janssen & Hamm, 2012; Hughner et al., 2007). A number of previous studies on the consumption of organic food emphasized trust factor as one of the most crucial aspects when consumers decide whether to buy organic products or not (Sangkumchaliang & Huang, 2012; Padel & Foster, 2005). In addition, trust may have conferred in many ways that need to be considered as well. Chen (2013) pointed towards various expressions of trust like trust on suppliers, trust on the industry and also the trust on various institutions that consumers have in their minds when it comes to trusting organic foods. Apart from various expressions as indicated, some authors refer to the fact that consumers may be skeptical on the genuineness of organic product itself (Kriege-Steffen et al., 2010). Oftentimes, consumers may suspect the authenticity of a product when it is claimed as environment friendly (D'Souza, 2004; Ellison, 2008). Simply put, the trust in the product itself could be an important determinant of purchase behavior. This line of thinking is also supported by other researchers in recent studies (Drescher, Jonge, Goddard, & Herzfeld, 2012; Loose & Remaud, 2013; Tung, Shih, Wei, & Chen; 2012).

It appears that trust is an important element to confer confidence in customers' minds. In order to achieve this end, marketers often attempt to communicate through certification logos, eco-labels or further information labels as proxy of trust (Janssen & Hamm, 2012; Thøgersen, 2010). Many researchers posit that consumers are gradually getting more responsive over time towards information labels regarding nutrition, health, food safety & quality, and environmental welfare (Blades, 2000;

Hailu, Boecker, Henson, & Cranfield, 2009; Ha-Brookshire & Norum, 2011). Therefore, from communication and trust perspective, eco-labels may contain high value to consumers. This information-value of eco-labels is particularly of importance because of the classification of organic products in the greater product landscape.

There may be three types of products based on how the information exchange takes place through the interaction between the retailers, the product, and the customers. This classification is shaped according to the buyers' capacity to identify the desirable and key product attributes. The three classes of products are: search, experience, and credence products (Pearson, Henryks, & Moffitt, 2007). The difference between search and experience products was pointed out by Nelson (1970), who indicated that the most apparent way to the consumer is search. However, there are other products for which this search method may not be suitable, for example, goods that would reward the consumer through evaluation after the purchase has been made, rather than by search. These are experience products. Darby and Karni (1973) suggested the third type where certain credence attributes or qualities of a product are expensive or difficult to evaluate even after purchase. These products are called credence products.

According to Janssen and Hamm (2012), since organic foods can be classified as credence products, high level of uncertainty associated with such products warrants that the level of uncertainty be minimized through providing more information through eco-labels, although not all logos or eco-labels appear to be equally treated by consumers. Thus, eco-labels perform an important function of conferring trust, where credible, since the organic claim is difficult to be evaluated at customers' end. Therefore, being aware of communication and trust value of eco-labeling, some scholars suggested that a national state-supported common labeling program might be

applied for all kinds of products in association with strong marketing efforts that would ultimately communicate a level of assurance to the consumers, thereby increase the trust on products (Engels, Hansmann, & Scholz, 2010).

However, some authors disagreed that such measures of a common state label would increase the level of trust (Thøgersen, Haugaard, & Olesen, 2010). They argued that logo itself may not generate trust because trust is dependent on personal values and individual belief about institutions behind the logo. With the general perception that consumers usually lack trust on institutions like governments, such a scheme of state-sponsored labeling may not ultimately help (Grankvist, Lekedal, & Marmendal, 2007). In many cases, apart from skepticism on state-sponsored logos, consumers may not necessarily trust all third party or private sponsored logos either (Jensen, Denver, & Zanolli, 2011; Janssen & Hamm, 2012). Besides logos, consumers may not equally trust the different types of outlets selling the organic foods. Sirieix and Schaer (2005) reported that consumers' trust may vary depending on the types of outlets selling organic foods. They found that consumers trust farmers' market and direct outlets more than conventional retail outlets selling organic foods.

Another study on trust and eco-labeling on green purchase intention conducted in an Asian context, Rashid, Jusoff, and Kassim (2009) looked into the acceptance of the environmental labeling in Malaysia and found that trust in such labels had a low moderating influence between green attitudes and buying intention. Therefore, it may be understood from these studies that, while certification marks or logos may play an important role in reducing uncertainty by working as a proxy of consumers' trust, the logos itself may not contribute to trust if consumers' perceive these logos to be unreliable or they get skeptic of institutions behind these logos. It seems that it is

extremely important for consumers to have proper information about product attributes and assurance of the veracity contained in an authoritative information source. As already indicated, the dependability and credibility of information becomes vital as consumer trust may waver depending on the information sources.

Despite the fact that consumers may be skeptic about government's certification process or the role of governments in general, governments have an important administrative role to play anyway to regulate private institutions in a credible manner as well. That is why, past researchers emphasized that institutions like government should have an important function to act in resisting market failures by enforcing laws on food growers and sellers (Hatanaka, Bain, & Busch, 2005). The government's role in implementing the regulatory framework also calls for preventing stakeholder institutions from making unreasonable and misleading claims of positive environmental characteristics of their products. Such misleading and deceptive practices have also sneaked into organic food sector (Northen, 2011). Such practices of misleading or misrepresentative claims of products' eco-friendliness have been popularly dubbed as "green washing" (Peattie & Crane, 2005). Green Washing can be defined as the act of providing and spreading disinformation to consumers concerning the environmental practices of a company or the environmental benefits of a product or service (Baum, 2012). It was reported that consumers lack trust on green marketers due to "green washing" (Delmas & Burbano, 2011). Studies suggest that green washing of various products is rising across the globe. For example, in a cross-national study of 247 print ads from 84 issues of mainstream magazines from the USA and UK, Baum (2012) reported that about 75% of the advertisements were found with some aspects of green washing. These deceptive claims not only add

distrust of eco-friendly products among consumers in the long run, but also pose regulatory challenges to governments to monitor and control (N. Feinsein, 2013).

Besides skepticism about logo or certification marks, it appears that required information provided through packaging and labeling may also confer cynicism if the sources lack credibility among consumers. For example, some past studies contradict the common notion that more information through labeling would create trust among customers. Some researchers posit that providing even beneficial information about origin of food and positive processing information may increase distrust among consumers (Poortinga & Pidgeon, 2004; Scholderer & Frewer, 2003). There are similar findings by other researches that concede to the notion that increasing amount of food information and relevant claims positively correlate with increasing amount of consumer suspicion (Eden, Bear, & Walker, 2008). Again, similar inferences may be drawn from these studies that such distrust may not directly attributable to the food itself, but more directed towards the lack of trust of private or government certification schemes and credibility perception of relevant institutions.

Another consequence of this skepticism is the influence of such perception on subjective norms. A study on consumer behavior modeling found that, the higher the level of uncertainty about the consequences of behavior, the higher could be the influence of subjective norms (Jager, 2000). Applying to the case of organic food, it may be suspected that the higher the distrust or skepticism about organic foods, the higher would be the influence of subjective norm. However, Thøgersen (2012) posited that if consumers feel uncertain about organic food, it is highly likely that they would not buy it, despite they might possess positive attitudes and favorable subjective norms. As already evident from previous discussion, it appears that the lack

of certainty may center around whether organic food is good for health, whether organic certification process and logo can be trusted, or agencies related to certification is credible at all.

Another issue of viewing trust in the context of organic food is how to perceive trust in terms of various aspects of it. For example, should trust be viewed as a multi-dimensional issue leading to a common perception of credibility? Or should it be viewed as a unified body of perceived credibility emanating from the sum-total of highly correlated multi-directional factors? An in-depth literature review revealed that past researchers put precedence of both the approaches, depending on the applicable research context. For example, Chen (2013) and Drescher et al. (2012) viewed trust as a multi-dimensional construct, whereas the similar multi-faceted items were visualized in a single-dimensional construct by other researchers (Schulze, Wocken, & Spiller, 2007; Teng & Wang, 2015; Voona et al., 2011). It appears that the latter approach were possible when there is either widespread lack of trust among customers for multiple credibility factors or there exist high inter-correlations among multiple trust factors, leading to interchangeability of credibility perception of apparently different institutions. Interestingly, the latter approach was mostly visible for developing countries, since many of these countries may lack capabilities to ensure enforcement and implementation related infrastructure for food products (IAASTD Global Report, 2009).

Therefore, whereas multi-dimensional view could be an option, uni-dimensional aggregation is also viable if sufficient inter-correlations exist either due to widespread perception of distrust or for any other reason leading to high inter-correlations.

Getting back to the local context, it appears that studies are scant on trust issues in organic food sector in Bangladesh. To the best of the researcher's knowledge, about 3 studies can be traced that talks about trust issues in organic food sector in Bangladesh (Huda, Muzaffar, & Ahmed, 2009; Islam & Hoque, 2013; Shabnam, 2013). However, news and media reports are abundant on food safety and chemical adulteration issues (Rahman, 2014; Parveen, 2008), which can be suspected to cause a lack of confidence on food among general public (Islam & Hoque, 2013; Huda et al., 2009).

It appears that since most studies on trust factor was done in the western context, further investigation is warranted under a developing country context (Tung et al., 2012). It may also be noted that most of the previous studies did not consider the trust issue directly to organic foods, but directed more towards its handlers (growers, logo by the certification body and governments). It seems that trust is more like a facilitating or inhibiting factor (Baron & Kenny, 1986) that may be treated as a moderator in future models. The possibility of such consideration is further justified in the Operationalization and Hypothesis section of this proposal. Therefore, research is warranted to understand the impact of trust as a variable in explaining the intention and purchase behavior.

## **2.8 Habit**

Habit has been viewed and suggested by many scholars as an important determinant of purchase behavior. Habit, seen as one's repeated past behavior, is believed to be a basic and important consideration in understanding one's present or future behavior (Kidwell & Jewell, 2008). The marketing literature also posits that habit is important determinant of repeat purchase intention (Grankvist & Biel, 2007; Rauyrueen, Miller,

& Groth, 2009). Particularly to food and grocery shopping behavior, it is often suggested that while mall shopping is rather hedonic and entertainment-oriented behavior, grocery shopping is more a routine and utilitarian-oriented shopping behavior (Anić & Radas, 2006). While defining habit, scholars viewed it as an automatic behavioral response activated by a situational stimuli without being preceded by a cognitive analytic process (Aarts, Verplanken, & Knippenberg, 1998). In the same line, other scholars defined habit as the repetition of a behavior leading to a degree of automaticity, performed in a consistent context and stimuli (Verplanken, 2006; Wood & Neal, 2007). Other studies indicated that, this notion of ‘automaticity’ is expressed by the behavior exhibiting some or all of the four characteristics: efficiency, lack of awareness on part of the actor, un-intentionality and uncontrollability (Bargh, 1994). Thus, some studies inferred that habit may ease the cognitive decision-making process, thereby work as an important influencer of actual behavior (Aarts et al., 1998).

In addition, Conner and Armitage (1998), while reviewing past research on the application of the TPB (Ajzen, 1991), mentioned that the inclusion of the construct “habit” explained an additional 7.2% and 13% (both on average) of the variance in intention and behavior respectively. However, it was showed by other studies later that mere positive attitude may not necessarily lead to purchase behavior. For example, Tarkiainen and Sundqvist (2009) identified that people may not buy enough organic food even if they maintain positive attitude, since the ideological attitudes may not exist as habits.

An interesting example was provided by Kollmuss and Agyeman (2002) about how a consistent behavior may turn out to be environmentally unfriendly from being



environmentally friendly just because of habitual reasons. For example, it was reported that people in China, while traveling in trains, were habituated in throwing food and drinking utensils out of windows once eating and drinking were over. Previously, this habit could be considered environment friendly as the utensils were made of clay or other decomposable materials. Lately, with the advent of modern utensils, these clay cups and plates have been replaced by Styrofoam and plastic materials. China seems to have a serious garbage problem because people travelling in train are still throwing out these plastic and Styrofoam utensils in the same way! This shows how powerful habits could be in engendering automaticity in behavior so much so that habit may override ideological attitude or beyond recognizing the outcome in a new context.

In referring to the functioning of habit, Albarracin and Wyer (2000) mentioned that people's past behavior can have important influences on future intentions, independent of outcome-specific cognitions. As noted before, this goes in line with what Tarkiainen and Sundqvist (2009) indicated that positive attitude would transform to action when ideological attitude are adopted as habit. This resonates with past findings that decision making takes place through two basic types of mental processes: (a) those requiring high level of cognitive endeavor, and (b) those requiring low level of cognitive endeavor (Eagly & Chaiken, 1993; Schwarz & Clore, 1996). Thus, referring to the process of habit, Aarts et al. (1998) posited that, given the opportunity, those who performed a behavior in the past searched for less information and were more likely to concentrate on information on the habit-based choice rather than on alternative choices.

It follows that, habit mostly activates behavior with some degree of automaticity, often without active cognition of outcome or attitude. Therefore, habit is most likely to influence behavior directly, and does not necessarily have to go through a cognitive process of intention. This has been the case with the Integrated Behavior Model (IBM) also, where Montano and Kasprzyk (2008) maintained that habit directly affects actual behavior.

## **2.9 Summary of Literature Review**

It appears from literature survey that most past studies on organic food purchase behavior investigated the research issues under the framework of reasoned action theories or its later variant, the theory of planned behavior. As a consequence, most studies looked into attitude, self-efficacy or perceived behavioral control, and subjective norms as a part of the regular framework, and added one or two additional variables to investigate the increase in explanatory power of their proposed model due to such additions. Since the theory of planned behavior is often criticized for not being able to fully explain the link between intention and actual behavior, a number of studies attempted to explain this gap by referring to new variables like implementation intention, temporal transition, personal values etc. to bridge the phenomenon. Two general trends of explaining this gap has been observed among scholars. First, by offering inclusion of new variables in the existing TPB model, and second, by proposing new dimensions of existing variables as possible explanation of reducing this intention-action gap.

The scholars belonging to the first group often offer inclusion of new variables as predictors or moderators or mediators, or as a combination of any two or all of these three approaches. While reviewing literature belonging to this trend, it was observed

that some of the important variables might have received very low attention in organic food purchase behavior studies so far. For example, habit and situational factors were found to be hardly used in studying organic food purchase behavior. Some other variables, while received increasing attention, were either studied in a different theoretical framework or were hardly tested for their intervening effect between intention and actual behavior.

The second group of scholars offered new dimension(s) of already existing variables in the TPB model to capture further variability in actual purchase behavior. Through literature survey, it was identified that multiple dimensions of attitude, subjective norms, perceived behavioral control and even new dimensions of intentions have been proposed. Despite recommendations from various scholars about newer dimensions of these variables, it was observed that most authors favored studying one or two dimensions at a time, leaving other dimensions either unobserved or not investigating the combined effect of multiple dimensions of a single predictor variable on the dependent variable.

Over and above all, it was also observed that both the research trends lack focus on Asian contexts. Most studies were conducted in the USA and European perspective, thus findings may not be generalizable to Asian context. Based on these observations, it may be concluded that sufficient study gap exists in both of these research streams on organic food purchase behavior.

## **2.10 The Underpinning Theory**

Literature survey indicates that a number of variables may deserve systematic investigation for understanding the organic food purchase behavior under Bangladesh context. It appears that, additional variables may be studied in conjunction with the

variables already modeled under the theory of planned behavior. The closest match of the deserving variables to be studied, including their tentative relationships, appears to be an extended variant of the theory of planned behavior as proposed by Montano and Kasprzyk (2008). Also known as Integrated Behavior Model (IBM), the authors developed the model based on past researches and their experience in the field over ten years of time.

While Montano and Kasprzyk (2008) maintained that theory of planned behavior has been successful in explaining and predicting behavior across a wide array of behavioral studies, including designing intervention programs to effectively change behavior, it has also been emphasized that the original proponents of the early theories stressed the need for including other variables to form an integrated behavioral model. This suggestion to include other variables to form an integrated model appears to be the prime motivation behind developing this extended model of TPB, known as IBM (Montano & Kasprzyk, 2008).

A number of similarities and differences can be observed between the IBM and the TPB. Based on the TPB, IBM also assumes that the most important determinant of behavior is Intention, on the premise that lack of motivation may not confer undertaking of a particular behavior. In identifying the variables affecting intention, IBM also proposes that attitude, perceived norm and personal agency be considered as antecedents of intention. These three constructs of IBM are very much similar in dimensions and definitions of three key constructs of TPB: attitude, subjective norms and perceived behavioral control, respectively.

However, in order to develop an integrated model, IBM borrows from other prominent behavioral theories that identifiably differentiate this model from the TPB.

For example, based on the theory of Interpersonal Behavior (Triandis, 1979), IBM includes Environmental Constraints and Habit as additional determinants of behavior. Montano and Kasprzyk (2008) also argued that, without required knowledge and skill, an individual may not be able to perform a particular behavior. For example, if someone wants to go for a cancer screening, he/she must have knowledge about the healthcare system and no environmental constraint (like lack of transportation or limited clinic hours) should prevent such intention from being implemented. Thus “Knowledge and Skills” is also regarded as an important determinant of behavior.

It is to be noted here that the environmental constraints appear to be very similar to the concept of situational constraints as mentioned in consumer behavior literature (Cote & Wong, 1985). In addition, borrowing from health behavior model, Behavior Salience (Becker, 1974) was included as a predictor of behavior in the integrated model. Behavior salience refers to the level of importance attached to a behavior by an individual. An individual must feel that cancer screening is important to him/her for intention to be carried out. The authors posit that, for an action that are carried out after long intervals (like mammography), the behavior must be salient or cued so that the individual puts enough importance to remember to implement her intention. Thus IBM holds that the behavior must be important to the individual and emerge at the forefront of their thoughts to cause that particular behavior to happen.

Therefore, a particular behavior is likely to occur based on four conditions (Montano & Kasprzyk, 2008). These conditions are: an individual must have strong behavioral intention along with knowledge and skills to perform the behavior; there would be no prohibitive situational factors; the behavior is salient (important), and finally, sustained individual habits based on repeated past performance.

The following diagram shows the Integrated Behavior Model as developed by Montano and Kasprzyk (2008).

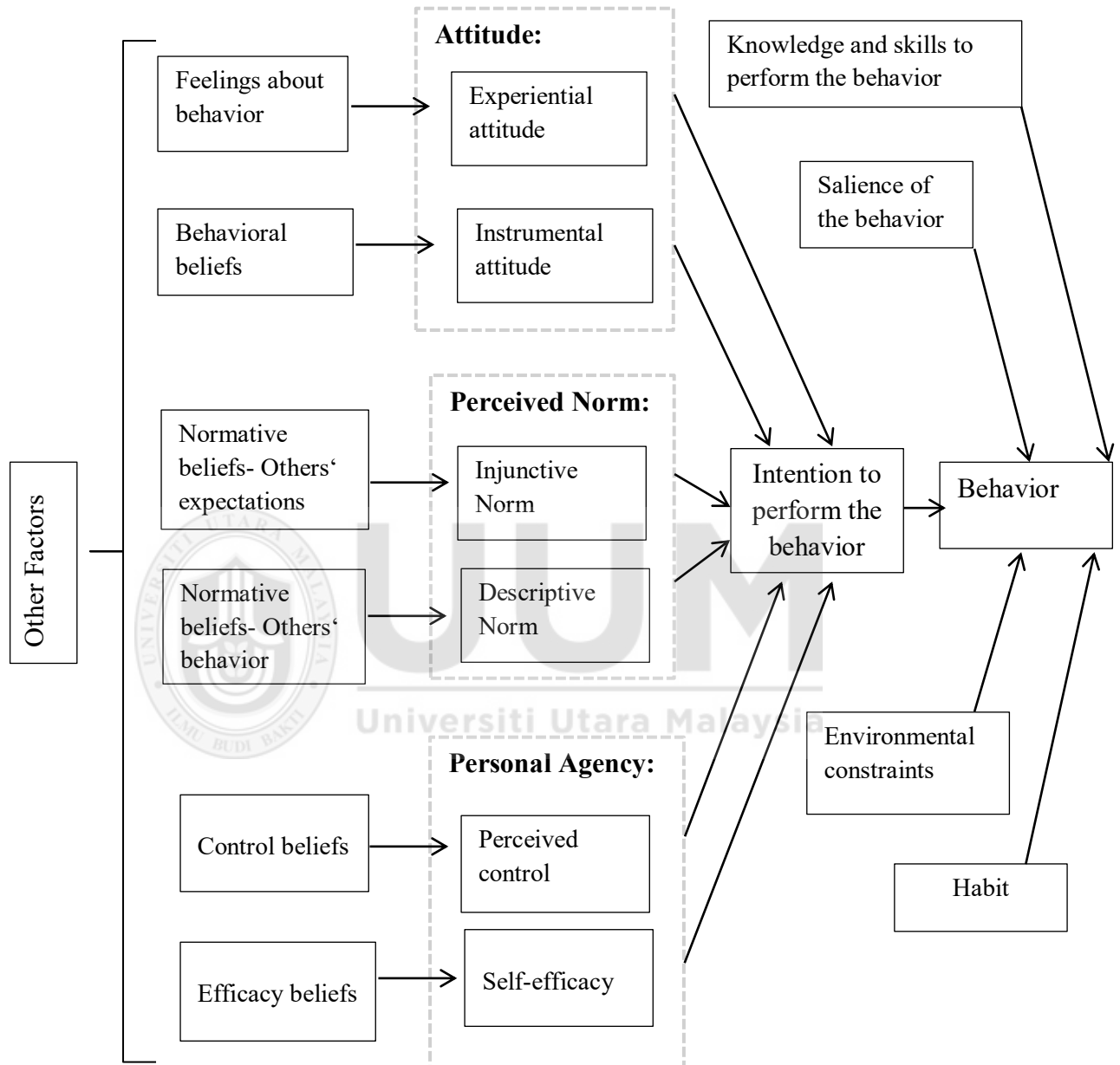


Figure 1: The Integrated Behavior Model (IBM)

Source: Montano and Kasprzyk (2008)

## 2.11 The Research Framework

The proposed research framework for the current study is provided at the end of this section. Based on the literature review, it was identified that attitude, subjective norms and perceived behavioral control may explain variation in organic food purchase intention. Based on TPB, intention may account for variation in behavior. However, a number of gaps were identified that may deserve further systematic investigation. For example, past studies indicated that intention-behavior gap needs explanation, i.e., intention may not always result in actual behavior (Armitage & Conner, 2001; Vermeir & Verbeke, 2006). As already noted in the literature review, two dominant trends in explaining this gap have been observed. The first trend includes attempts to explain this gap by offering consideration of new variables in addition to existing variables in popular behavioral theories (like TPB or Schwartz's Value theory). Many studies have been identified that belong to this trend of enhancing the explanatory and predictive capacity of existing models. For example, a number of past studies identified trust as a significant variable explaining purchase behavior of organic foods (Chen, 2013; Van Loo et al., 2013; Janssen & Hamm, 2012; Padel & Foster, 2005). Many studies related to organic food identified habit as a significant predictor of actual behavior (Tarkiainen & Sundqvist, 2009; Zepeda & Deal, 2009; Van Loo et al., 2013; Hämmerle et al., 2012). Other studies by Gaspar de Carvalho et al. (2010), Soyez et al. (2012) identified situational constraints as an important factor towards organic food purchase behavior.

The second trend of research explaining intention-behavior gap offers new dimensions of existing variables under the already existing models or theories. For example, Aertsens and Verbeke (2009) recommended studying both affective and

cognitive dimensions of attitude at the same time, since it appears to be understudied in organic food behavior literature. Chen (2013) indicated about various measurements of trust instead of measuring trust in the organic products only. While developing a research framework for the current study, both the trends were kept in mind and a combination of the two types of trends was followed in formulating the framework.

It appears that except for two factors (knowledge & skill and Behavior Salience), the Integrated Behavior Model appears to be a good candidate as an underpinning theory. However, there remain two challenges to accept Integrated Behavior Model as a guideline towards the research framework. First, how would a model, so far used in health behavior and communication studies, be relevant in studying organic food purchase behavior? Second, under what basis, the adoption of variables from IBM and their tentative relationship would be justified in the proposed research framework intended for studying organic food purchase behavior? In addition, why trust and habit should be considered as moderator variables since such treatment appears to be different from the IBM's original proposition?

The first challenge can be met by providing two ways of reasoning: deductive reasoning and inductive reasoning. Deductive reasoning will look into past studies, if any, that would justify or indicate that IBM or any of its components can be applied in studying organic food or general category of food related behavior. If other studies indicated that IBM or any of its components can be employed to study food related behavior, we may deductively conclude that verifiable precedence exists in favor of such modeling. To the best of researcher's knowledge, two recent studies can be traced where IBM has been mentioned or partially used in explaining food related



behavior (Quick, Byrd-Bredbenner, & Corda, 2013; and Hämmerle, Freyer, & Maderthaner, 2012). The first study investigated safe food handling behavior, and the second study investigated purchase intention of organic foods drawing one component (Habit) from Montano and Kasprzyk (2008) and the rest of the variables from Ajzen (1991). Therefore, it may be evident that IBM found some ground in food related studies as the model may have been found to be relevant to researchers lately.

The first challenge, as mentioned earlier, may also be met through inductive reasoning. There could be two rationales of using a health behavior model in studying organic food purchase behavior. First, it has been evident from past studies in social science, psychology and marketing literature that theories of a particular domain found its way to another domain based on its relevance and applicability. Second, rationale that organic food purchase behavior is a kind of health behavior would make IBM an acceptable model for guiding the new research framework.

Therefore, domain relevance needs to be verified first. If domain relevance can be established, IBM could be an acceptable guideline for a new research framework. Based on literature review, it has been evident that majority of variables that are evaluated as tentative candidates for the research framework has also been a part of IBM. Trust is the only variable that does not belong to either TPB or IBM, but has been added to the research framework based on indications by past studies. Hence, a separate discussion would be necessary later to elaborate why trust could be a variable and how this variable would be treated in the model. Only two predictor variables of IBM: the “Knowledge and Skill” and “Behavior Salience” are not included in the research framework because they may not be relevant to organic food purchase behavior. For example, specific to health behavior domain (i.e., cancer screening),

–Knowledge and Skill” and –Behavior Salience” are extremely important for an individual to make up his/her mind to go for a screening (Montano & Kasprzyk, 2008). To the contrary, for pro-environmental behavior, it was reported that majority of studies did not find significant link between environmental knowledge and pro-environmental behavior (Kollmuss & Agyeman, 2002).

A more recent study by Yadav and Pathak (2016) confirmed that environmental concern does not significantly influence the organic food purchase intention under a developing country context. Similar results were reported in developed country context where the motivation towards purchasing organic food is stronger for personal causes than for environmental causes (Alexander, Duncan, & Fuhrman, 2015). Another study conducted under the developing country context also confirmed non-significant impact of organic food knowledge on behavioral intention of consumers (Teng & Wang, 2015). Similarly, other studies also posited that environment knowledge or resulting positive attitude therefrom did not have significant effect on green purchase intention or behavior (Gotschi, Vogel, & Lindenthal, 2007; Paço & Raposo, 2009). Another empirical study also concluded that knowledge about organic food has no significant influence on actual purchase behavior (Li, Zepeda, & Gould, 2007). Although some researchers found mixed results on the impact of environmental knowledge on purchase behavior of organic food (Aertsens et al., 2011), it appears that majority of studies done under the developing country perspective did not find environmental and/or product related knowledge to be significant towards intention or behavior. Therefore, the variable may be given lower priority while considering for inclusion in the proposed model for the current study.

The other variable, Behavior Salience, refers to the importance attached to a behavior by an individual under a health behavior context (Montano & Kasprzyk, 2008). According to authors, for example, certain health screening behavior like cancer screening should be felt important by the individual in order to lead him/her towards a behavioral intention and actual behavior. It appears that the authors are indicating to a high involvement decision that may lower the risk of serious consequences from the illness. However, purchasing food may not be a complex decision like cancer screening. Food being a daily necessity, purchase of food seems to be a simple behavior (Lally, 2010), unlike more high-stake behavior associated with cancer screening. Another empirical study by Tarkiainen and Sundqvist (2009) also posited that the purchase of organic products would most likely be habitual and low-involvement decision. Therefore, it appears that the exclusion of these two variables, i.e., *knowledge and skill* and *behavior salience* from the research framework as compared to IBM may have increased relevance and applicability of the proposed model towards studying organic food purchase behavior.

The relevance may further be enhanced through domain specific operationalization of borrowed variables. In addition, the Environmental Constraints as explained by Montano and Kasprzyk (2008) in the health behavior context would be synonymous to Situational Factors (Belk, 1977) in the general consumer behavior context. Therefore, Environmental Constraints in the IBM has been taken as Situational Factors in the proposed framework.

It may also require a discussion whether purchasing organic food could be considered a kind of health behavior. Previous studies found health concern as an important factor for consumers to choose organic foods (Magnusson et al., 2003; Kesse-Guyot

et al., 2013; Yin, Wu, Du, & Chen, 2010). According to Crinnion (2010), the positive association of organic food with health perception might have stemmed from the fact that organic foods do not contain any pesticide or trace of other harmful chemicals, and some are reported to be more nutritious than genetically modified food. Under Bangladesh context, such health concerns are of immense importance since news and media reports are abundant on food safety and chemical adulteration issues (Rahman, 2014; Parveen, 2008). It was observed in the literature review that few studies that reported health concerns as non-significant to organic food purchase behavior, were conducted in European or the US context, where food safety enforcement might be at higher level even for conventional and genetically modified foods. Therefore, majority of studies generally support the significant link between consumers' health concern and choice of organic food. In addition, past studies reported that many consumers would prefer organic foods with "health protection" motive in mind. For example, health problems like Bovine Spongiform Encephalopathy, salmonella contamination and certain health problems suspected to be associated with genetically modified foods have steered many consumers to prefer organic food as a measure of health protection (Makatouni, 2002; Ritson & Oughton, 2007; Zanolli & Naspetti, 2002).

Such health protective behaviors are also observed among mothers of young children. For example, despite low infant mortality in Canada, numerous chronic diseases are found to be growing among children that have been attributed to environmental exposures (Nieuwenhuijsen, Dadvand, Grellier, Martinez, & Vrijheid, 2013; Schlotz & Phillips, 2009). Such environmental health risks might particularly stress mothers, which might have resulted into adopting preventative measures like avoiding products with strong chemicals or purchasing organic food (MacKendrick, 2009). Therefore,

health-protective measures being a kind of health behavior (Harris & Guten, 1979), it appears that health behavior theories may be applicable in studying organic food purchase behavior.

The second challenge-- justifying the inclusion of variables and specifying tentative relationships appears to be less formidable than the first challenge. Once the model's domain relevance has been established, the inclusion of variables and tentative relationships can be identified based on literature review and addressing the operationalization issues. It may be noted here that, though many variables are borrowed from IBM, the relational directions are not exactly the same as proposed in the IBM. Such relationship is attributed to past findings related to organic food purchase behavior. Therefore, three sections of this study, namely Literature Review, Hypothesis and Operationalization would probably address the challenge simultaneously.

The following is the proposed research framework, further justification of which may be found in the hypothesis section.

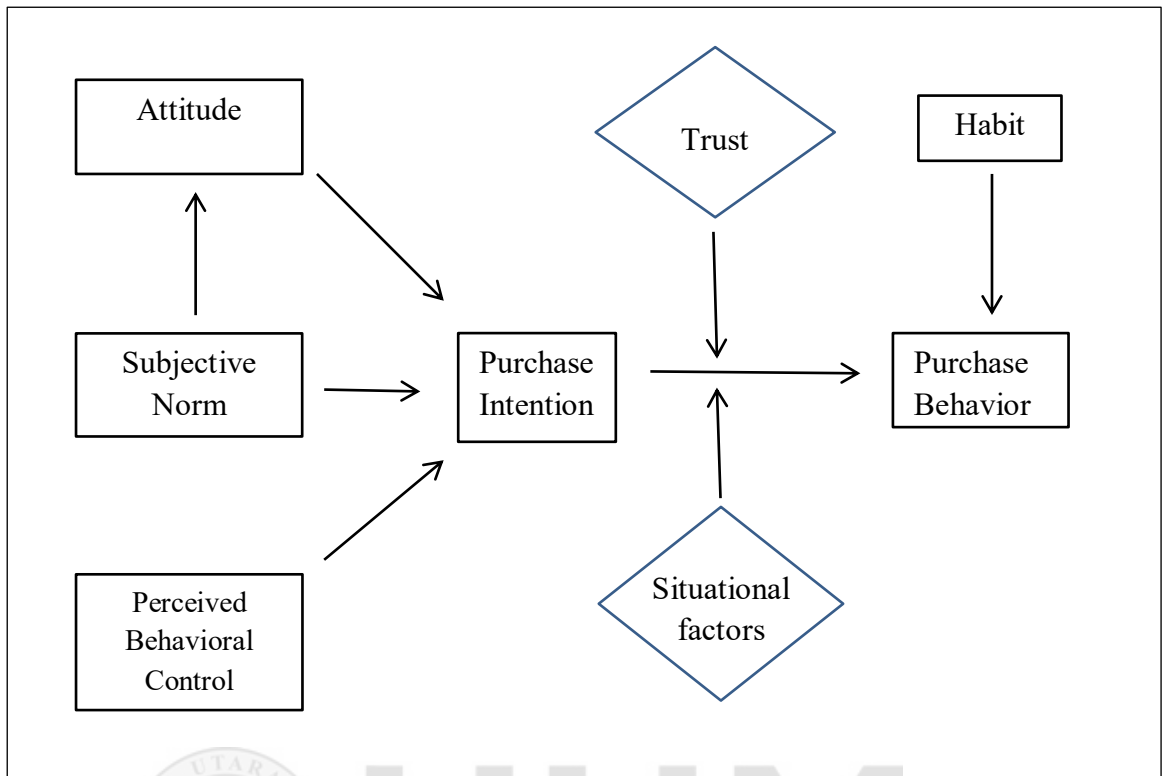


Figure 2.2: The Proposed Research Framework

## 2.12 The Proposed Model Vs. The IBM

Although the Integrated Behavior Model (IBM) has immense influence on the development of the proposed model, the model is different from the IBM in many ways. Six major differences may be observed under two broad groups of classification. The first group of differences is based on Context, and the other group of differences is based on Contents. It may be worth mentioning that, differences in contents, in turn, may contribute to contextual relevance as well.

First, the IBM was originally developed by Montano and Kasprzyk (2008) in the process of developing a health behavior model based on the theory of Reasoned Action and the theory of Planned Behavior. In doing so, the authors conducted a longitudinal study on protective health behavior in collaboration with Fishbein over a

span of ten years. Thus, based on their longitudinal study aimed at modeling health protection behavior grounded on an integrative approach in order to combine earlier theories, the IBM was born. Evidently, IBM is specifically designed for health behavior studies, and protective health behavior in particular. Later, further application of this theory has been suggested in the case of health communication strategies for change in health behavior (Institute of Medicine, 2002). Later, other researchers sporadically hinted on its applicability in organic food purchase behavior modeling by discretely taking one or two variables at a time, yet without applying or modifying the complete model at a time (Quick, Byrd-Bredbenner, & Corda, 2013; and Hämmerle, Freyer, & Maderthaner, 2012). On the other hand, though the proposed model has been based on the IBM, the variables were included or excluded based on literature review in order to develop a model in a different context. The primary structure of the IBM has been adopted in order to facilitate the development of organic food purchase behavior model. Therefore, the variables were proposed in order to maintain relevance to the context of organic food purchase behavior, and not to the context of protective health behavior. Hence, not only the choice of variables, but also the relationship of variables in the proposed model may be seen with different directions for certain variables. These differences may be consistent with the findings in the literature review in order to keep the contextual relevance of the proposed model to organic food purchase behavior.

Second, contextual relevance may further be examined through the differences in the relationship between situational factors and behavior. For example, in protective health behavior model, the “environmental constraints” (similar to situational constraints in the proposed model) is one of the four conditions for behavior to take place (Montano & Kasprzyk, 2008), thereby exhibits a direct influential effect on

behavior. However, this has not been a dominant view by past researchers in the organic food behavior context. Instead, the majority of past studies considered situational factor in such a way that it appears to be more appropriate to treat this variable as a moderator in future models (Carrington et al., 2010). Therefore, to maintain contextual relevance, such difference between the proposed model and the IBM appears to be consistent with the organic food purchase behavior context.

Third, differences in other contents may be observed in the proposed model as compared to the IBM. In line with findings of literature survey, not all variables in the IBM appeared to be relevant to organic food behavior studies. For example, the IBM proposed that knowledge and skill has a direct influence on health protective behavior, since without the knowledge and skill an individual may not be able to decide on how to exhibit protective behavior (Montano & Kasprzyk, 2008). On the other hand, specifically to green purchase behavior, past studies indicated that knowledge may not be a determining factor influencing intention and behavior (Gotschi et al., 2007; Paço & Raposo, 2009). Other studies found mixed results for organic food purchase behavior (Aertsens et al., 2011). Therefore, unlike the IBM, the proposed model put lower priority on this variable, thus excluded the variable so that the relevance to organic food purchase behavior may be maintained.

Fourth, further differences in contents may be observed as the proposed model did not consider “behavior salience” as has been the case with IBM. Behavior salience has been defined as the importance attached to a protective behavior by an individual, mostly synonymous to high involvement decision making. For example, an individual may not feel that it is important to go for a cancer screening, thus may choose not to go for cancer screening. Montano and Kasprzyk (2008) proposed that a protective



health behavior must be felt important for an individual to act. On the other hand, in the food behavior domain, most studies considered such decisions as low involvement behavior (Lally, 2010), therefore, might confer the variable less important in the organic food domain. Consequently, the proposed model put low priority on the behavior salience so that consistency to past findings may be maintained.

Fifth, trust has been a major determinant of organic food purchase behavior as was reported by past studies (Chen, 2013; Sangkumchaliang & Huang, 2012). On the other hand, trust has not been a variable in the IBM, most likely because the proponents of the IBM did not encounter trust issues in the medical services institutions in their domain. The inclusion of this variable in the proposed model has been a challenge, not because whether trust is important in organic food purchase behavior or not, but because of its tentative direction of influence on the intention and purchase behavior. Trend of results from past studies indicated that lack of trust can be an impeding factor in consumers choice of organic foods (Van Loo, Diem, Pieniak, & Verbeke, 2013; Janssen & Hamm, 2012). In the same line, other studies indicated that trust facilitates the buying decision of consumers (Zagata & Lostak, 2012; Essoussi & Zahaf, 2009). Since majority of studies indicated that trust either strengthens or weakens the intention and purchase behavior of consumers, it is most likely to be a moderating variable in the proposed model. Therefore, although trust has not been a part of the IBM, the amalgamation of trust in the proposed framework may increase the relevance of the model to organic food purchase behavior domain.

Sixth, the IBM did not explicitly refer the gap between intention and actual behavior, while maintaining the same line of proposition with previous theories that intention is the prime determinant of purchase behavior. However, the four conditions that the

proponents forwarded as predecessors of behavior, may actually account for the potential gap between intention and behavior since intention will result in actual behavior on those four conditions (Montano & Kasprzyk, 2008). On the other hand, the proposed model does not only include variables that may explain behavior in an integrative manner, but also may explain the potential gap between intention and purchase behavior.

### **2.13 Hypotheses**

The foregoing sections provided the research framework of the study and how the proposed framework is unique and different from the underpinning theory of IBM. A hypothesized research framework is crucial for identifying the causal direction and later may test the magnitude of such relationship. Therefore, this section will attempt to hypothesize the tentative relationship as evidenced by past studies and observations among variables as modeled in the framework.

The Relationship between purchase intention and actual purchase behavior, as postulated by the theory of planned behavior, holds that intention is the key influencer of behavior. The theory shows that the intention actually impacts the behavior as a mediator, allowing attitude, subjective norms and perceived behavioral control to act on actual behavior (Ajzen, 1991). Based on the TPB, a three stage evolution of how actual behavior is formed has been observed.

First, personal beliefs influence the attitude toward the behavior, subjective norm, and the perceived behavioral control. Second, this set of three variables defines the strength of the intention, and finally, the actual behavior takes places if the strength of the intention and the volitional control exist (Ajzen, 1989). Therefore, to have a significant relationship between intention and behavior, other antecedent factors have

to be strong enough to influence intention to have a determining impact on the behavior. In general, most studies in the past, conducted across many product types, found a positive relationship between intention and actual behavior. Although the positive relationship between intention and behavior has generally been supported by various studies, the relationship is mostly reported to be modest, accounting for only about (on average) 28% of variation in behavior (Sheeran, 2002). Similarly, a meta-analysis of 57 published papers revealed that intention explains only 27% of the variance in self-reported eco-behavior (Bamberg & Möser, 2007). However, notwithstanding the fact that modest relationship exists between intention and behavior, many studies reported that intention has been a significant predictor of purchase behavior. Many scholars reported positive and significant relationship between intention and purchase behavior while reporting their findings related to organic food purchase behavior (Thøgersen, 2010; Tarkiainen & Sundqvist, 2005; Saba & Messina, 2003). Therefore, the hypothesis may stand as:

H1a: Purchase Intention is positively related to Purchase Behavior of organic foods

Habit has been observed as an understudied dimension in investigating organic food purchase behavior. Habit can be seen as a situation-behavior sequences that are or have appeared to be automatic, so that they happen without self-instruction (Triandis, 1979). This level of automaticity is an important dimension in habit literature as automaticity implies that the behavior does not have to be preceded by the cognitive element of intention (Aarts et al., 1998). Past studies conducted across many product varieties, including organic foods, indicated positive relationship between strong habits involving an object and actual behavior involving the same object (Carrington

et al., 2010; De Bruijn et al., 2007; Gaspar de Carvalho et al., 2010; Olsen & Tudoran, 2013). Therefore, the hypothesis stands as follows:

H1b: *Habit* of buying organic food is positively related to the *Purchase Behavior* of organic foods

Situational factors has long been suspected to explain the intention-behavior gap (Hines et al., 1986). Situational variables are mostly viewed as extraneous variables outside the consumers' immediate control (Belk, 1977). Thus, situational constraints may influence the purchase behavior of consumers independent of intention. Probably due to such effects of situational variables on actual behavior, Cote and Wong (1985) asserted that situational transitions might result in a change in attitude and create intention-behavior gap. Thus many authors indicated situational factors as intervening variables influencing the intention-action relationship (Ajzen & Fishbein, 1973; Belk, 1977; Sheth, 1973).

Similar findings were reported by Iyer and Smith (1989) where the authors found that situational factors influences the difference between purchase intention and actual outcomes like actual purchases, unplanned buying and switching of brand and product category. Mihi (2010) and Tinne (2011) also reported that situational factors may significantly contribute to unplanned purchases by consumers, thus leading to a difference in intention and actual purchase.

In other studies, authors criticized the TPB model for limiting to antecedents of intention in pre-consumption situation, thus unable to explain the pre-purchase and post-purchase dynamic decision conditions (Papista & Krystallis, 2012). Earlier, such gaps were identified by other researchers who indicated that –Attitude-intention-

behavior” models isolate decision making process artificially, overlooking the external impact of situational factors on consumer behavior (Carrington et al., 2010; Foxall, 1993). In fact, Carrington et al., (2010) explicitly suggested that situational constraints be treated as a moderator in the relationship between intention and behavior. Therefore, such an intervening and external effect is expected to strengthen the intention-behavior relationship in case the situational factors are facilitative to perform the behavior, or weaken the intention-behavior relationship in case the situational factors are restrictive to perform the behavior. In a meta-analysis, similar findings were also reported by past researchers that situational factors can either increase or decrease the environmentally friendly consumer behavior, therefore impact the direction of actual behavior (Hines et al., 1986). This is why situational factors may be treated as a moderator variable, since a moderator could be a qualitative or quantitative variable that would shape the direction and/or strength of the relationship between a predictor and a criterion variable (Baron & Kenny, 1986). Therefore, based on the literature review and nature of influence of situational constraints, the hypothesis stands as follows:

H1c: Situational Constraints will moderate the relationship between *Intention* and *Purchase Behavior* such that when *Situational Constraints* is high, the relationship between *Intention* and *Purchase Behavior* will be weakened, and vice versa.

Trust has been an important variable in organic food purchase decisions (Chen , 2013; Van Loo et al., 2013; Janssen & Hamm, 2012; Padel & Foster, 2005). The following discussion elaborates its importance in the proposed model and as to why it should be treated as a moderator variable.

Past studies indicated that consumers may suspect the authenticity of a product when it is claimed as environment friendly (D'Souza, 2004; Ellison, 2008). The same applies to organic foods. Skepticism and lack of trust on organic products and certification have been cited as one of the barriers to organic food purchases by consumers (Van Loo, Diem, Pieniak, & Verbeke, 2013; Janssen & Hamm, 2012). It appears that practices of misleading or deceptive claims of products' eco-friendliness, often termed as "green washing" (Peattie & Crane, 2005), might have contributed to this skepticism among consumers (Leonidou, Leonidou, Palihawadana, & Hultman, 2011). More recent studies also supported the previous findings that consumers have trust issues in buying organic products (Loose & Remaud, 2013; Tung, Shih, Wei, & Chen; 2012).

However, trust is not only related to the organic product itself, but also could be directed towards other stakeholders like growers, industry and various institutions that consumers consider when it comes to trusting organic foods (Chen, 2013). For example, some researchers found that consumers' may not equally trust all types of outlets selling organic foods (Sirieix & Schaer, 2005). They found that consumers have more confidence in farmers' market and direct outlets than conventional retail outlets claiming to sell organic foods. Similarly, consumers' trust in the certification logo may enhance or reduce consumers' intention to buy organic foods, depending on consumers' perception of the certification logo and ease of appreciating such logos. For example, Chen (2007) found that Taiwanese consumers face problems in identifying organic foods logos and labels due to the existence of too many certification agencies. Such confusions may result in skepticism as pointed out by other researcher studying consumers' perception of government certification of safe

foods in Thailand (Roitner-Schobesberger, Darnhofer, Somsook, & Vogl, 2008). The study found that consumers do not have enough confidence in the “safe food” certification since stakeholders at field levels often violate the recommended criteria of certification. Another study conducted by Tung et al. (2012) reported inconsistency between consumers’ intention and actual purchase of organic foods in Taiwan due to trust issues. It was reported that consumers did not necessarily purchase organic products despite their concern about pesticides in the conventional food that they consume. The study attributed such gap between intention and actual behavior to the lack of trust in the organic farming process.

It appears from past studies that trust may act as an intervening factor in consumers’ buying intention and actual behavior. Therefore, depending on the strength of trust in organic products and other stakeholders, consumers’ purchase intention can be strengthened or weakened. Such an intervening effect is expected to strengthen the intention-behavior relationship in case the level of trust facilitates to perform the behavior, or weaken the intention-behavior relationship in case the level of trust is restrictive to perform the behavior. According to Baron and Kenny (1986), a moderator variable could be a qualitative or quantitative variable that would shape the direction and/or strength of the relationship between a predictor and a criterion variable. Therefore, the current study hypothesizes trust as a moderating variable, influencing the direction and strength of the relationship between intention and behavior. The hypothesis stands as follows:

H1d: Trust will moderate the relationship between Purchase Intention and Purchase Behavior such that when Trust is high, the relationship between Purchase Intention and Purchase Behavior will be strengthened, and vice versa.

Attitude has been a widely investigated determinant of behavior across many product categories and behavioral set-up (Martin Fishbein & Ajzen, 2005). The attitude works as a crucial antecedent to the behavioral intention which has been defined as the degree of favorable or unfavorable disposition of the behavior under study (Ajzen, 1991). Empirically, attitude towards consumption of a product has been reported to be one of the most important predictors of consumers' preferences, including preference for food products (Bredahl, 2001; Conner, Povey, Sparks, James, & Shepherd, 2003). Some researchers observed that an individual having some degree of behavioral intention, may undertake the cost-benefit evaluation to foresee the results of future actions. In such cases, the positive evaluation of the tentative action is connected to positive attitude (Cheng, Lam, & Hsu, 2006). The theory of planned behavior also posited that positive attitude towards a particular behavior reinforces the intention to undertake that particular behavior (Ajzen, 1991). Similarly, in most food related studies, it was observed that attitudes act as a significant antecedent of purchase intention (Arvola et al., 2008; Backman et al., 2002; Povey, Wellens, & Conner, 2001). Therefore, the hypothesized relationship between attitude and intention stands as follows:

H2a: Attitude towards organic food is positively related to the Purchase Intention of organic foods

Subjective norm, being an integral construct of the theory of planned behavior, is a significant antecedent of purchase intention (Ajzen, 1991). Past studies have been mixed in terms of findings on the relationship between subjective norm and purchase intention. For example, Backman et al. (2002) and Vermeir and Verbeke (2008) reported positive but weak relationship between subjective norm and behavioral



intention in food related studies. On the other hand, in a cross-cultural study of organic food purchase behavior, Arvola et al. (2008) found social norms to be positive and significant, but specific to a geographical location. Other food related studies found significant and positive influence of subjective norms on purchase intention and/or behavior (Lodorfos & Dennis, 2008; Magistris & Gracia, 2008; Onyango, Hallman, & Bellows, 2007; Tarkiainen & Sundqvist, 2005). Therefore, the hypothesized relationship between subjective norm and purchase intention can be stated as follows:

H2b: Subjective Norms towards organic foods is positively related to the Purchase Intention of organic foods

In addition to the hypothesized relationship between subjective norm and intention, many past studies posited that there is a positive direct relationship between subjective norm and attitude (Aertsens, Mondelaers, Verbeke, Buysse, & Huylenbroeck, 2011; Tarkiainen & Sundqvist, 2005). Researchers like Miniard and Cohen (1979) reported multi co-linearity between normative and attitudinal measures, thereby indicating that norms influence attitude. In fact, there were many past investigations that indicated on the influence of subjective norms on attitude (Chang, 1998; Oliver and Bearden, 1985; Sheperd and O'Keefe, 1984). Specifically to organic food related behavior, the influence of subjective norm on attitude has also been evident from the study undertaken by Al-Swidi et al. (2014). Therefore, a hypothesis may be drawn as:

H2c: Subjective Norms positively influences the Attitude towards organic food

Consequently, the resulting relational paths also call for testing the mediating effect of Attitude in the relationship between Subjective Norm and Intention. Therefore, another hypothesis would follow from the aforesaid relationship:

H2d: Attitude mediates the relationship between Subjective Norm and Intention.

Perceived Behavioral Control (PBC) has been an important addition to the theory of Reasoned Action to account for non-volitional element of behavior. Perceived behavioral control has been viewed as an individual's perceived ease or difficulty of undertaking a particular behavior (Ajzen, 1991). Some scholars refer PBC to an individual's perception of the extent to which factors or resources that might enhance or prevent performance of the behavior (Jin & Kang, 2010). Thus, according to the theory of planned behavior, if factors likely to enhance a behavior are perceived to be strong, it might be expected that an individual would intend to perform the behavior. Since the theory of Planned Behavior is primarily aimed at explaining and predicting volitional behavior, the addition of PBC is supposed to have increased its explanatory capability. Many past studies reported significant and positive relationship between perceived behavioral control and behavioral intention. Specifically to organic or general food studies, similar findings were reported (Zhou, 2013; Lodorfos & Dennis, 2008). Thus, the following hypothesis may depict the relationship between perceived behavioral control and purchase intention:

H2e: Perceived Behavioral Control in buying organic foods positively influences the purchase Intention of organic foods.

## CHAPTER THREE

### METHODOLOGY

#### 3.1 Introduction

This chapter discusses research methodology and tentative procedures to be undertaken by this study. Research design has been discussed along with operationalization of variables that are central to research framework. Consequently, a set of measurements of each variable is explained. The subsequent part elaborates on population, sample of the study and data collection issues as well. The plan on conducting pilot study is also provided. The chapter concludes with the discussion of various statistical techniques and procedure that may be used for data analysis, interpretation and reporting of results.

#### 3.2 Research Design

The early question that need to be answered before deciding on the research design is to deliberate on the appropriateness of quantitative or qualitative approach. The qualitative, naturalistic approach is taken when observing or explaining reality with the objective of formulating a theory that is supposed to explain what was experienced in the past or currently being observed. The quantitative approach is applied when the researcher starts with a theory or with a set of observed tentative relationships (hypothesis), then tests for confirmation or rejection of such relationships (Newman & Benz, 1998).

Quantitative research approach has its roots in positivist philosophies, therefore, most quantitative research approaches appear to emphasize that there is a common reality

(the one ~~truth~~”) to which people may agree (Newman & Benz, 1998). According to Firestone (1987), four key dimensional differences may be observed between the quantitative and qualitative approaches based on assumption, purpose, approach and researcher’s role. Regarding assumption, is objective reality searched through facts (quantitative) or the ~~reality~~” is a social construct (qualitative)? Regarding purpose, is it searching for causes (quantitative) or understanding (qualitative)? Regarding approach, is it experimental or causal (quantitative), or a form of ethnography (qualitative)? Finally, regarding researcher’s role, is the researcher detached (in quantitative) or immersed in the research context (qualitative)? Specifically, a quantitative research is defined as the one where the researcher mostly employs post-positivist claims for developing knowledge, for example: Cause-effect deliberation, reduction to particular set of variables, hypotheses and questions, practice of observation and measurement, and the test of theories, etc.; employs strategies of investigation such as experiments and surveys, and gathers data on predesigned instruments that provide statistical data (Creswell, 2013).

The study follows an explanatory or causal design to address the research problem and achieve its objective. For the current study, explanatory design is justified because it needs to explain the relationships between antecedents of intention and purchase behavior of organic food. Hypotheses need to be formulated to explain the relationships by demonstrating if there is any statistical significance or not. Research design also addresses the issues related to population and sample of the study, sampling technique, method of data collection and data analysis. Thus, from the viewpoint of research philosophy, specifically from the epistemological point of view, the current study follows quantitative approach of research in order to suit the research problem at

hand. The causal nature of the study warrants the quantitative design for investigating the issue at hand.

Another reason why quantitative method is appropriate for this study as it allows the research problem to be addressed in a very specific terms by distinctively specifying both the independent and the dependent variables under research agenda (Matveev, 2002). Quantitative approach also yields highly reliable data due to controlled observations, mass surveys, or other form of research techniques (Balsley, 1970). Some scholars favored survey method of data collection in certain cases, as Kerlinger and Lee (2000) opined that survey research is appropriate to gather information on personal and social dimensions, beliefs, and attitude measures. Hence, from the set of study objectives, quantitative approach seems to be more systematic to arrive at objective conclusions, to formulate and test hypotheses, to determine the issues related to measurement of causality as well as to eliminate or attenuate subjectivity in the research process (Kealey & Protheroe, 1996; Matveev, 2002).

### **3.3 Operationalization**

Operationalization may be viewed as a process of placing the concepts of interest into measurable contexts or of operating on those concepts in order to compare and analyze them in reality. Some authors clarified the link between conceptualization and operationalization by saying that conceptualization is concerned with the intellectual explanation of concepts for measurement, whereas operationalization is the development of actual and solid measurement techniques (Babbie, 1989). Similarly, Senese (1997) views operationalization as the process of defining variables that would represent particular concepts or portions thereof, while it is likely that researchers‘

arguments and ideas may influence this process in defining how concepts would be measured.

Therefore, the researcher looked into the context and research objectives to operationalize the variables in the proposed model. The purchase behavior has been operationalized as a single dimensional variable to be measured by using 6 items. The first item is the purchase frequency, the second one is the level of expenditure on such purchases and the third one is the proportion of organics to total foods purchased in a given time frame. The rest three are based on price related behavior and future possibility of continuation of current behavior. For example, the fifth and the sixth items are based on Uçar and Özçelik (2012) who studied consumers' actual purchase behavior of organic foods. A distinction has been made between absolute and relative price to compare consumer's perception whether organic foods are expensive as compared to conventional alternatives. Some researchers went further and posited that in addition to consumers' preference to purchase organic foods at higher prices, the extent of price sensitivity should be studied as well (Voona et al., 2011). Therefore, the fourth item is adapted from the study as mentioned to account for price sensitivity in measuring purchase behavior.

Getting back to the first three items, purchase frequency has widely been used in previous studies to measure actual behavior (Chan, 2001; Chandon, Morwitz, & Reinartz, 2005; Thøgersen, 2011). Although self-reported buying frequencies have sometimes been questioned (Bui, 2005; Peattie, 2001), numerous studies support the acceptability of self-reported measures of such constructs (Wallace, Paulson, Lord, & Bond, 2005). In the next section (Measurement of Variables), a discussion note has been included regarding this issue of self-reporting measures.

However, the self-reported purchase frequency alone may not reflect the true nature of actual purchase behavior. The range of expenditure in a given timeframe would also complement the frequency information. In fact, this approach has been taken by many researchers where the amount of money spent has been investigated along with the frequency of actual purchase behavior (Chan, 2001; Guo & Barnes, 2012; Anić & Radas, 2006). The proportion or the quantity of organic food to total food intake may also be taken into account to reflect the actual purchase scenario. For example, Dawson (2003) recommended similar measures of quantity in addition to frequency, while Kriwy and Mecking (2012) indicated to measure the proportion of money spent on a specific category to overall category.

Another reason of measuring the purchase behavior through multi-item measures is to ensure higher reliability of studying this variable. Historically, past researchers posited that multi-item measures are better served than single-item measures in marketing research (Baumgartner & Homburg, 1996; Churchill Jr, 1979; Peter, 1979). However, taking predictive validity as the most important criteria, recent researchers posit that the single-item measures of many constructs in marketing research are equally as valid as multiple-item measures (Bergkvist & Rossiter, 2007), provided that there should be a concrete singular object and a concrete attribute of the object. It follows that, if a concrete single object takes one concrete attributes to define the object, then single item measurement would be as good as multi-item measurement. However, for the purpose of this research, we would adopt multi-item measures instead of single item measures.

It appears that, the actual purchase behavior (a single object), though has been measured by many researchers through purchase frequency alone (Dimitri & Dettmann, 2012), may not necessarily contain only one concrete attribute like

frequency, but also contains associated attribute like amount of money spent, proportion of total food purchases, price sensitivity and future purchase possibilities in order to define it completely. Therefore, it seems appropriate that these issues must be taken into account while operationalizing the actual purchase behavior. Thus, a 6-item measurement has been developed based on Chan (2001), Uçar and Özçelik (2012), and Voona et al. (2011).

Trust has been viewed with much importance in food products, specifically in organic foods (Giannakas, 2002; Padel & Foster, 2005). Some scholars went further and classified organic foods as “credence products”, calling for disseminating enough credible information to customers to elicit trust (Janssen & Hamm, 2012). Trust may not necessarily point toward organic food itself, but also to trust on stakeholders related to organic food supply chain and regulatory bodies. For example, Chen (2013) indicated various expressions of trusts like trust on suppliers, trust on the industry and also the trust on various institutions that consumers think while trusting organic foods, thereby viewing trust as a multi-dimensional construct. However, there is a considerable number of precedence in research literature which showed that trust could also be operationalized as a single dimensional construct even after considering multi-directional sub-factors of trust (Teng & Wang, 2015). It appears that the latter approach was possible when there is either widespread lack of trust among customers for multiple credibility factors or there exist high inter-correlations among multi-faceted trust factors, leading to interchangeability of credibility perception of apparently different institutions showing the similar direction of trust factors. Accordingly, Voona et al. (2011) operationalized consumers’ trust by employing single-dimensional approach by measuring trusts in various stakeholders in the organic food sector. In fact, such single-dimensional operationalization makes sense



as Chen (2013) showed that there are high degrees of influences of each type of trust on other types of trusts in his study in the organic food sector. For example, the study postulated about eleven hypotheses regarding the influence of one type of trust on the other, and majority of them (eight out of eleven) were found to be significant (Chen, 2013). Therefore, the fact that there exist sufficient levels of inter-correlations among multi-item measures, the trust construct may easily be operationalized as a single-dimensional construct as well. Thus, trust is operationalized as confidence in organic food available in the market as well as trust in institutions related to organic foods in a single-dimensional construct. A 6-item scale is used adapted from Voona et al. (2011) and Tung et al. (2012).

Another construct, habit, has been measured by many authors through past behavior (Ouellette & Wood, 1998). However, past behavior as a proxy for habit has drawn opposition from many other scholars (Ajzen, 2002). The opposing scholars opined that, since some degree of automaticity is expected in a habit situation, it is unlikely that habit will be activated in an unstable situation, rather a generally stable situation must be present for a habit to activate (Ajzen, 2002; Gardner, 2009). Therefore, habit can be viewed as a degree of automaticity in behavior that may not necessarily move through conscious intention towards action, but more of an activated behavior when situational cues and stability are present (Orbell & Verplanken, 2010; Ji & Wood, 2007). While many approaches have been taken to operationalize habits in various contexts, Self-Reported Habit Index (SRHI) has been widely used and cited in consumer behavior literature. The original version of SRHI is a 12-item scale which attempts to measure automaticity in behavior (Verplanken & Orbell, 2003). Parsimonious and validated versions are available (de Bruijn, Gardner, van Osch, &

Sniehotta, 2013) which will be adopted in the current study to operationalize habit construct.

Situational variables have been seen by most scholars as extraneous variables that consumer may not have expected in a purchase situation, but may have important implication in his/her purchase decision (Belk, 1977). Although many past authors agreed on the importance of situational factors in consumers' green decision making process (Carvalho et al., 2010; Hines et al., 1986), their operationalization greatly varied across contexts. Some authors operationalized with multiple dimensions (Iyer & Smith, 1989), whereas some operationalized as a single-dimensional construct (Kaiser, 1996).

Another operationalization issue beyond dimension decision is what researchers need to include in the "situation" itself. In fact, many variations were observed in the selection of situational variables based on the product domain and behavioral context. For example, some authors viewed situational factors as economic incidents, availability of products and alternatives, and social situations (Hines et al., 1986). Some researchers opined that situational variables were usually chosen arbitrarily, based on the influence of those situational factors in a specific context (Kaiser, 1996). Such observation is not contradictory to scientific research approach because it means, in another way, that operationalization should be context specific—just like Fishbein and Ajzen (2005) advised to recognize underlying beliefs before applying the TPB model in a specific context.

Considering the available literature on organic food purchase behavior and relevant situational variables, the current study operationalizes the situational variables by accounting for availability (Carvalho et al., 2010; Soye, 2012), price (Carvalho et al.,

2010; Soyez, 2012; Klöckner, 2011), social accompaniment (Nicholls, Roslow, & Dubliss, 1997), and distance to travel to buy organic food (Nicholls et al., 1997; Zhuang et al., 2006). It may be noted here that the study is attempting not to measure the influence of situational variables in multiple directions, but to measure the degree of strength of Situational Constraints that are believed to be only negatively affecting the purchase behavior. Most of these situational factors are well-established as constraints under Bangladesh context. For example, it was found that lack of availability of desired organic foods is a behavioral constraint for consumers in Bangladesh (Mukul, Afrin, & Hassan, 2013). Other researchers reported that both the price and availability could be important constraints in organic food purchase behavior (Ahmed & Rahman, 2015; Iqbal, 2015). In addition, distance of stores can also limit the availability, thereby oftentimes might act as a situational constraint as reported by past studies conducted under the Asian context (Zhuang et al., 2006). Other researchers also confirmed this finding across the globe (Anić & Radas, 2006; Dimitri & Dettmann, 2012).

In addition, in a developing country like Bangladesh that is listed in the group of countries having *collectivist* cultural orientation under Hofstede's (1984) framework, it may be expected that solitary shopping without any social accompaniment may lower the purchase behavior for organic foods. Such expectation may not be unfounded as it was reported in studies in the Asian context that companionship has significant positive effect on consumers' purchase behavior (Ashraf & Rizwan, 2014; Zhuang et al., 2006). In order to conceptualize these four constraining elements in a single construct, it may be operationalized in a way that the existence of all of these elements channels the behavior in the same direction. In fact, based on the pilot study results, there exists sufficient internal consistency or inter-correlation of various

constraining elements in constructing the score of situational constraints. Tanner, Kaiser, and Kast (2004) followed such operationalization where apparently dissimilar and multiple items were measured together because of having satisfactory inter-correlations of certain situational variables. Therefore, situational constraints may be operationalized by using the aforementioned indicators under the current context.

Purchase intention, being a key construct, has been widely studied by many researchers under TPB context. Thus a plenty of operationalization alternatives exist in psychology and consumer behavior literature. According to Ajzen (1991), intentions are assumed to account for the motivational factors that may predict a behavior. He argued that intention usually shows how hard a person is willing to try, and how motivated the person is to perform the behavior in reality. The current study adopts a 6-item scale for measuring purchase intention. The first four items are modified from the intention measure as originally proposed by Chan (2001) through a three-item scale, whereas the rest two are adopted from Tseng and Tsai (2011), and Ramayah, Lee, and Mohamad (2010). The adopted measure is modified based on studies by Ajzen (2002b).

Attitude has long been a center of study for behavioral researchers (Martin Fishbein & Ajzen, 2005). For the current study, the four dimensions of attitudes would be measured based on the foregoing literature review. They are, Cognitive Attitude, Affective Attitude, Health Attitude and Environmental Attitude towards organic food.

Attitude toward the behavior has been defined as the extent to which a person has a favorable or unfavorable evaluation of a behavior (Ajzen, 1991). Consumer behavior literature has discussed about two broad types of attitudes that people may have

towards a behavior. One is the Cognitive attitude, more focused on the knowledge and cognition of the behavior; and the other one is Affective attitude, more focused on the emotional evaluation of a behavior (Eagly & Chaiken, 1993; van den Berg, Manstead, van der Pligt, & Wigboldus, 2006). Since both types of attitudes are proposed to be measured in the current study, they are operationalized based on measures as developed from Crites, Fabrigar, and Petty (1994) and Arvola et al. (2008).

Another important dimension of attitude is the health attitude towards purchasing organic foods. Past researchers indicated the health concern as one of the key determinants of organic food purchase behavior (Kriwy & Mecking, 2012; Padel & Foster, 2005). Health attitude has been operationalized by modifying and adopting measures from Chen (2009), Magnusson et al. (2003), Schifferstein and Ophuis (1998), Tarkiainen and Sundqvist (2005).

Environmental attitude towards organic foods could also be an important determinant of purchase behavior (Hughner et al., 2007; Magnusson et al., 2003). The current study proposes to investigate specific environmental attitude rather than general environmental attitude. This approach is proposed in line with the recommendation that specific environmental attitude is more appropriate when it comes to issues of measurement and making a causal inference (Martin Fishbein & Ajzen, 2005). Environmental attitude towards organic food is operationalized by modifying and adopting measures based on Magnusson et al. (2003).

Subjective norm has been an important construct of TPB and Integrated Behavior Model (Ajzen & Fishbein, 1980; Montano & Kasprzyk, 2008). Subjective norm refers to the perceived social pressure to perform or not to perform the behavior (Ajzen, 1991). Subjective norm would be measured by operationalizing this construct as

composed of injunctive norms and descriptive norms (Cialdini et al., 1990). Injunctive norms refer to what is usually approved of, i.e., what ideally ought to be done; on the other hand, descriptive norms refer to what people do in reality (Lapinski & Rimal, 2005). Based on these two directions, the construct will be measured by an 8-item scale (4 items of each dimension), modifying and adopting scales used by Arvola et al., (2008).

The concept of Perceived Behavioral Control refers to the extent to which people think they are capable of performing certain behaviors in order to attain certain goals. This has been an important construct in TPB. The construct perceived self-efficacy in IBM may be similar to PBC in TPB. In repelling the confusion surrounding perceived behavioral control and self-efficacy, two constructs coming from two different models, Ajzen (2002) clarified that perceived behavioral control should be conceived of having two measures: one surrounding ease or difficulty in performing a behavior, i.e., self-efficacy measures, and the other one is the controllability measures (measuring beliefs about the extent to which performing the behavior is up to the actor). He argues that an apparently easy task, like applying for a job (high self-efficacy), may be out of control for an individual if he/she fails to collect necessary reference letters (low controllability). He went on further to explain that perceived behavioral control simply means subjective degree of control over performance of the behavior itself. In order to avert misunderstandings surrounding these constructs, as he noted, the term “perceived behavioral control” should mean “perceived control over performance of a behavior”. Evidently, such renewed interpretation may actually have narrowed down the distinction between self-efficacy and perceived behavioral control, although it has been maintained that these two are separate constructs based on empirically supporting literature (Ajzen, 2002a; Tavousi et al., 2009).

Based on these operationalization challenges, the current study adopts the concept of perceived behavioral control, comprising of both efficacy measures and control measures as mentioned by Ajzen (2002). The construct has been operationalized by adopting 6-item measure, adapted from Courneya, Bobick, and Schinke (1999). The following table provides a summary of construct operationalization:

Table 3.1  
*Summary of Variables, Dimensions and Total Number of Items*

Variables	Dimensions and Scale Reference	Total items
Attitude	(a) Health Attitude (5 items) : Chen (2009), Magnusson et al. (2003), Schifferstein and Ophuis (1998), Tarkiainen and Sundqvist (2005) (b) Environmental Attitude (5 items): Magnusson et al. (2003) (c) Cognitive Attitude (5 items): Arvola et al. (2008), Crites et al. (1994) (d) Affective Attitude (5 items): Arvola et al. (2008), Crites et al. (1994)	20
Subjective Norms	(a) Injunctive Norms (4 items) (b) Descriptive Norms (4 items) Both are based on Arvola et al. (2008), Ajzen (2002b)	8
Perceived Behavioral Control	Perceived behavioral control refers to the perceived ease or difficulty of performing the behavior; and also perceived control over performance of a behavior (Ajzen, 2002a). Six items are used to measure PBC, based on Courneya, Bobick, and Schinke (1999), Ajzen (2002a).	6
Trust	Trust is an expectancy of positive outcomes that an individual can obtain based on the anticipated action of another party in an interaction described by uncertainty (Bhattacharya et al., 1998). Six items are used, based on Voona et al. (2011) and Tung et al. (2012).	6
Habit	Habit can be viewed as a situation-behavior sequences that have a degree of automaticity, so that they take place without self-instruction (Triandis, 1979). Four items are used to measure Habit, based on Self-Reported Behavior Automaticity Index (SRBAI) questionnaire, from Verplanken and Orbell (2003), and de Bruijn, Gardner, van Osch, and Sniehotta (2013)	4

Variables	Dimensions and Scale Reference	Total items
Situational Constraints	A consumer situation may be composed of all those factors specific to a time and place (e.g. a purchase situation) which may not originate from a knowledge of personal and stimulus attributes, and which have a demonstrable and systematic influence on customers' current behavior (Belk, 1974). Four items are used, adapted from Nicholls et al. (1997), Gaspar de Carvalho et al. (2010), Soyez (2012)	4
Purchase Intention	Purchase intention refers to the consumers' willingness to perform purchase behavior to have certain outcomes (adapted from Triandis, 1979). Six items are used, based on Chan (2001), Tseng and Tsai (2011), Ramayah, Lee, and Mohamad (2010)	6
Purchase Behavior	Purchase behavior refers to the overt and observable buying behavior of consumers regarding any product (adapted from Fishbein & Ajzen, 1975). Six items are used to measure this variable, adapted and modified from Chan (2001), Uçar and Özçelik (2012), and Voona et al. (2011).	6

After elaborating on the construct operationalization issues, the next section discusses the measurement issues related to all the constructs.

### 3.4 Measurement

This section deals with some measurement issues as well as details of operationalizing the measurement with reference to their sources and nature of modification. The section starts with a short discussion on scale granularity, then continues with self-reporting issues, and finally deals with adoption of measurement and modification issues with relevant references.

#### 3.4.1 Scale Granularity

Scale granularity means the number of response categories or cut-off points that are imposed on a scale (Smithson, 2006). It has been observed that researchers used 3, 5, 7 or 11 point scales, whereas 5 or 7-item scales are most common in marketing



research (Bruner, Hensel, & James, 2005). The current study uses single item scales for demographic information and multi-item scales for all other constructs. All the information would be collected through a self-reporting questionnaire. The dependent variable, purchase behavior, as well as intention and other antecedents have been proposed to be measured in multi-item self-reporting scales.

There is a growing body of literature dealing in number of items (granularity) that may prove to be ideal in collecting self-reporting data. Most studies concerning the use of either 5 or 7-item scales do not necessarily confer any conclusive idea favoring one approach over the other. However, a study showed a slight support to use 7-point scale among respondents with more cognitive ability like student respondents, and use 5-point scale when respondents are general public (Weijters, Cabooter, & Schillewaert, 2010). However, the authors seemed somewhat indifferent in using 5-point or 7-point scale at the end. Another study conducted in European perspective utterly recommended 5-point scale to provide better quality of data compared to 7 or 11-point scale (Revilla, Saris, & Krosnick, 2013). Interestingly, the study falls in line with recommendations by Weijters et al. (2010) that 5-point scales be used when respondents are general public. It appears that, consistent use of either 5 or 7-point scales can be employed for the current study. The study hereby proposes to follow a 5-point Likert scale for all multiple items in the questionnaire. The questionnaire will measure the self-reported items from individual respondents.

### **3.4.2 Self-reporting Issues**

Another important issue regarding self-reporting measures may deserve further deliberation here. Some scholars are of opinion that self-reported behavior may lack reliability when contrasted with observed behavior, thus businesses may be skeptical

of such self-reporting measures (Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997). This alleged setback of self-reported behavior has been explained by Peattie (2001) in terms of “social over-reporting” of environmental concern among consumers. Similarly, Hume (1991) reported that consumers might not essentially act in line with their social reporting tendency about the environment, thus leading to a lack of consistency and reliability. Other scholars added that, consumers may have the intention but might not act because they do not want to sacrifice the ease and contentment in favor of getting a green choice that appears to be more inconvenient to acquire (Bui, 2005).

However, self-reporting measures are widely used in the psychological literature because of ease in usability and ability to offer straightforward interpretation (Laros & Steenkamp, 2004). It has been shown in other studies that self-reporting scales are quite useful and valid in consumer behavior studies (Holbrook & Batra, 1987; Mano & Oliver, 1993). In a meta-analysis of 797 studies, Wallace, Paulson, Lord, and Bond (2005) found that both observed behavior and self-reported behavior showed consistently significant relationship with their antecedents. Self-reporting scales are also being widely used in food related studies. For example, Laros and Steenkamp (2004) used self-reporting scale to measure emotion regarding genetically modified food; Chan (2001) used self-reporting scale to determine organic food purchase behavior in China; Van Loo, Diem, Pieniak, and Verbeke (2013) used self-reporting scale to study the consumption behavior of organic yogurt. Interestingly, it is not only the actual behavior that is being measured through a proxy of self-reporting scale, but also many other measures in psychology and consumer behavior studies employ self-reporting scales to estimate various constructs. For example, self-reporting measures may be used to rate or describe an event (Roseman, 1996), to rate a priori specified

word related to emotion (Plutchik, 1980), to indicate self-regulation (Deci & Ryan, 1985), to report habits (Orbell & Verplanken, 1998), etc. In fact, the highly cited and widely accepted model of habit measurement, Self-Reported Habit Index (SRHI), is based on self-reported scale to measure repeated behavior (Verplanken & Orbell, 2003).

Numerous other evidences also suggest that self-reported measures, in many cases, could be a valid proxy for the measurement of actual variable. In a meta-analysis, researchers found that self-reported health-risk behavior is statistically a valid proxy of actual health-risk behavior, though they cautioned about some of the limitations associated with self-reported behavior (Brener, Billy, & Grady, 2003). In other food related studies, it is mentioned that self-reported food preference reports were widely used to predict food choices in marketing research to such an extent that, self-reported frequency of dietary consumption was taken as the preferred way of evaluating food intakes in epidemiologic investigation of chronic diseases (Drewnowski & Hann, 1999).

Therefore, the current study may employ self-reporting scales to measure and investigate the proposed constructs.

### **3.4.3 Construct Measurements**

In the current study, as already noted, multi-item scales would be used to study the constructs. For all constructs in the study, relevant items were taken from past investigations related to organic food sector. This was done because of two reasons, as promulgated by Hyman, Lamb, and Bulmer (2006) . First, existing scales are less troublesome to work with as these scales are already validated, resulting in better

quality of data; second, it saves times and monetary cost when already validated scales are available. In certain cases, apparently useful measures demonstrated in other areas of consumer behavior have also been modified and adopted for the current study. Some items were modified and adopted keeping the original objective in mind in order to relate specifically to the current study. Consumer behavior literature and theoretical directions were taken into account to choose the items that best represent the dimension of constructs that are considered for the research. In addition, the type of sampling work and field survey situation requires parsimony in developing the questionnaire. All these considerations were kept in mind while developing measurement of constructs under this study.

In this process of deciding on scales, i.e., developing the survey instrument, it is important to define if the indicators are of reflective or formative in nature. While formative indicators add to the formation of a construct (i.e., they define the construct and form various dimensions of it), reflective indicators characterize a construct and are unidirectional. Thus formative indicators are not assumed to be correlated whereas reflective constructs are assumed to be highly correlated with each other (Chin, 1998).

There are also some decision rules that may be applied to decide if the indicators of a latent variable are of formative or reflective type. One such rule for knowing if indicators are of reflective or formative type is to check whether they are interchangeable or not. If it is found that indicators are interchangeable among themselves, it means that they are highly correlated among themselves and are reflective in nature. In the current study, indicators of each construct denote comparable content, thus share a common meaning (high inter-correlations) since deleting one indicator may not change the conceptual domain of the construct so they

are reflective in nature. Another rule for identifying the nature of indicators is to consider the direction of causality (Petter, Straub, & Rai, 2007). For formative constructs, the causality is from the indicator to the latent construct as the indicator forms different dimensions of the construct. On the other hand, for reflective constructs, the direction is opposite to those of formative constructs as variations in the construct lead to variations in the indicators (Petter et al., 2007).

As far as conceptualization of constructs is concerned for structural equation modeling, some researchers opined that the same construct can be viewed as both formative and reflective to cater to the objective of two separate studies (Borsboom, 2005). Such an observation has also been confirmed by recent studies which found that research objectives and theoretical expectations had bearings on specification of constructs as either reflective or formative (Mackenzie et al., 2011). Thus, Bagozzi (2011) suggested that studies be dependent on objectives and conceptual soundness to decide on the relationship between constructs and their indicators.

Therefore, based on the extensive literature survey, the nature of causality in the proposed model and the logic of model specification, the current study identifies the organic food purchase behavior model as a second-order, hierarchical-reflective model with a number of first-order constructs with reflective relationships in the outer model. Thus all indicators in the current study are of reflective type since they exhibit the latent construct in such a way that any variation in the construct results in variations in its indicators.

Except for demographic factors, all constructs are measured through multi-item scales. A number of filter questions were used to collect data from relevant respondents. The filter questions are based on indications by Krystallis, Fotopoulos,

and Zotos (2006) in order to study customers who are actually buying organic foods. The rationale behind including actual customers is to look into what constitutes and acts as determinants of their buying behavior, since this is the central research theme of the study. This rationale has also been observed in other studies where only actual buyers were probed and surveyed since understanding actual buying behavior was the primary concern (Carrington et al., 2010; Niessen & Hamm, 2008).

For the purpose of filtering, three categories of organic foods (rice, vegetables and tea) will be probed as these are the dominant categories of organic foods under Bangladesh context (Mamoon & Haque, 2013). One additional category would be included since there is only a very nascent market of organic meat that is just showing up as a new segment. The category would be classified as “other” category. The respondent may qualify for subsequent measurements if they qualify at least as an actual buyer (present or past) in any of the four groups of organic foods. After filtering, the subsequent measurement will be based on the organic food as a food class rather than specific branded product.

The study now elaborates on the operationalization of key constructs under the research framework.

Purchase behavior has been operationalized as a single dimensional variable, mostly based on past studies by Chan (2001), Pino, Peluso, and Guido, (2012), and Uçar & Özçelik (2012). It is measured by using six items: purchase frequency, amount spent, ratio of organics to total food purchased in a given time frame, purchase behavior compared to prices of alternatives, sensitivity to higher prices for the same amount of purchases, and whether purchase behavior would most likely continue in future. The first three items were modified from Chan (2001), with relevant changes in wording

to suit the context. The original construct reliability was reported at 0.80. The first item, purchase frequency, was worded in such a way as to allow for separation between ~~“regular”~~ and ~~“occasional”~~ buyers of organic foods. The criteria of regularity of purchase has been adopted from Pino, Peluso, and Guido, (2012), where customers who reported that they bought organic food ~~“greater than ten times per year”~~ were considered ~~“regular”~~, whereas those who reported that they bought such foods less than ten times per year were treated as ~~“occasional”~~ purchasers. It was also indicated that self-reported behavioral measures appear to be consistent with actual behavior above and below this threshold (Niessen & Hamm, 2008). The scale can be worded as 1= never bought before, 2= less than 10 times per year, 3= once a month, 4=once a week, and 5=twice or more per week. The scale can also be used as a filter since only actual buyers are included in the analysis.

The second item, money spent on organic foods per visit to market, has been reworded to suit the context. The original 7-item scale has been modified and adopted as a 5-item scale. The scale stands as 1=not much, 2=low, 3=moderate, 4=much, 5=a lot.

In the original scale, the third item was ~~“number of items purchased”~~, whereas the modified item reads as ~~“the ratio of organics to total food purchased”~~. In a way, the ~~“number of items purchased”~~ is inherent in the modified item since without this information, ratio of organics to total food purchased cannot be measured. The modification is justified since the original one was an absolute measurement whereas the modified one is a relative measurement. Such measurement is also evidenced by another study by Zuur & Fuchs (2010). In fact, the absolute measurement would place a customer as ~~“high quantity buyer”~~ based on sheer purchase quantity, regardless of

what proportion that would mean to his/her total consumption of foods. Relative measurement may be considered a standardized way to remove this anomaly and place customers at a high or low quantity end based on proportion of organic food to total foods purchased. Similar measurements were also adopted by other studies (Aertsens et al., 2011; Lockie & Lyons, 2002; Squires et al., 2001). Therefore, the scale can be worded as 1= less than 25%, 2=about 25%, 3= about 50%, 4=about 75%, 5= 75-100%.

The fifth and the sixth items are based on Uçar & Özçelik (2012) who studied consumers' actual purchase behavior of organic foods. The study reported that price may influence the actual behavior of many consumers, therefore, the price issue should be measured while measuring actual behavior. However, in order to understand the influence that price may play in the purchase decision, there must be a distinction between the absolute and the relative prices. Evidently, if only the absolute price is evaluated, it would be difficult for a consumer to make a purchase decision whether the product is appearing to be expensive or not. Therefore, some past studies proposed that customers may more accurately determine if a product is expensive or not based on a comparison to a reference price, for example, the price of organic food to a similar conventionally produced food product (Soler, Gil, & Sanchez, 2002). Thus, the purchase behavior has been referred in relation to price of similar produced conventional food products.

In the same line of thought, another study went further and emphasized that in addition to consumers' tendency to buy organic foods at higher prices than conventional foods, the price sensitivity itself should be measured while attempting to measure actual purchase behavior in relation to price (Voona et al., 2011). Therefore, the fourth item is adapted from the study as mentioned to account for price sensitivity



in measuring actual purchase behavior. In constructing the measurement range, the past studies exhibit a range of price premiums that customers were willing to pay for organic foods. For example, some researchers found tentative four points of price premium that is plausible for organic food customers, namely 5, 10, 15 and 20 percent premium over conventional foods (Gil, Gracia, & Sánchez, 2000). In another study, Gracia, María, and Sánchez (1998) found that the maximum willingness to pay fluctuated between 20.7% for honey and 74.6% for meat in regular organic food customers, and between 4% for cereal products and 22% for vegetables among occasional customers.

Similar studies by Esteban, Gracia, Roig, and Sánchez (2001) reported that the maximum premium fluctuated between 20.7% for young consumers and 22.7% for organic consumers of organic tomato. For organic wine products, Mollá-bauzá, Martínez, Poveda, and Pérez (2005) reported that the premium that consumers were willing to pay was found fluctuating between 11.94% and 20.9%. In another study conducted in Turkey, the researchers found that the maximum premium that organic food customers were willing to pay was about 36 percent above the price of conventional food products (Akgüngör, Miran, & Abay, 2010). Other researchers studied the tentative premium on local apples and found that the premium could be as high as 70% over the traditionally grown food items, specifically fruit products (Novotorova & Mazzocco, 2008). Therefore, based on the range reported by past studies as well as the existing retail prices, we may find that the range is on the higher end only for meat products, whereas the range for other categories can be limited within 70 percent. However, under Bangladesh context, many organic foods (specifically organic rice varieties) are already being marketed with a premium over 80% as compared to conventional food products (Meenabazar, 2015). Thus, we may

test the following ranges of premiums when classified and measured into five categories, for example: less or equal to 20 percent, 21 to 40 percent, 41 to 60 percent, 61 to 80 percent, above 80 percent.

The following table shows all the measurement items:

Table 3.2  
*Purchase Behavior (6 items)*

<b>Items</b>
How frequent are you in purchasing organic food?
How would you rate your average spending on organic foods per month?
What is the approximate proportion of organic foods to total amount of foods that you purchase per month?
In purchasing organic food, how much I am willing to pay more than conventional foods
I purchase organic food even though they are more expensive than alternative conventional foods
I would be glad to purchase more organic food in future

Source: Adapted from Chan (2001), Uçar and Özçelik (2012) and Voona et al. (2011)

Purchase intention will be measured by a 6-item scale based on Chan (2001), Francis et al. (2004), Tseng and Tsai (2011), and Ramayah, Lee, and Mohamad (2010), with modifications in wording to suit the context. The modification also follows Ajzen's (2002b) recommendation for constructing a TPB questionnaire. The first four items are modified and adapted from the original 3-item measure by Chan (2001) that reported a construct reliability of 0.83. The 5-point scale is consistently used with anchor points of 1=strongly disagree and 5=strongly agree. The first three items reflect the three ways of tapping into behavioral intention since the combination of all three perspectives is argued to be optimal, which has also been evidenced in guidelines on optimizing survey designs based on the TPB framework (Francis et al., 2004). However, such proposition may not exclude the possibility of including more

items to enhance reliability of measuring intention. Thus, based Tseng and Tsai (2011) and Ramayah et al. (2010), the rest of the items are included to construct a multi-item measurement of intention.

Table 3.3  
*Purchase Intention (6 items)*

Items
Over the next month, I expect to buy organic foods.
Over the next month, I want to buy organic foods.
Over the next month, I intend to buy organic food
Given the chance, I intend to switch to organic foods
Over the next month, I am very likely to buy organic foods
I intend to recommend others to buy organic foods

Source: Adapted and modified from Chan (2001), Tseng and Tsai (2011), Ramayah, Lee, and Mohamad (2010)

Habit, viewed as a single dimensional variable, would be measured by using a 4-item measurement, modified and adapted from the SRHI (Self-Report Habit Index). Originally proposed by Verplanken and Orbell (2003), the original SRHI measurement consists of a 12-item measurement. However, a 4-item parsimonious version, called Self-Report Behavioral Automaticity Index (SRBAI), is available as validated by Gardner, Abraham, Lally, and de Bruijn (2012). The construct validity was reported at 0.91 by a relevant study (de Bruijn et al., 2013). However, it is hereby proposed that an item in the SRBAI be replaced by an original item from SRHI to suit the organic food context. The SRBAI item “I start buying X before I realize I am doing it” may be replaced by an original SRHI item “I buy X as a part of my routine”. This modification may not significantly impact the construct validity since both the SRHI and SRBAI have been validated before. Scales are consistently anchored at 1=strongly disagree and 5=strongly agree. The items are as follows:

Table 3.4  
*Habit (4 items)*

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**Items**

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I buy organic foods as a part of my routine.

Buying organic foods is something that I do automatically while shopping.

Buying organic foods is something that I do not have to consciously remember while shopping.

Buying organic food is something that I do not have to think hard before buying.

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Source: Adapted from Verplanken and Orbell (2003), de Bruijn, Gardner, van Osch, and Sniehotta (2013)

Trust would be measured by adopting a 6-item measurement, developed from a 4-item scale originally used by Voona et al. (2011), with construct reliability reported at 0.944. However, wording has been modified to suit the Bangladesh context. Since organic logo is not required for domestic sales, the 4<sup>th</sup> item in the original scale has been modified to measure trust on government actions regarding ensuring authenticity of organic vegetables. The fifth item has been adapted from Tung et al., (2012), denoting the level of trust of consumers in the organic food in general. The sixth item is based on the customers' trust subject to their usual store choice. As already mentioned in the literature review that the types of stores selling organic foods may contribute to trust factor (Pivato & Misani, 2008; Sirieix and Schaer, 2005), therefore, the trust need to be measured whether this is centered around favorite stores or not. The situation is expected to be more applicable under Bangladesh context since the organic certification is not mandatory for domestic sales in Bangladesh, thereby conferring a huge importance of trust based on store image. Items 2 and 5 are reverse coded and would be measured accordingly. Scales are anchored at 1=strongly disagree and 5=strongly agree. The items are as follows:

Table 3.5  
*Trust (6-items)*

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<b>Items</b>
I trust that all stores selling organic foods are genuine about the organic nature of their products
I do not trust that local farmers of organic foods are truly practicing organic farming (R)
I trust the organic declaration on all the stores' shelves or packages
I am confident that the government is doing enough to check the claim of these organic stores
I do not trust the organic foods that are sold as claiming organic (R)
I trust organic foods only from my favorite retailer(s)

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Source: Adapted from Voona et al. (2011), Tung et al. (2012)

Situational factors pose special challenge of measurement because of its elusive nature in defining what would constitute a "situation" in consumer buying scenario. Different authors have studied it in various ways, however, the current study needs to choose or modify one that parsimoniously suits the organic food market scenario under Bangladesh context. For the current study, situational factors have been measured by 4 items, operationalized based on items indicated by various authors.

The first item, availability, has been considered a situational factor as indicated by Gaspar de Carvalho et al. (2010), Christos et al. (2009) and Soyez (2012). Item 2 was based on the indication that "price" may be viewed as a situational constraint by consumers (Gaspar de Carvalho et al., 2010; Soyez, 2012; Klöckner, 2011). Subsequently, Item 3 and 4 were adopted and modified from Nicholls, Roslow, and Dubliss (1997). Item 3 was based on the operationalization that purchase behavior is influenced when consumers are accompanied by family members or friends (Bearden, Netemeyer, & Teel, 1989). It was also observed that social company may influence price sensitivity of buyers (Wakefield & Inman, 2003). Similarly, some scholars

opined that it might be easier for accompanied buyers to take difficult purchase decisions when the influence of companions supports their intention to purchase (Zhuang et al., 2006). In an empirical study, it was found that socially accompanied buyers purchased more food and beverages than solitary buyers (Nicholls et al., 1997). Thus item 3 is suitable for the current study. It is reverse coded, therefore, necessary adjustments would be required during analysis.

Item 4 was based on the operationalization that time required to travel to store may act as a situational factor (Nicholls et al., 1997; Zhuang et al., 2006). Distant stores may not only limit the consumers' intention to visit frequently, but also may limit time available to consumers' for shopping, thus creating a limiting situation for consumers. All the items will be measured in a continuum of 1=strongly disagree to 5=strongly agree. Items are worded to suit the organic food market study, as shown on the following table:

Table 3.6  
*Situational Factors (4 items)*

<b>Items</b>
I often cannot buy as planned since my favorite organic food is not always available
I often avoid buying organic food because of high price
I usually buy more when go for shopping for organic foods with family or friends (R)
I often cannot buy organic foods because stores are far from home

Source: Adapted/developed from Nicholls et al. (1997), Gaspar de Carvalho et al. (2010), Soyez (2012).

Attitude has been operationalized into four dimensions, requiring four different measurements to arrive at a summed output. Therefore, Attitude would be viewed as a second order construct. According to Lohmoller (2015), PLS-SEM can be designed as a hierarchical components model (HCM) that includes the observable lower-order

components (LOCs) and unobservable higher-order components (HOCs) with a view to lowering the model complexity and make it more theoretical parsimony. Matching the two levels of abstraction points to the exposure of two sources of influence on every single measures: while the first-order accounts for the unique variance of measures in one of the specific latent variables, the second-order accounts for the common variance as represented by the general construct (Ciavolino, 2012). Due to these advantages, Attitude would be measured as a second order construct. The first dimension, health attitude, has been measured using a 5-item measurement, modified from a 3-item scale originally proposed by Tarkiainen and Sundqvist (2005) with a reported construct reliability of 0.811. Items are modified to suit the measurement of specific health attitude toward organic foods. The third item in the original scale is proposed to be replaced by another item used by Magnusson et al. (2003) that asks about health attitude in terms of organic food being healthy to children. The fourth item is adapted from Chen (2009), and the fifth item is adopted based on Schifferstein and Ophuis (1998) where it has been reported that preventive health behavior is another reason for customers buying organic food. Item 4 will require recoding as it is reverse-ordered. All the items are anchored at 1=strongly disagree to 5=strongly agree. The following table shows the measurement items:

Table 3.7  
*Health Attitude (5-items)*

<b>Items</b>
I think organic food is good for my health
I think myself as health-conscious consumer
I think organic food is good for my children's health
I believe organic foods are harmful for my health (R)
I think organic foods can prevent possible illness in future

Source: Adapted from Chen (2009), Magnusson et al. (2003), Schifferstein and Ophuis (1998), Tarkiainen and Sundqvist (2005)

Cognitive attitude has been measured by adopting scales from Arvola et al. (2008). The authors used a two-item measurement with 7-point semantic differential scales for the purpose. Combined with another two-item measurement of affective attitude, the construct reliability was reported at 0.93. The current study proposes to modify the measurement to a 5-point Likert scale to maintain consistency. The word “genuine” is added to avoid consumers’ interactive thinking with trust factors under Bangladesh context. In addition, three more items are suggested for inclusion, both for cognitive and affective attitude, based on Crites et al., (1994). Therefore, cognitive and affective attitude would be measured by 5-item scales for each. All the items will be anchored at 1=strongly disagree and 5=strongly agree. The following table shows the measurement items:

Table 3.8  
*Cognitive Attitude (5 items)*

Items
I think genuine organic food is beneficial
I think it is wise to buy genuine organic food
I think organic foods are worthless (R)
I think organic foods are useful
I think organic foods are safe

Source: Adapted from Arvola et al. (2008), Crites et al. (1994)

Affective attitude has been measured by scales as used by Arvola et al. (2008). The authors employed a two-item measurement with 7-point semantic differential scales to measure affective attitude. The construct reliability was reported at 0.93, combining with another two-item measurement of cognitive attitude as noted above. The current study proposes to convert the measurement to a 5-point Likert scale to maintain consistency with rest of the measurements. Like the measurement of cognitive attitude, the word “genuine” is added in order to avoid consumers’ interactive



thinking with trust factors under Bangladesh context. Item 2 was reworded based on the fact that food adulteration has been an issue that many consumers in Bangladesh are aware of (Huda et al., 2009), whereas many past studies reported that safety concern of conventional foods have led buyers to choose organic foods (Yin et al., 2010; Vega-Zamora, Torres-Ruiz, Murgado-Armenteros, & Parras-Rosa, 2014; Sangkumchaliang & Huang, 2012). Therefore, the feeling of lack of safety towards conventional food can be taken as a proxy for positive emotion towards organic food. As already mentioned, three more items would be included based on Crites et al. (1994), resulting in a 5-item measure. All the items are to be anchored at 1=strongly disagree and 5=strongly agree. The following table shows the measurement items:

Table 3.9  
*Affective Attitude (5 items)*

<b>Items</b>
I feel pleased to buy genuine organic food
I feel annoyed of adulteration of conventional food
I feel joy to consume organic food
I hate organic foods (R)
I feel excited to buy organic food

Source: Adapted from Arvola et al. (2008), Crites et al. (1994)

Environmental attitude towards organic foods may be measured by adopting items from Magnusson et al. (2003). The measurement by Magnusson et al. (2003) consists of a 5-item scale with a reported construct reliability of 0.90. The scale has been modified with relevant wording under Bangladesh context, which keeps the theme of the measurement unchanged. Each of the items are proposed to be anchored at 1=strongly disagree and 5=strongly agree. The items are shown on the following table:

Table 3.10  
*Environmental Attitude (5 items)*

<b>Items</b>
I think organic food will help improve the environment
I think organic food will reduce the use of artificial chemicals in agriculture
I think organic food will reduce the environmental pollution
I think organic food will reduce the use of pesticide
I think organic food will reduce soil pollution

Source: Adapted from Magnusson et al. (2003).

Subjective norm has been operationalized into two dimensions: injunctive norms and descriptive norms (Lapinski & Rimal, 2005). To the best of the researcher's knowledge, only one study can be traced to organic food purchase behavior (Arvola et al., 2008) that included both types of norms, measured by a two-item measurement (one item for each type) with a construct reliability of 0.71. For the purpose of dimensional reliability and specific dimensional data analysis, it is hereby proposed that multi-item measurement be adopted for each dimensions. Therefore, the items used by Arvola et al. (2008) would be extended by following the example of Ajzen (2002b), adopting and modifying into an eight-item scale. The first four items are intended to measure injunctive norms, whereas the rest four would measure descriptive norm. The fourth and the eighth item is reverse-coded, as shown in table 3.11. As always, the scale is anchored at 1=strongly disagree and 5=strongly disagree. The following table shows the adapted items.

Table 3.11  
*Subjective Norms (8 items)\**

Items
People who are important to me, would think that I should buy organic food instead of conventional food.
People who are important to me, would approve my decision to buy organic food.
I feel social pressure to buy organic foods.
People who are important to me would be annoyed if I buy organic foods. (R)
People who are important to me, would buy organic foods when they shop for foods.
People who are important to me, would prefer organic foods for themselves.
People who are important to me would prefer organic food when they go for food shopping.
Even though people important to me recommend organic foods, they will not buy organic foods when they go for food shopping. (R)

\*First four items represent Injunctive Norms, the rest represents Descriptive norms.  
 Source: Adapted from Arvola et al. (2008), Ajzen (2002b)

Perceived behavioral control is operationalized by measuring two definitional elements: ease of performance and control over the performance (Ajzen, 2002a). The direct measure of perceived behavioral control is adapted from Courneya, Bobick, and Schinke (1999) where the 3-item measurement showed a construct reliability of 0.81. The following tables shows the measurement items, to be anchored at 1=strongly disagree and 5=strongly disagree.

Table 3.12  
*Perceived Behavioral Control (6 items)*

<b>Items</b>
It is entirely up to me whether I want to buy organic food or not
I have full control on my decision whether I want to buy organic food or not
I am independent to decide whether I would buy organic food or not
If I wanted to, I could easily buy organic foods
It is extremely easy for me to buy organic foods
Buying organic food is not difficult for me at all

Source: Adapted from Courneya, Bobick, and Schinke (1999), Ajzen (2002a)

The demographic data will include gender, age, monthly income, education and number of children. Since past studies indicated that demographic factors may have impact on organic food purchase intention and behavior, such factors were carefully chosen in order to develop a profile and test the relationships as noted in earlier studies. For example, some researchers mentioned important demographic variables like gender (Lockie & Lyons, 2002), age (Magnusson, Arvola, Hursti, Åberg, & Sjöden, 2001), income (Gracia & Magistris, 2007; Yin et al., 2010), education (Paul & Rana, 2012) and having young children (Hughner et al., 2007; Pearson, Henryks, & Jones, 2010) that were found significantly associated with organic food purchasers. Most of these demographic variables were measured using tentative data ranges under Bangladesh context. The scale used for defining young children is adopted from Van Loo et al. (2013), where the author defined children as individuals aged below 15, which may also be applicable under Bangladesh context. The summary of proposed measurements is provided in the following table.

Table 3.13  
*Summary of the measurement characteristics*

<b>Variables</b>	<b>Scale</b>	<b>Sources</b>
Purchase Behavior	Likert scale 1-5	Chan (2001), Uçar and Özçelik (2012) and Voona et al. (2011)
Purchase Intention	Likert scale 1-5	Chan (2001), Tseng and Tsai (2011), Ramayah, Lee, and Mohamad (2010)
Habit	Likert scale 1-5	Verplanken and Orbell (2003), de Bruijn, Gardner, van Osch, and Sniehotta (2013)
Trust	Likert scale 1-5	Voona et al. (2011), Tung et al. (2012)
Situational Factors	Likert scale 1-5	Nicholls et al. (1997), Gaspar de Carvalho et al. (2010), Soyez (2012)
Attitude		
- Cognitive attitude	Likert scale 1-5	Arvola et al. (2008), Crites et al. (1994)
- Affective attitude	Likert scale 1-5	Arvola et al. (2008), Crites et al. (1994)
- Health attitude	Likert scale 1-5	Chen (2009), Tarkiainen and Sundqvist (2005), Magnusson et al. (2003), Schifferstein and Ophuis (1998)
- Environmental attitude	Likert scale 1-5	Magnusson et al. (2003)
Subjective Norm (injunctive and descriptive norms)	Likert scale 1-5	Arvola et al. (2008), Ajzen (2002b)
Perceived behavioral control	Likert scale 1-5	Courneya, Bobick, & Schinke (1999), Ajzen (2002a)
Demographic information (gender, age, income, education, no. of children)	Nominal	Self-constructed measure

### 3.5 Population and Sample

The buyers of organic foods in Bangladesh will be the population of the study who are also aware of organic foods. The unit of analysis will be individual customers who are aware of and intend to buy or actually buy organic foods from various outlets. Based on the filtering technique during the data collection sessions, “Non-aware” respondents are not included in the definition of population. In addition, since behavior is the ultimate measurement (as dependent variable), those who are aware but non-buyer were also excluded.

Individual buyers are the most appropriate subject of study because they are expected to be the decision makers on the spot. Foods are considered daily necessity items and purchase decisions are made as and when necessary. Individual buyers would bring with them the sets of psychological characteristics that propel them to buy foods they want. The researcher may have the opportunity to analyze individual purchase intention and other related traits as important determinants of individual’s purchase behavior once these individual buyers can be investigated.

However, the lack of sampling frame referring to the population of organic food buyers would require that the target population be estimated based on certain criteria. In order to estimate the size of the target populations, we may find out the total population of Dhaka metropolitan city (since 95% of organic retailers are here), and then narrow down to our target population estimation by certain criteria, like income. Currently, the population of Dhaka metropolitan area is estimated about 9.25 million

The sample size may be chosen based on various criteria. Different scholars indicated different rules of thumb for choosing the appropriate sample size. For example, Green

(1991) suggested that sample size might be higher than  $50+8m$  for testing the multiple correlation and higher than  $104+m$  for testing individual predictor variables, where  $m$  is the number of independent variables. For testing the both, larger sample size should be employed. Thus, according to this rule of thumb, the sample size for the current study should be more than 111 (assuming 7 independent variables). When the number of predictor variables is five or less, Harris (1975) recommended that the number of respondents should surpass the number of predictor variables by at least 50 (i.e., total number of respondents = the number of independent variables + 50). However, regression analysis employing six or more predictor variables, a minimum of 10 respondents per predictor is advised. This recommendation is almost similar to Roscoe (1975) that the minimum sample size may be arrived at by multiplying 10 with the number of variables (not the number of independent variables only, but total number of variables) under study. The current study consists of eight variables in total. Therefore, the rule of thumb yields a minimum sample size of 80 respondents. However, Harris (1975) also mentioned that, provided the situation permits, a researcher might be in a better position to identify a small effect size with about 30 respondents per predictor variable. Thus, according to this rule of thumb, the minimum sample size may stand at 210. Such a sample size may get close to recommendations by Tabachnick (1996) who maintained that 300 is a good sample size for factor analysis.

Researchers are often interested in increasing the power of their quantitative analysis. Power refers to the probability that null hypothesis is rejected when it is false. Increasing sample size is considered as a way to increase power (VanVoorhis & Morgan, 2007). Therefore, it seems appropriate that recommendation for larger sample size be chosen. After considering all the rules of thumbs as discussed above,

it appears that the minimum sample size of 300 is achievable by meeting the current resource constraints, although larger sample would be collected. Since data will be collected through on-the-spot fillable questionnaires, the non-response errors may quickly be detected and eliminated from the analysis. Therefore, considering practical limitations of non-response and other errors, it would be more appropriate to state that the current study will strive to achieve the sample size after considering those practical limitations.

### **3.6 Data Collection**

The data were collected through a pre-designed self-administered and self-report questionnaire. The self-report questionnaire (Appendix A, B) is preceded by a cover letter assuring confidentiality and anonymity of respondents' information, as it was reported that respondents' sensitivity to providing personal information may result in non-response or other problems in gathering accurate response (Schrijver, 2012). Data were collected face-to-face, in person, requesting respondents to fill-in on the spot. Guidance and explanation were provided if any particular respondent felt that they needed clarification on any question. The respondents were free to answer or not to answer any particular question, with the option of withdrawing from the survey anytime during the filling-in process.

Another important issue about data collection is how to select the target sampling units. In marketing, the non-availability of complete sampling frame is oftentimes a problem. Since it is practically challenging to procure a complete sampling frame of individual organic food buyers, the sampling challenge may be met in multiple stages, as suggested by Beri (2013). In the first stage, a complete list of organic food stores



are identified through various sources (Appendix C). This would be the initial sampling frame from where a random selection of stores may be identified.

The next stage would call for surveying organic buyers inside those selected stores through mall-intercept approach in a systematic random method. In fact, mall-intercept surveys are widely used in the field of consumer behavior studies, which have also been observed in the case of studying organic food purchase behavior in the past (Ahmad & Juhdi, 2010; Thøgersen & Zhou, 2012). Therefore, such multi-stage random sampling may be employed to retain the generalizable characteristics of the study.

Referring back to the list of stores, the Appendix C shows that there are over 100 stores (including their branches outside the Capital) that sell organic foods in various parts of Bangladesh. The stores are mostly concentrated in Dhaka, the Capital city, where almost 95% of them are located. Therefore, stores located only in Dhaka and adjacent areas will be surveyed for the current study. Although a minimum sample size of 300 is desirable, it appears appropriate to target an estimated sample size of 500. It may be feasible to randomly select 40 of these stores as listed, and then choose required number of individual samples out of these stores.

Therefore, the first stage of selecting 40 stores was based on simple random selection from the list of stores as would be picked up by generating random numbers in statistical software: SPSS (Statistical Package for the Social Sciences), version 22. For the purpose, serial numbers were provided for each of these 110 stores and 40 stores were picked up at random at the first stage. Since our primary unit of analysis is not stores, but individual buyers, therefore, another stage of sample selection needs to be completed.

Since the exact population of organic buyers are not available, it may be recommended that an estimated population size of probable customer groups may be identified. For example, In order to reach a sample size of 500 or more, the target sample size from each store would be at least 12 or more. The targeted respondents would be selected based on systematic random method. The ultimate objective is to ensure an acceptable degree of randomness in the sampling process so that the generalizability characteristics of the study can be maintained. As already noted, since the stores are highly concentrated in Dhaka and adjacent areas, only stores in Dhaka were surveyed.

Consequently, in order to ensure randomness in the sample selection, consumers visiting those 40 stores were sampled based on systematic random survey. For example, while visiting a store, the available customer on the spot was surveyed first based on mall-intercept technique. This process was continued until the desired number of samples were gathered from targeted stores.

### **3.7 Minimizing Nonresponse Bias**

Non-response bias refers to the likely difference in answers provided by respondents who agreed to provide information in a survey, with the possible answers that could have been from those whom could not be surveyed or did not agree to participate in a survey (Armstrong & Overton, 1977). Therefore, a significant difference between the answers between these two groups could severely jeopardize the generalizability and representativeness of research findings (de Winter et al., 2005). This is particularly of great concern in postal mail and internet surveys, as many respondents may not choose to respond to researchers' request to fill-in the survey instrument (Doyle, 2005). Therefore, past studies recommend that rather than post-hoc analysis and

treatment of non-response bias after the data have already been collected, it is suggested that all possible measure be taken before the data collection stage to reduce non-response bias (Leeuw & Huisman, 2003).

Therefore, the current study primarily adopted four broad measures to reduce non-response bias. They are, ensuring clarity of questionnaire, assuring respondents of anonymity, collecting data in a face-to-face mode, and offering incentive for completing the questionnaire. Past researchers clearly indicated that instrument clarity as well as survey design assuring anonymity might play a substantial role in motivating respondents to complete survey questionnaires (Krosnick, Presser, Fealing, Ruggles, & Vannette, 2012). Moreover, according to Doyle (2005), face-to-face data collection with structured questionnaire usually result in as high response rate as 90% or more, since people often find it difficult to refuse such request from a surveyor who is physically present and politely requesting such help from a potential respondent. Some researchers also found that incentives like small gifts or other giveaways may increase response rates and accuracy (Simmons & Wilmot, 2004). Past researchers went further and explained that such increase in response rate, accuracy, and respondents' interest are not unusual because respondents would feel guilty at having a gift and then not responding truthfully to researchers (Burns & Bush, 2000). Hence, it is expected that the research design, along with these broad measures, would be able to control nonresponse bias for the current study.

### **3.8 Pilot Study**

The survey instrument was developed from well-established measurements used in past studies. However, it is recommended to evaluate through scientific scrutiny in terms of validity and reliability (van Teijlingen & Hundley, 1998). Before

commencing the pilot study, the instrument was first translated into local language, Bangla, with the help of a language expert. The process was implemented by starting with two translated versions of the same instrument by two independent translators who were proficient both in English and Bangla. Such a multiple translation of the same instrument was suggested by Beaton, Bombardier, Guillemin and Ferraz (2000).

When both the translated versions were available, the two translators and a recording individual (the researcher himself) meet together to synthesize the results of the translations. Starting from the original questionnaire as well as the translated versions from the first translator (Trans1) and the second translator (Trans2), a synthesis of these versions was first arranged (producing one common translation). A brief note was maintained documenting the deliberation process. New issues emerged in terms of semantic and cultural adaptation, and these issues were discussed and solved. At the end of the deliberation, a single translated instrument emerged out of this synthesizing process. This synthesized version went through further adaptation process in the next stage.

In the second stage, starting from the synthesized version of the questionnaire, a translator then translates the instrument back into the original language, English. This process is required to ensure validity so that the translated version of the instrument would be reflecting the same item content as they were in the original version of the instrument. Oftentimes, this step magnifies unclear wording in the translations. According to Beaton et al. (2000), agreement between the back-translated version and the original version does not necessarily ensure a satisfactory forward translation, it only ensures consistency in translation. In fact, back translation is only one type of inspection of validity, focusing on major inconsistencies or conceptual deviations in

the translation. The back-translated instrument was identified with some minor issues, and the synthesized version was updated accordingly.

The translated and synthesized instrument was put to pre-test for language clarity and conceptual consistency. The first pre-test was conducted among 8 individuals, who were personally identified as regular organic food buyers. As suggested by Czaja (1998), pretesting is not only about checking for linguistic clarity or conceptual consistency, but it goes beyond these common understanding. Pretesting can help a researcher in orienting him/herself with respondents' degree of comprehension, burden, and interest, as well as understanding the precautions that researchers needs to take to ease his/her interviewing tasks. Thus pretesting should also address other questionnaire issues. For example, do the sections of the questionnaire and the questions within each section have a logical flow? Do the question skip patterns make sense and are they correct? It is important to warrant that the correct respondents are chosen to answer and follow up questions, and ensure that non-target respondents are not being asked inapplicable questions.

Therefore, the first stage of pretesting was conducted keeping these objectives in mind. Respondents were also asked to share their opinion on question wording, provide suggestions for any missing information that should have been collected in the instrument, comment on the clarity of language and indicate the ease of answering each question. Particular attention was given to reverse-coded questions and respondents were probed whether such questions posed as deterrents to a natural flow of answering as well as conferred any difficulty in interpreting them. This precaution has been particularly important for researchers since some past researchers emphatically advised against using reverse coded items to measure the same construct not because respondents were setting a general trend of answering, but because

positively and negatively worded items may actually measure different constructs (Weems, Onwuegbuzie, & Lustig, 2003). However, other researchers opined that reverse coded questions may actually measure the same construct, therefore, there should not be any problem applying positive and negative worded questions to measure a particular construct (Bergstrom & Lunz, 1998). Based on these opposing views, both the negatively and positively worded questions were kept in the questionnaire to construct the same measure. However, during pre-testing of the instrument, these questions were probed with due caution whether any deterring indication is observed in terms of lack of linguistic clarity or difficulty in conceptual understanding.

At this stage, some linguistic issues appeared, particularly for the construct *affective attitude*. Suggestions were noted and consulted with translators before modifying the questionnaire. Due to appearance of clarity issues at this stage, the second round of pre-testing was conducted with the modified questionnaire, with a different set of respondents. Fifteen respondents were conveniently selected at this stage and their responses were recorded. Respondents were also probed for clarity and ease of answering the instrument. Responses were recorded with ease and no major linguistic or conceptual issues emerged. Based on verbal feedback from respondents, a few of the words in some items were changed for improving the clarity. The range of time of completing the questionnaire went around 12 to 16 minutes.

Therefore, the finalized version of the translated and pre-tested questionnaire was self-administered for the pilot study. The pilot study was conducted in a mini-scale version of the actual study, in two conveniently selected stores. Information was collected from a total of 48 respondents. Convenience sampling was followed as it is acceptable that pilot studies might be conducted on a non-random basis (Beri, 2013).

As a convention in marketing research, conducting pilot studies is a widely accepted way of finding construct reliability and avoiding pitfalls in the research design. A well-administered pilot study usually provides a clear list of aims and objectives within a formal research framework that is expected to enhance methodological rigor and warrant the scientific validity of the study (Lancaster, Dodd, & Williamson, 2004). Therefore, in addition to two rounds of pre-testing, it may be necessary that during the pilot study, the researcher probe and provide for clarification in case there are problems in understanding the wording and observe the level of difficulty on part of the respondents to fill-in the questionnaire.

As already mentioned, a convenience sampling with a sample size of 48 of potential respondents was taken for the purpose of pilot study. The pilot study data were used to test the reliability of each measurement instrument by checking the score for acceptable level of internal consistency. No items or wordings of measurements were modified as no more deterring information was revealed during the pilot study. The results of internal consistency measures are noted in Chapter 4.

### **3.9 Data Analysis**

Before data analysis can be done, data preparation would be required by coding the questionnaire and entering into statistical program. At the beginning, SPSS (version 22) may be used for data preparation. Data screening would be necessary to check missing values, outliers, normality and heteroskedasticity. Data visualization may be performed to detect problems as well. Then descriptive statistics would be generated from the analyzable data. Data needs to be prepared and saved in an appropriate format (csv format) for further analysis through SmartPLS (version 3).

### 3.9.1 Common Method Bias

Common Method Bias, often referred to as Common Method Variance (CMV), refers to variance that is characteristic to the measurement method rather than to the constructs the measures represent (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This bias creates a false internal consistency, that is, a certain degree of visible correlations among variables originated from their common source. However, literature survey reveals differences in scholarly opinion on CMV. According to Campbell (1982), in the case where exists no evidence that construct validity is obtained for the questionnaire measure or no variable that is assessed independently of the questionnaire, there are reasons for a reviewer to be biased against this investigation and understand that such study contributes very little to the existing body of knowledge. However, other scholars disagreed with this opinion. Some researchers posited that the problem of Common Method Bias may have been overrated by the research community (Crampton & Wagner, 1994; Lindell & Whitney, 2001). In an extreme view, Spector (2006) went further and called this an urban legend! Overall, it appears that majority of scholars tend to agree with Podsakoff et al. (2003) who opined based on an exhaustive review of previous researches that common method variance is oftentimes a problem and researchers should do whatever they can to control such bias.

Specifically for PLS-SEM path modeling, such bias requires special attention. Irrespective of whether researchers are assessing the nomological validity of constructs with formative or reflective manifest variables, the process of evaluating significance calls for estimating the latent constructs (so that measurement-error is controlled) and thereafter testing whether evaluations of their relationships with



hypothesized antecedents, correlates, and consequences are significantly distinctive from zero, along with the anticipated sign (Mackenzie, Podsakoff, & Podsakoff, 2011). According to DeVellis (2012), Common Method Bias should be checked before running such assessment.

Based on previous studies, it appears that specific aspects of the research methodology would be pertinent in defining the probability and the extent of CMV. In general, there could be four possible sources of Common Method Bias: (a) the use of a common rater; (b) the way in which items appear to survey participants; (c) the context in which items on a questionnaire are positioned; and (d) the influence of context (i.e., time, place and media) used to measure the constructs (Podsakoff et al., 2003). In order to minimize CMV, two broad methods like *Ex-Ante* and *Ex-Post* approaches have been recommended by the aforementioned authors. The first approach calls for minimizing CMV by having careful research design even before the research is actually conducted. For example, CMV could be minimized by planning to collect measures for different constructs from different sources. However, as Podsakoff et al. (2003) noted, in case it might not be feasible to get data from different sources, another option is to obtain data at various points in time.

Another *Ex-Ante* precaution is focused on planning the way the questionnaire is designed and administered among respondents. Survey participants must be assured that their replies are anonymous and confidential; that there is no right or wrong answer; and that they should place their answers honestly. It was also observed that lack of language clarity, particularly ambiguity in meaning might result in increase of CMV. Thus more fact-based and easily assessable questions are thought to be less associated with Common Method Bias. As Podsakoff et al. (2003) indicated that these

measures would lower respondents' assessment uneasiness and make them less likely to direct their responses to be more socially projected, moderate, agreeable and consistent with how the researchers expect them to answer. In addition to these measures that appear to be the part of a common process of developing a good research design, attention might also be given to systematically evaluate the construction of items so that vague terms are not adopted. Consequently, the questionnaire as a whole and the individual items thereof should be worded as accurately and as possible (Lindell & Whitney, 2001; Podsakoff et al., 2003).

The other approach, *Ex-Post* statistical method, attempts to statistically determine whether CMV exists in the existing data structure. Evidently, the "Ex-Post" name originated from the test's characteristics that CMV is tested after data have already been collected. The statistical method primarily depends on a modified application of exploratory factor analysis. The most common and popular test for evaluating the presence of CMV is Harman's single-factor test. The Herman's single-factor test attempts to evaluate that the concerned investigation is not dominantly influenced by common method bias. This method loads all items from all the constructs into an exploratory factor analysis to examine whether one single factor would occur. In other words, it checks if one common factor would account for a bulk of the covariance between the measures. Usually, the rule of thumb is if the attempted one factor solution contains less than 50% of the variance of the data set, it may be thought that common method variance is not a prevalent issue for the research concerned. For the current study, the Herman's single-factor test is used to evaluate whether Common Method Variance would be a matter of concern for the study.

### **3.9.2 Descriptive Statistics**

Descriptive statistics are primarily focused on demographic characteristics of respondents. It reports age, gender, income and educational background of respondents. This may aid in further scrutiny in later stage of investigating the research findings.

### **3.9.3 Inferential Analysis**

The relational design of the study would result in data that could be analyzed by using various statistical techniques. The random nature of sampling technique, along with multivariate nature of multi-level data with latent constructs may warrant the use of Structural Equation Modeling or SEM (Bollen, 1989). The section is divided into three areas of discussion. The first part justifies the use of SEM in contrast to using mere regression or correlation analysis. Subsequently, the reasoning behind using partial least-square structural equation modeling (PLS-SEM) in particular as compared with covariance-based structural equation modeling (CB-SEM) is also discussed. The second part talks about measurement model estimation in PLS-SEM; and the third part talks about structural model estimation.

#### **3.9.3.1 Why SEM and PLS-SEM**

This section would discuss the reasoning for using SEM, and PLS-SEM in particular. Therefore, the discussion is divided into two major streams: one discussing the justification of using SEM, and the other elaborating on why PLS-SEM may be more appropriate as a modeling method.

In an over-simplified view, SEM may be seen as a –simultaneous” combination of path modeling, factor analysis and multivariate regression in an integrated way. Path analysis is concerned with predictive ordering of measured variables, whereas factor analysis is concerned with defining a valid latent construct, and multivariate regression shows the relational nature and magnitude of the same. According to Hoyle (1995), SEM is a comprehensive statistical method for testing hypotheses about relations among expressed (also called manifest) and latent variables. Similarly, Kline (2011) mentioned about two prime objectives of SEM: to explain the patterns of correlation among a set of variables, and to elaborate and explain as much of their variance as possible with the model specified.

However, Garson (2009) slightly disagreed on this technique’s emphasis on explanation of relationships. He posited that the central emphasis of the technique is on prediction rather than on explanation, and therefore it requires no well-understood relationships between the dependent and independent variables. It appears that no matter where the central focus of the technique is at, SEM could be a powerful tool for data analysis. The following discussion briefly shows the advantage of SEM over traditional statistical analysis. While traditional methods like Regression still can be used for the current study, employing SEM might have several advantages that should be considered while choosing the analysis technique (Suhr, 2006).

First, SEM has been a flexible analysis technique, and PLS-SEM in particular. SEM does not impose any default model and places few restrictions or limitations on what types of relations can be specified for the study. The technique requires that researchers formulate or support hypothesis based on theory or prior research.

Second, while traditional techniques may analyze only measured variables, it is possible that SEM may include both the observed (measured) and unobserved or latent constructs.

Third, traditional analysis gives straightforward tests for measuring significance in order to determine relationships between variables, group differences, or the degree of variance explained. On the other hand, SEM does not provide straightforward tests to determine model fit. Rather it provides a strategy to examine multiple tests for evaluating model fit. Such tests are Comparative Fit Index (CFI), Chi-square, Root Mean Squared Error of Approximation (RMSEA), etc. Due to such flexibility, it is possible to view model-fit from various angles and arrive at a valid and reasoned conclusion.

Fourth, multi-collinearity can well be handled by SEM. Multi-collinearity is well-handled because unobserved variables characterize distinct latent constructs.

Fifth, the graphical presentation provides a powerful way of signifying complex relationships in SEM. The set of equations, usually expressed as a pictorial characterization of a model, are solved simultaneously to test model fit and assess parameters. Therefore, SEM would be highly useful and appropriate for analyzing data of the current study.

There are many computer programs that can be used for SEM. There are two popular alternative computer programs for SEM analysis, based on two broad approaches to structural equation modeling. One is SPSS-AMOS that follows covariance-based SEM (CB-SEM) and the other one is SmartPLS that follows partial least-square SEM

(PLS-SEM). The current study used SmartPLS (version 3) for data analysis (Ringle, Wende, & Becker, 2015).

While comparing these two alternative approaches, the SmartPLS documentation warned that the comparison should not be taken as CB-SEM vs PLS-SEM, as these approaches are more of complementary than competitive (Ringle et al., 2015). As for example, Hair, Ringle and Sarstedt (2011) mentioned about two critical issues in determining whether PLS-SEM would be appropriate instead of CB-SEM. The first one says, if the objective is to predict key target constructs or to identify the key driver constructs, researchers may choose PLS-SEM. In addition, PLS-SEM may also be used if the investigation is of exploratory type or an extension of an already existing structural theory. Hence, evaluating the current research framework that was developed based on an existing theory, the current study may warrant the use of PLS-SEM. As the advantages of SEM are already discussed, some additional advantages of PLS-SEM are briefly discussed here in order to justify why PLS-SEM would be appropriate for the current study.

There are certain core advantages of using PLS algorithm in SEM analysis. The most important are: it does not require multivariate normality assumption like most other SEM tools; better coefficient estimates can be obtained with fewer data sets compared to other techniques; and a set of flexible relational hypothesis can be tested including a mix of reflective and formative models in the same specified model (Hair Jr, Hult, Ringle, & Sarstedt, 2013). However, SmartPLS is not meant for descriptive reporting, therefore, IBM-SPSS may also be used for such reporting purposes. In addition to descriptive reports, IBM-SPSS may also be used for data preparation for SmartPLS, data screening and treating missing values.

In addition to the foregoing analysis elaborating the justification of using SEM, the following section elaborates why PLS-SEM is chosen over CB-SEM.

First, business research is increasing in complexity as researchers are attempting to model the competitive and complex reality of business issues (Osterwalder, 2004). In this context, the emergence and increasing use of structural equation modeling (SEM) has brought a new era of sophistication to quantitative research through its ability to offer flexible options to address a number of empirical and methodological issues (Hair et al., 2011). As already noted, SEM allows the simultaneous modeling of associations among multiple independent and dependent variables. It is widely applied for its inherent adaptability in examining a theoretical model with multiple independent and dependent variables in view of empirical data.

Second, PLS path modeling or component-based SEM can be viewed as the outcome of the original development by (Wold, 1966), utilizing least-squares for principal components and canonical correlations. Subsequent studies have utilized and extended Wold's previous work in social science and business research, highlighting the methodological and practical implications of this technique (Chin, 1998; Wilson & Henseler, 2007). PLS is a causal modeling approach that maximizes the explained variance of endogenous constructs. From philosophical point of view, component-based SEM is anchored on positivist epistemological domain by examining theories empirically (Urbach & Ahlemann, 2010). Therefore, with a-priori modeled relationships, it identifies and tests the causal link through deductive analysis. For the current study, partial least-square path modeling is appropriate since the objective is to develop and examine a causal model through explanation and prediction (W. W. Chin & Dibbern, 2010).

Third, PLS can effectively handle a small sample size, a construct with fewer items and increased model complexity (Vinzi, Chin, Henseler, & Wang, 2010), although a larger sample size would increase the robustness of estimation (Marcoulides & Saunders, 2006). This advantage is particularly useful when pilot studies conducted in a small scale may tentatively be examined with path analysis.

Fourth, PLS-SEM is a soft modeling approach, a technique that yields component-based factor loadings and structural relationships just like CB-SEM without the pre-condition of distribution-related assumptions like multivariate normality (Hair et al., 2011). Because of these flexible assumptions of research data, partial least-square structural equation modeling (PLS-SEM) yields robust estimations for complex models with non-normal data.

Fifth, according to Chin and Newsted (1999), CB-SEM usually results in positively-biased model fit as the degree of freedom increases with the increasing number of indicators and latent variables in a large hierarchical model. In another investigation, Chin, Peterson, and Brown (2008) observed that many past studies based on CB-SEM appeared to study simpler theoretical frameworks which posed a practical implication towards the development of complex model in multivariate analysis. Although this is not a problem in CB-SEM itself, it appears that complex modeling practices are more popular among researchers in PLS-SEM approach (S. Akter, Ambra, & Ray, 2011). In line with this convention, it is proposed that component-based structural equation modeling be used in order to estimate the complex and multi-order consumer behavior model for the current study.

The scholarly urge to test complex models lies in the need for modeling the reality as closely as possible. As Chin and Dibbern (2010) posited that complex models should



be formulated and validated in search of measuring reality adequately. By the term complex models, they indicated that a complex model could be a larger model with many latent variables and indicators-- for example, a model with 10 or more constructs and 50 or more items may be defined as a complex model. Based in this indication, the current study may be described as having a complex model since the proposed model contains a total of 16 constructs (including two moderators) and 60 indicators. Consequently, the current model may be tested by using PLS-SEM since past researchers recommended that PLS path modeling is more appropriate for practical applications and offers advantages of using in a complex set-up (Fornell & Bookstein, 1982; Hulland, 1999).

Sixth, using CB-SEM may result in difficulties while estimating such larger models partly due to the algorithmic nature requiring inversion of matrices (Chin & Dibbern, 2010). Therefore, PLS-SEM could be employed to estimate a complex model because it would lower the uncertainty of improper solution. As an added advantage, PLS-SEM yields robust estimations due to its flexible assumptions in any exploratory or confirmatory complex setting (Lohmöller, 1989).

Seventh, PLS-SEM is suitable for the current study because it may provide more accurate estimates of moderating effects by accounting for the measurement error that attenuates the estimated relationships and improves the validation of theories (Chin, Marcolin, & Newstead, 2003; Henseler & Fassott, 2010). The current study tests two moderators simultaneously, thus PLS-SEM can easily account for such moderating effect in the complex model.

Therefore, it appears that PLS-SEM is appropriate for the current study.

In the process of data analysis by using PLS-SEM, a number of statistical procedures need to be observed. According to the recommendation by Anderson and Gerbing (1988), data analysis should be done in a two-step approach: the first step involves the analysis of the measurement model, and the second step entails testing the structural relationships between latent constructs. Based on this conceptualization, a graphical model can be viewed as composed of two sub-models: Inner Model and Outer Model. The inner model is focused on showing the relationships between unobserved or latent variables (structural model). However, inner model cannot be tested unless outer model is specified. The outer model stipulates the associations between a latent variable and its observed or expressed (often called “manifest”) variables. These manifest variables are also known as indicators to latent constructs.

The outer models can further be conceptualized as either Reflective model or Formative models, as already explained in the section 3.4.3, titled *Construct Measurement*. The reflective model exhibits causative relationships from the latent variable to the expressed variables (arrows pointing from latent construct to expressed variables). On the other hand, the formative model characterizes causative relationships from the expressed variables to the latent or unobserved variable (arrows pointing to latent constructs from expressed variables). Thus, the formative model implies that a latent variable is defined through a mix of its expressed (manifest) variables (Jörg Henseler, Ringle, & Sinkovics, 2009). It means that, in the case of Formative measurement model, an increase in the latent variable is actually formed by an increase in any of the expressed variables, whereas in the Reflective model, an increase in the latent variable causes the increase of all the expressed variables.

As already noted, the current study follows all reflective measurement models while defining the latent constructs, since it is expected that an individual with a positive attitude toward organic food or favorable norms towards purchase of organic foods is most likely to put upper level of scores on all the expressed variables (indicators) of attitude or norms focusing on organic food. Thus, it may be appropriate to assume that all the expressed variables indicate the same uni-dimensional construct. The same assumption is held for all other latent variables of the current study, which is usually the case for reflective constructs.

The following sections deals with further analysis issues related to the study.

### **3.9.3.2 Measurement Model**

Measurement model or outer model is calculated to check for construct validity and reliability. Reliability would be tested by using the composite reliability (CR) values. The convergent validity of the scales may be assessed by two criteria as recommended by Fornell and Larcker (1981). First, all indicator loadings should be significant and exceed the value of 0.7, and second, average variance extracted (AVE) should exceed the value of 0.50. However, some researchers proposed more lenient criteria like cut-off outer loading of 0.60 (Birkinshaw, Morrison, & Hulland, 1995). Particularly in social science and business research, low outer loadings have been evident. According to some scholars, lower outer loadings can be deleted when such deletion may result in increase in composite reliability (Hair, Hult, & Ringle, 2013). For the current study, the cut-off criteria of 0.60 as used by Birkinshaw et al., (1995) would be applied. Any value below that point would be considered for deletion if the deletion results in increase in composite reliability and AVE.

Discriminant validity may be tested in SmartPLS by employing the following two tests. First, a scrutiny of cross-factor loadings would reveal the discriminant validity, if the loading of each measurement item on its designated latent variable is larger than its loading on any other constructs (Chin, 1998). This is similar to classic factor analysis. Second, according to Fornell and Larcker (1981), the square root of the Average Variance Extracted (AVE) from the construct should be higher than the correlations shared between the construct and other constructs in the model.

Reliability analysis may further be carried out by checking for Cronbach's alpha value. Cronbach alpha refers to how well the items in a set are positively correlated to one another (Sekaran & Bougie, 2010). The authors indicated that reliability less than .60 is to be considered poor, values in the .70 range are acceptable and values over .80 are good. Some authors considered lower Cronbach alpha value like .70 or above as sufficient for analysis (Hair, 2006; Nunnally, 1978).

### **3.9.3.3 Structural Model**

Once reliability measures are investigated and validated, the model results, primarily path coefficients must be examined in order to check the magnitude and validity of the relationships between the latent variables.

In SmartPLS, significance is calculated through a bootstrapping procedure. The paths between the latent variables may be checked for significance tests, and whether the signs of coefficients are in the predicted direction (negative or positive). Besides path coefficients and significance values, PLS also yields associated  $R^2$  measures for the latent variables. This measure indicates how much variance a set of exogenous variables explicates for its relevant endogenous variables. An exogenous variable is

defined as one that is modeled in a way so that no other variable (in the model) is projected to confer any change to it. On the other hand, an endogenous variable is defined as the one that is modeled in a way so that at least one other variable (in the model) influences it. In other terms, these variables are also known as independent and dependent variables respectively.

In addition to measuring  $R^2$ , the researcher may also study other measures like  $f^2$  effect size. The  $f^2$  effect size measure is another expression for the  $R^2$  change-effect. The  $f^2$  coefficient is obtained by this formula:  $(R^2_{\text{original}} - R^2_{\text{omitted}})/(1-R^2_{\text{original}})$ . The denominator in this equation is unexplained part of total possible effect. The  $f^2$  formula expresses how large a proportion of unexplained variance is accounted for by  $R^2$  changes (Hair, Hult, Ringle, & Sarstedt, 2014). Based on Cohen (1988), values of 0.02, 0.15 and 0.35 denote a small, medium and substantial  $f^2$  effect size.

#### **3.9.4 Power Analysis and Quality Criteria**

Post-hoc Power analysis could be a method for validating the empirical results of PLS path analysis for complex models. Power is expressed as  $(1-\beta)$  that indicates the probability of having a valid result. It is arrived at by calculating the probability of rejecting the null hypothesis ( $H_0$ ) when the alternative is true (Cohen, 1988).

Three parameters are necessary to calculate the statistical power. These parameters are-- the significance level ( $\alpha$ ), the sample size and the effect size or observed  $R^2$ . With the advent of online post-hoc power calculator (Soper, 2016a), the power analysis may now easily be conducted. However, the question remains as to what the acceptable level of power of a study would be. According to Cohen (1988), the power of statistical tests should be at least 0.8 with a view to obtaining a substantive degree

of probability of getting significant output when the relationship is actually significant. Most researchers also seem to agree with this view. The current study would utilize online power analysis software provided by Soper (2016) in order to validate the statistical power of the PLS-SEM analysis.

In addition to power analysis, some predictive effect size may also be calculated as a measure of examining the predictive effect-strength of the model. The predictive relevance of outer model measurements may be examined by calculating Stone-Geisser  $Q^2$  effect-size in SmartPLS as well. This is another measure of fit of the PLS latent variable model. In Blindfolding output of SmartPLS, Stone-Geisser  $Q^2$  exhibits as  $(1 - SSE/SSO)$  in the *Construct Cross-validated Redundancy* results. That means, in each case a  $Q^2$  value is calculated as 1 minus the sum of squared error divided by the sum of squares of observed omitted values (in Blindfolding process in SmartPLS).

In view of the absence of global goodness of fit measure in SmartPLS, another viable alternative that has been proposed as a measure of fit is the Standardized Root Mean Square Residual (SRMR). This is an extent of approximate fit of the researcher's model that accounts for the difference between the observed correlation matrix and the model-implied correlation matrix. That means, the SRMR reveals the average magnitude of such differences, with lower SRMR referring to better model fit. As a matter of convention, a model is said to have good fit when SRMR is less than 0.08 (Hu & Bentler, 1999). Some authors have recommended a more lenient cut-off point like 0.10 (Henseler et al., 2014). Therefore, despite the lack of global goodness of fit measures, PLS-SEM model-fit can easily be measured with more than one available option.

In summary, it is apparent that component-based SEM (or PLS) may be used to examine the research model and efficiently analyze the data at hand. Based upon this deliberation, it may be clearly evident that component-based SEM could effectively handle the complexity in the research model in order to yield robust solutions for a reflective higher-order model, even when normality assumptions might be violated. This section also explained how to establish rigor in empirical study by using power analysis, predictive relevance and the newly implemented goodness-of-fit measures in SmartPLS. Therefore, PLS-SEM is well-suited for the current study.



## CHAPTER FOUR

### FINDINGS

This chapter elaborates the findings based on statistical analysis and interpretation. This part is divided into nine sections. The first section talks about pilot testing and results thereof. The second section talks about the main survey and reports descriptive statistics like demographic characteristics of the main sample and some data screening measures. The third section elaborates the PLS-SEM measurement model results and interprets the output. The fourth section explains the PLS-SEM structural model and provides statistical interpretation. The fifth section summarizes the results and tallies the findings in relation to key research questions of the study.

#### 4.1 Pilot Study Results

Pilot study is aimed at pre-examining the tentative sample of concern and evaluate measurement characteristics through scientific scrutiny in terms of validity and reliability (van Teijlingen & Hundley, 1998). Therefore, after two stages of pre-testing, the pilot study was conducted to examine respondents answer pattern, to confirm the reliability of the instruments, as well as reducing non-response errors through further clarity. The pilot study was conducted by taking 48 samples conveniently from two different locations, as most authors recommended a minimum of 30 samples for a pilot study (Johanson & Brooks, 2010). The range of time of completing the questionnaire went around 12 to 16 minutes. Some additional clarity in language was needed based on feedback from some respondents at this stage. Some minor modifications were made in the questionnaire in this regard.



The following table shows the reliability results of the questionnaire based on Cronbach alphas.

Table 4.1  
Reliability Coefficients of Multiple Variables in the Pilot Study (n=48)

Variables	No. of Items	Cronbach-alpha
Purchase Behavior	6	0.881
Purchase Intention	6	0.909
Habit	4	0.827
Situational Constraints	4	0.828
Trust	6	0.875
Health Attitude	5	0.729
Environmental Attitude	5	0.765
Cognitive Attitude	5	0.827
Affective Attitude	5	0.865
Injunctive Norm	4	0.740
Descriptive Norm	4	0.778
Perceived Behavioral Control	6	0.820

According to Hair (2006), Cronbach alpha value should be above 0.6 to indicate sufficient internal consistency. However, some scholars suggested 0.7 as an acceptable value for alpha (Nunnally & Bernstein, 1994). Since all the Cronbach alpha values in Table 4.1 meet this minimum criterion, the internal consistency may be assumed for questionnaire items.

#### 4.2 Non-Response Bias

As already noted in section 3.7, four broad measures were adopted to minimize the nonresponse bias. Measures were taken to ensure clarity of questionnaire, to assure respondents of their anonymity, to gather data in a face-to-face mode, and to offer a small gift for completing the questionnaire. However, in spite of taking all

precautionary measure to control nonresponse bias, some degree of nonresponse was observed since some potential respondents either refused to participate in the survey, or did not fill-in the questionnaire completely. In fact, this is not unusual for any survey. For example, after implementing all those preventive measures, the response rate for the current study is estimated at 87.4%, based on the calculation that out of a total of 495 people approached, 433 agreed to participate in the survey while 62 refused to do so. However, based on usable response, the rate would be about 84%. Based on the indication by Doyle (2005), the response rate still appears to be lower than what literature says about usual response rate in a face-to-face survey design. It is indicated that face-to-face data collection with structured questionnaire usually result in much higher response rate than telephone or mail surveys, as the response rate may easily go well over 90% (Doyle, 2005). It is expected because people often find it hard to refuse such appeal from a researcher who is personally present and respectfully requesting such help from a potential respondent. Past studies also found that gifts for completing survey questionnaire would enhance answering rates and precision (Simmons & Wilmot, 2004). In line with this conclusion, some researchers posited that the increase in response rate and accuracy are expected because respondents would feel guilty at having a gift and then not answering truthfully to researchers (Burns & Bush, 2000). However, looking at the overall rate of completed questionnaires, it may be concluded that the current study may contain sufficient amount of data to conduct a meaningful analysis.

At this point, an important note should be made regarding the difference between item nonresponse and unit nonresponse. The first one refers to missing response(s) in a questionnaire along with other valid responses of other questions (items) in the

instrument. The second one refers to questionnaires where the entire unit is missing, i.e., the respondent refused to participate in the survey at all. For cases where entire units are absent (non-participation), no test or correction for bias is possible without having further information about the targeted respondents who did not participate in the initial survey (Berg, 2005). In contrast, it is still possible to analyze non-response bias if item non-response is observed (i.e., cases with missing values), since alternative statistical techniques are available.

One of the most popular methods of estimating non-response bias is to compare the early responders with late responders, taking the late responders as a proxy for non-responders as suggested by Armstrong and Overton (1977). However, unlike mail or internet surveys, it is not possible to assess early or late responders in the current survey, because data collection was conducted anonymously in a face-to-face situation. Therefore, the current study would follow another alternative approach proposed by Armstrong and Overton (1977). They recommended that subjective measures like comparison of demographic profile of respondents can be conducted to assess whether both the groups belong to the same group of respondents or not. For example, if respondents with missing responses may be classified in a group as a proxy for non-respondents as additional data were solicited from these respondents after on-the-spot identification and screening, their demographic profile might be compared with those respondents who completely filled-in the survey instrument in order to test the bias. The following table shows the Levene's test for equality of variances and t-tests for equality of means between these two groups.

Evaluation of Levene's test and t-test results show that all the tests are insignificant. It means that all the null hypothesis of equal variances and equal means may not be

rejected. Therefore, it may be assumed that respondents and non-respondents are not from different groups, eliminating the possibility of bias that was likely from non-response.

Table 4.2  
*Independent Samples Test*

Demographic Factors	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig*(p)	t	df	Sig* (2-tailed)
Gender	.047	.828	.092	431	.927
Age	.533	.466	.270	427	.787
Income	1.429	.233	-.912	425	.362
Education	.288	.592	.225	429	.822
Marital Status	.729	.394	-.695	431	.487
Child below 15y	.695	.405	-.320	431	.749
Child above 15y	1.055	.305	.741	431	.459

\*critical p-value < 0.05

### 4.3 Data Screening

Data screening is an important step before running any sort of quantitative analysis, particularly prior to conducting multivariate analysis or structural equation modeling. Oftentimes researchers may commit errors while inputting data; some data could be missing in the filled-in instrument; collected data may contain outliers, and data pattern may violate normality assumption for multivariate analysis—all these problems may seriously affect the robustness of results obtained from various statistical tests. This is particularly valid for traditional ordinary least-square (OLS) estimations. However, PLS literature overwhelmingly support the notion that even under conditions of non-normality, missing values, multicollinearity and fewer cases than the number of variables, PLS-SEM would still provide workable results (Garson, 2016). Although many researchers still believe that PLS-SEM would provide workable results under such conditions, recent scholars opine that it is better and would provide more robust output if such conditions are evaluated and minimized (Jörg Henseler, Hubona, & Ray, 2016). Therefore, it may be recommended that data preparation and data screening be done prior to further statistical analysis (Hair,

Black, Babin, & Anderson, 2010) . The following sections elaborate on data screening results and interpretation.

#### **4.3.1 Missing Value Analysis**

Missing data should be checked in order to provide for the best possible relationships between variables. The current study found that there are 19 cases that contain one or more missing values, including a few cases with some missing demographic information like age, income and education.

As compared with the total number of samples, the number of missing cases may be seen as small (4.62%). It was possible to control missing responses as the questionnaires were completed in a face-to-face situation through mall-intercept survey, using self-administered instrument to end-users. Oftentimes, verbal clarification and feed-back was possible due to this survey context which most likely reduced the chance of non-response on part of the consumers. According to Wulder (2005), small number of missing cases in a large data set may not be a problem. It has been evident that researchers often delete such missing cases from the final analysis unless their occurrences are large. Some scholars are of opinion that deleting cases with missing data is a strategy that is strongly established in statistical programs and is remarkably common in many areas of social science research (Peugh & Enders, 2004).

However, rather than opting for straightforward list-wise deletion, some methodological criteria may be applied from a scientific point of view. In fact, the pattern of missing data is more important than the amount of information missing (Tabachnick, Fidell, & Osterlind, 2001). Occasional and random missing values may not pose serious problems, and list-wise deletion may work well when data are

missing completely at random (Allison, 2003). However, non-random missing values could be a serious problem no matter how few they are. This is because non-random missing values usually influence the generalizable character of research output. According to Allison (2003), list-wise deletion of non-random missing values is not appropriate. In other words, cases with missing values may be removed when data are missing completely at random (Singh, 2007). Therefore, it is hereby tested whether missing values are *Missing Completely at Random* (MCAR) or not. For the purpose, Little's MCAR test was conducted, with the null hypothesis that missing values occurred completely at random. The detailed results of Estimation Maximization (EM) are attached in Appendix E that also includes the MCAR test. The Little's MCAR test shows the following results: Chi-Square = 747.397, DF = 822, Sig. = 0.970, which leads to the conclusion that null hypothesis may not be rejected. Therefore, it may be inferred that the missing values occurred completely at random. Based on these results, list-wise deletion of missing values may be performed for further statistical analysis.

However, some degree of judgment needs to be applied to missing demographic data. The cases with missing demographic information were kept unless they also had other corresponding missing information on predictors or criterion variables. It seems appropriate to keep cases with only missing demographic information because demographic variables are not directly included in the proposed model either as predictors or criterion variables. Therefore, cases with missing demographic information may not have direct bearing on the relational output in PLS-SEM. Therefore, other than cases with missing demographic data, the rest of the cases with missing responses were list-wise deleted for final analysis.

At this point, a brief attention may be directed towards another type of response that may lower the quality of the overall data-set. As questionnaires were initially screened for potential problematic response pattern like “straight-line” responses, six of such cases were identified that were marked for further evaluation (cases 18, 59, 76, 140, 242, 376). Straight-line answers refer to a trend in answering when respondents may choose the same responses for every question in the instrument, which, if done for the purpose of speeding up the filling-in of the instrument, would affect the quality of the data collected (Cole, McCormick, & Gonyea, 2012). According to Robinson-Cimpian (2014), self-reporting surveys oftentimes require that respondents truthfully report their opinions while some respondents may not provide appropriate answers to questions. Sometimes such response pattern may result in technically completing a survey while not rendering any useful information for research purposes (Krosnick, Narayan, & Smith, 1996). Further evaluation of those straight-line cases revealed that the respondents marked almost all answers with one response category, including the same responses to reverse coded questions! Therefore, the straight-line pattern may well be suspected in these cases. Consequently, the identified cases were excluded from the data-set.

#### **4.3.2 Outlier Analysis**

An outlier is a case with an extreme value on one variable or such an unusual mix of scores on two or more variables that it biases statistical outputs (Tabachnick et al., 2001). According to Feinstein and Thomas (2002), when it comes to outlier analysis, the first step is to check the data carefully to ensure that the outlier is a genuine observations and/or valid answer by the respondent, and not an error in the original source or in the transcription of data. If it is an answer given by the respondent and

not an input error, then its treatment in further analysis is a matter of judgment and there is no simple rule.

Since outliers may substantially influence the outcome of statistical analysis, Hair et al. (2010) elaborated on four categories of outliers based on their source of uniqueness. They are as follows:

(a) Outliers from a transcription error where they come from a data-entry error or a transcriber's mistake in coding. Such entry should be removed or recoded as missing values, unless they could be verified from the original filled-in questionnaire.

(b) Outliers from an extraordinary occurrence, where they arise out of the exclusivity of the observation.

(c) Outliers from unusual observation which appear to be hard-to-explain by the researcher so they could be contingent upon the contextual judgment of the researcher.

(d) Outliers from the usual values which fluctuate within typical range of values on all variables. In most instances, they are not remarkably high or low values on the variable but their grouping of values are exclusive across variables. This class of outlier might be included in the main analysis unless there are indications to the contrary that their existence may not be of valid association of the concerned population.

Univariate outlier analysis was conducted for each indicator item and results were examined. Specifically, Boxplots were examined to spot potential outliers. Since indicators were measured in Likert scales, marginal responses like 1 and 5 were most likely to be identified as outliers, or any miscoded data falling outside of this range. A



number of cases were spotted in Boxplots that might be evaluated as outlier candidates. Each outlier was examined and tallied against the original filled-in instrument in order to verify the correctness of data entry. Only two cases were identified where potential data entry errors were detected, and the entries were corrected after tallying with the original completed questionnaire. Boxplots were run again to find potential cases of outliers for further examination. Only those Boxplots that indicated potential outliers are shown in Appendix F. With a view to assessing the extent to which the potential outlying cases could be a matter of concern, the mean value for each variable in which outlying cases were suspected was compared with the 5% trimmed mean value of the same variables. This measure is employed to examine the influence of the outlier on the mean (Pallant, 2011). The comparison showed little difference between the mean and the 5% trimmed mean for all potential outliers, which indicates that the univariate outliers identified by SPSS may not have strong influence on the mean. The following table (Table 4.3) shows the mean and 5% trimmed mean figures for the variables that were suspected as outliers in the boxplots.

In addition, after potential cases had been identified and their effects had been examined, it appeared that they could be classified in the fourth class of outliers as mentioned by Hair et al. (2010). There was no other evidence of data entry error or miscoding of responses. According to suggestion by Feinstein and Thomas (2002), it is a matter of judgment by researchers whether to keep or discard potential outliers that are actually genuine responses; thus no simple rule could be recommended in this regard. Based on these results and suggestions, since there is small impact of suspected (univariate) outliers' on the mean values, these apparent outliers may be

considered for inclusion in the final analysis unless there are evidences to the contrary that multivariate outliers exist in the data-set.

Therefore, before deciding on the outlier issues, it may be worth checking if there is any multivariate case of outlier. According to Filzmoser (2005), multivariate outliers are not always characterized by exceptionally high or low values in the data set along any solo coordinate. Instead, their univariate reflection on certain directions splits them from the mass of the data. A popular method to examine multivariate outlier(s) is to check for Mahalanobis distance (Tabachnick et al., 2001).



Table 4.3  
*Outlier Analysis by Comparing Mean vs. Trimmed Mean*

Items	Mean	5% trimmed mean	Difference	Items	Mean	5% trimmed mean	Difference
Beh2	2.727	2.696	0.030	Att11_aff	3.362	3.397	-0.035
Int2	3.698	3.728	-0.030	Att12_aff	3.782	3.816	-0.034
Int3	3.674	3.704	-0.030	Att14_aff	3.468	3.512	-0.044
Int4	3.698	3.738	-0.041	Att15_aff	3.722	3.754	-0.033
Int5	3.736	3.770	-0.034	Att16_en	3.535	3.544	-0.009
Hab1	2.770	2.776	-0.006	Att18_en	3.530	3.536	-0.006
Hab2	2.782	2.760	0.022	Att19_en	3.329	3.360	-0.032
Hab3	2.753	2.752	0.001	Att20_en	3.516	3.523	-0.007
Trust1	2.530	2.517	0.013	Subj1_inj	3.439	3.443	-0.004
Trust2	2.566	2.547	0.019	Subj2_inj	3.492	3.501	-0.010
Trust3	2.484	2.461	0.023	Sub3_inj	3.309	3.323	-0.013
Trust4	2.552	2.502	0.050	Sub4_inj	3.391	3.397	-0.007
Trust5	2.657	2.643	0.015	Sub5_des	3.393	3.389	0.004
Trust6	2.645	2.621	0.024	Sub6_des	3.374	3.384	-0.010
Att1_h	3.626	3.643	-0.017	Sub7_des	3.463	3.469	-0.007
Att2_h	3.609	3.627	-0.017	Pbc1	3.175	3.147	0.028
Att3_h	3.667	3.691	-0.024	Pbc2	3.137	3.120	0.017
Att5_h	3.657	3.680	-0.023	Pbc3	3.086	3.062	0.025
Att6_cog	3.537	3.544	-0.007	Pbc5	3.103	3.088	0.015
Att9_cog	3.470	3.475	-0.005	Pbc6	3.199	3.179	0.021
Att10_cog	3.429	3.459	-0.029				

Note: Only variables suspected with outlier in Boxplot were included in the table for analysis.

Mahalanobis distance ( $D^2$ ) is the distance of a data point from the computed centroid of the other cases where the centroid is computed as the intersection of the mean of the variables being assessed (Hazewinkel, 2001). In other words, the measure indicates the distance in standard deviation units between a set of scores (or vector) for a single case and the sample means for all variables (centroid), correcting for inter-correlations. Each point is spotted as a combination (X, Y) and multivariate outlying cases lie at a given distance from the other cases in the data-set. The distances are oftentimes explicated by using a conservative *p value* of less than 0.001 and the corresponding chi-square value with the degrees of freedom equal to the number of variables (Kline, 2011).

The first run of the test examined the distance of cases for predictor variables of Intention, and the second run examined the distance of cases for predictor variables of Purchase behavior. The first run identified one multivariate outlier (case serial: 329), showing a Mahalanobis distance of 19.7184, with a p-value of 0.0002 ( $< 0.001$ ). Therefore, a value of  $D^2$  with a low p-value in the chi-square distribution implies rejection of the null hypothesis that the case originates from the same population as the rest of the responses. Unlike univariate outliers which were shown to have small impact on the means, the existence of multivariate outlier may not summarily be overruled at ease. In addition, as only one multivariate outlier is suspected, deleting this case may not lead to substantial loss of statistical power. An iterative procedure was subsequently run to check whether deleting one outlier might result in appearance of other multivariate outliers in the data set. Such iterative test did not result in anymore multivariate outlier; therefore, the single case of multivariate outlier may be deleted from the data-set. The second run for checking Mahalanobis distance of cases

for predictor variables of Purchase behavior did not reveal any multivariate outlier. Thus any further action may not be needed. Appendix G includes the detailed output of Mahalanobis distance measures.

Therefore, the rest of the potential univariate cases may be kept as they were valid responses and fall in the Class 4 of outliers that may be included in the main analysis as indicated by Hair et al. (2010).

### **4.3.3 Normality Check**

PLS-SEM is a non-parametric method of structural equation modeling, therefore, it is less susceptible to the violation of normality assumption unlike other parametric methods (Hair et al., 2011). However, it is always recommended to check for normality of data as normality makes prediction more robust (Kline, 2011).

Normality was checked through both the statistical and visual methods. Statistical method tested univariate normality by using the Kolmogorov-Smirnov and the Shapiro-Wilk tests. Details of results are reported in the Appendix H. The results indicate that the significance value is 0.000 ( $< 0.05$ ) for all indicator variables, meaning rejection of null hypothesis that the values are normally distributed. Therefore, the results indicate the violation of the normality assumption for all indicator variables.

However, according to Field (2009), the normality statistics can be significant in large samples even when the scores are only slightly different from a normal distribution. Thus it is suggested that they be interpreted jointly with other measures like skewness and kurtosis, as well as visual inspection of histograms and probability plots. First, the

visual inspection of histograms and Q-Q plots did not reveal substantial deviation from normality, although some moderate skewness was visible. Next, the skewness and kurtosis values are examined within their 95% confidence interval level after bootstrapping for 5,000 samples. Results are shown in the table attached in Appendix I.

Results indicate that skewness and kurtosis exist, although they may not appear to be of critical concern for further statistical analysis. Ideally, the values of skewness and kurtosis are zero and three respectively in a perfectly normal distribution. Therefore, further the deviation, higher would be the degree of skewness and kurtosis. Some of these values indicating “-symmetry” (skewness) and “-peakedness” (kurtosis) appear to be positive, while some appear to be negative. Positive skewness indicates that values are crowded to the left of the distribution, i.e., at the low value region. In contrast, negative skewness indicates that values are crowded to the right of the distribution, i.e., high value region. On the other hand, positive kurtosis scores indicate that the distribution is clustered at the center (high peak, long thin tails), whereas negative kurtosis values means a flatter distribution where values are loaded towards the tails rather than around the center.

The methodological question remains as to what extent skewness and kurtosis would be problematic in statistical analysis? Some authors posited that the values for skewness and kurtosis between -1 and +1 may be tolerable in order to demonstrate normality of univariate distribution (Hair et al., 2014). In table 4.3 above, all the skewness and kurtosis values are within this range, except for the indicator variable Beh6. According to Tabachnick et al. (2001), for a reasonably large sample like 200 or more, the presence of skewness and kurtosis may not exaggerate its influence in a

definitive way in the subsequent statistical analysis. In addition, since the univariate non-normality may not necessarily mean multivariate non-normality, the multivariate normality also needs to be checked. It was visually checked by using P-P plots.

Subsequently, the shapes of the distribution were then examined by histograms which plausibly indicated normal distribution, with some minor deviations. This is also supported by an inspection of the normal probability plots, labeled as Normal P-P Plot. A reasonably straight line in the plot, albeit with some minor deviations, suggests a normal distribution. Therefore, multivariate normality assumption may not be overly violated.

For minor indications of non-normality, scholars opined that many scales and measures employed in social science have either positively or negatively skewed values; however, the mere presence of such skewness would not essentially mean a setback for the scale (Pallant, 2011). In fact, such results might actually project the principal nature of the constructs being computed. In addition, if the residuals are found to be normally distributed, the expected normal probability plots would look like just the same if a variable were normally distributed. Provided that the residual plots appear to be normal, there is no reason to screen the individual variables for normality (Tabachnick et al., 2001).

Therefore, considering the regression residual plots and histograms, it may be inferred that the variables are “close to normal” as major violations are not observed.

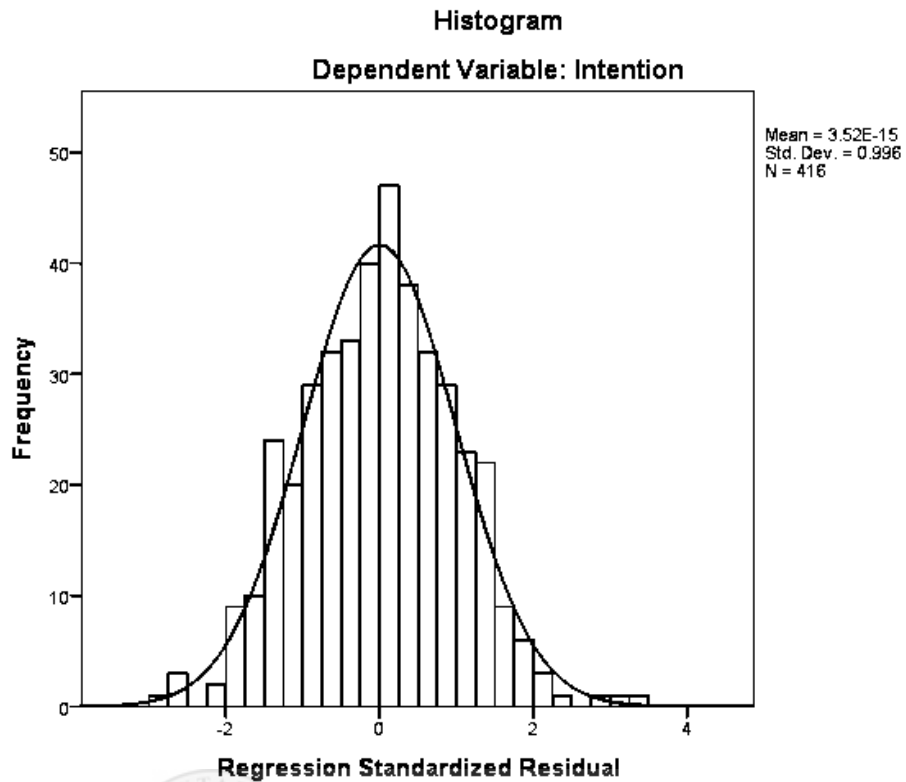


Figure: 4.1 Histogram Showing Distribution Regression Standardized Residuals of Intention

Normal P-P Plot of Regression Standardized Residual  
Dependent Variable: Intention

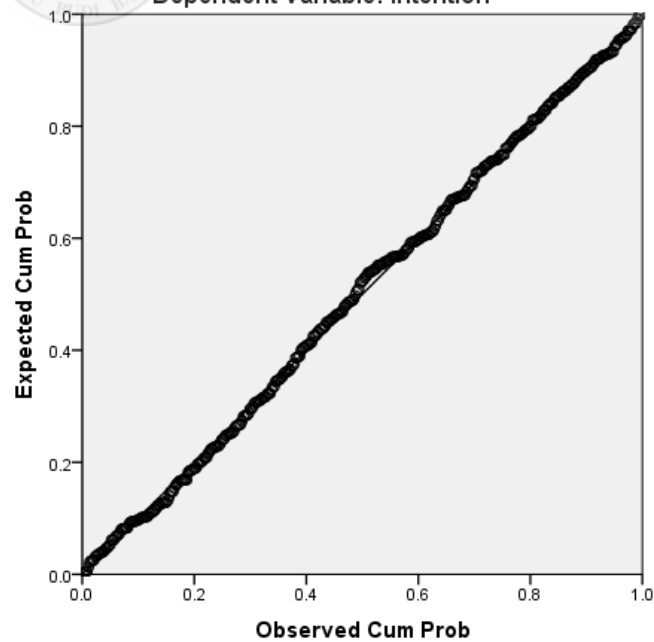


Figure 4.2: P-P Plot of Regression Standardized Residual of Intention



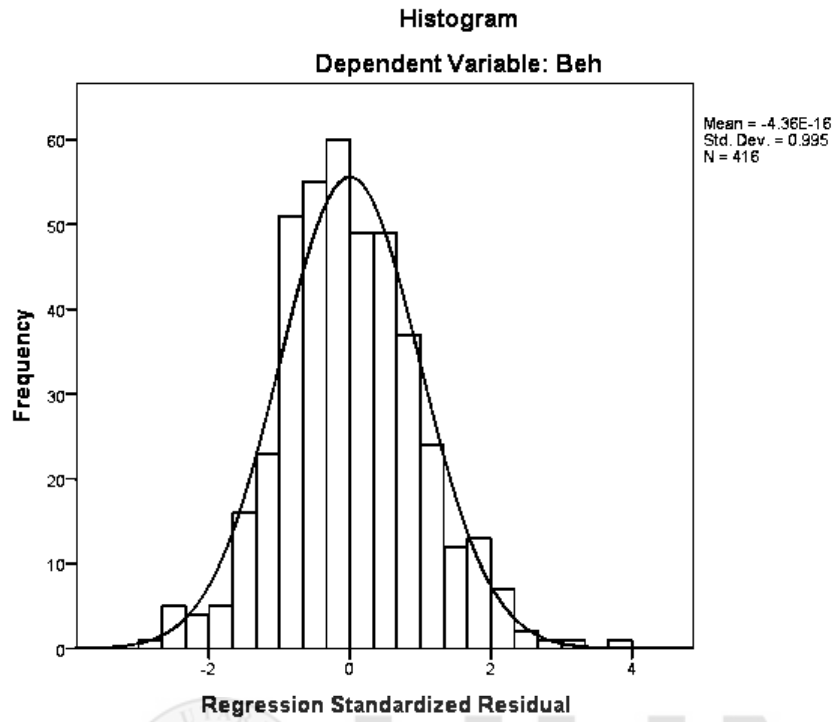


Figure: 4.3 Histogram Showing Distribution Regression Standardized Residuals of Behavior

Normal P-P Plot of Regression Standardized Residual

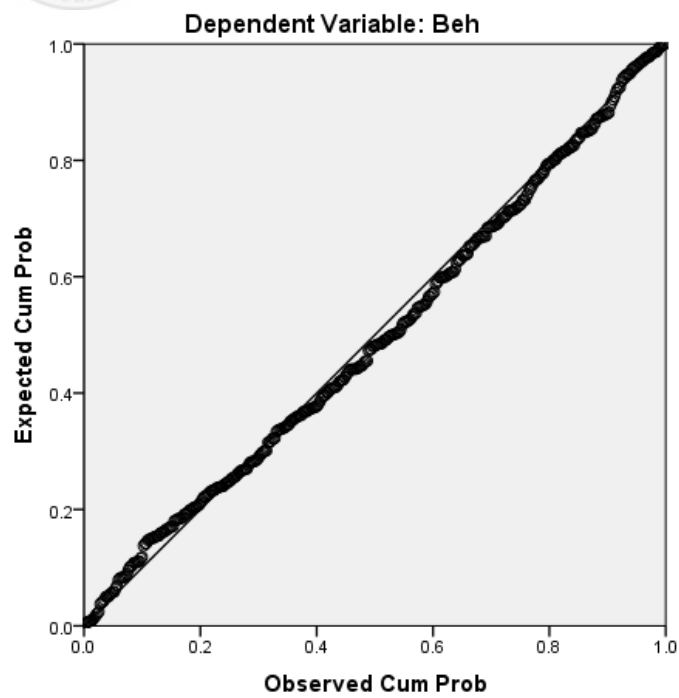


Figure 4.4: P-P Plot of Regression Standardized Residual of Behavior

#### 4.3.4 Homoskedasticity Check

Homoscedasticity signifies the assumption that dependent variable(s) manifest equal levels of variance across the span of predictor variables(s) (Hair et al., 2010). Homoscedasticity is connected to the normality assumption because when the assumption of multivariate normality is satisfied, the associations between variables appear to be homoscedastic (Tabachnick et al., 2001). This assumption may be tested both visually and statistically. In visual mode, the bi-variate scatterplots between two variables should be of nearly the identical breadth all over with some protruding toward the middle. Alternatively, in a multivariate model, standardized residuals can be plotted against standardized predicted values to check for equality of variance, as is shown in the scatterplot below.

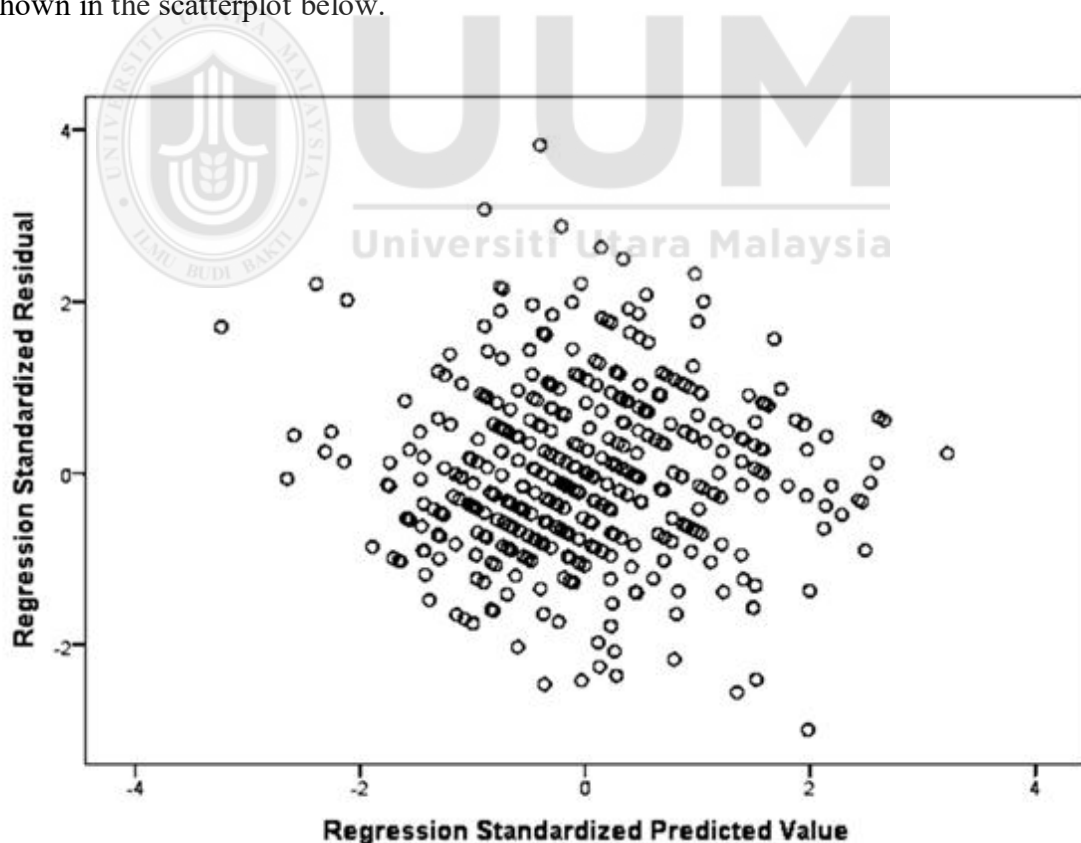


Figure 4.5: Scatterplot for Homoskedasticity (Dependent Variable: Behavior)

It seems that the heteroskedastic trend may not be visually dominant. However, besides visual checks, statistical test may be performed to confirm the presence or absence of heteroskedasticity. Statistically, a number of tests can be used to check for homoscedasticity assumption, like White test, Breusch-Pagan test, Glejser test, etc. The current study used Breusch-Pagan (BP) test to statistically check for heteroskedasticity.

The BP test for heteroskedasticity turned out to be insignificant (F-value= 0.037, p-value= 0.848). Thus the null hypothesis that the variances are equal may not be rejected, denoting absence of heteroskedasticity. Therefore, it may be feasible to proceed toward further analysis without any data transformation.

#### **4.3.5 Multicollinearity Check**

Multicollinearity is defined as the presence of a phenomenon in correlation matrix when a predictor is highly correlated with another predictor in the model (Kline, 2013). It is suggested that the tentative degree of correlation would be “high” when it may go over 0.90, causing a concern for multicollinearity in the model (Hair, 2010). Therefore, past researchers recommended that multicollinearity among predictor variables be examined before further statistical tests are conducted on the planned model.

In PLS-SEM, multicollinearity is typically checked by using the tolerance and VIF (Variance Inflation Factor) values. Tolerance value is defined as the degree of variability of the selected predictor variable that is not explained by other predictor variables. VIF values are actually the inverse ( $1/x$ ) of the tolerance values. According to Hair (2010), the tolerance cut-off value may be set at 0.10, that would correspond

to a maximum VIF value of 10. Therefore, it means that the closer the VIF value is to 1.00 (or the further away from 10), the lesser is the degree of multicollinearity.

Table 4.4 exhibits multicollinearity statistics for all the predictor variables in the model.

Table 4.4  
*Multicollinearity Statistics (VIF values)*

Constructs	Intention	Behavior
Attitude	1.137	
Habit		1.086
Intention		1.058
PBC	1.033	
SN	1.170	

Based on these VIF values, it appears that all the values are within the cut-off point. Therefore, multicollinearity may not be a problem for the current study.

#### 4.4 Common Method Bias

Common Method Bias refers to variance that is characteristic to the measurement method rather than to the constructs the measures represent (Podsakoff et al., 2003). Often referred to as Common Method Variance (CMV), it creates spurious internal consistency and correlations among variables. According to Podsakoff et al. (2003), common method variance is oftentimes an issue in behavioral research and such bias should be investigated and controlled before further analysis could be done. In the specific case of PLS-SEM path analysis, many scholars identified the need for checking CMV before further analysis is conducted. In PLS-SEM, the process of evaluating significance calls for assessing the latent constructs and testing whether evaluations of their relationships with hypothesized antecedents, correlates, and

consequences are significantly deviates from zero (Mackenzie et al., 2011). According to DeVellis (2012), Common Method Bias should be examined before conducting such evaluation.

One such statistical test for checking common method bias is Herman's Single-Factor test (Podsakoff & Organ, 1986). Despite its limitations, the test has been popularly used and widely accepted in the research community (Ylitalo, 2009). It uses the method of exploratory factor analysis to investigate whether one factor dominantly emerges as accounting for the majority of variance in the collected data. It may be conducted by running exploratory factor analysis procedure with Principle Component Analysis (PCA) extraction method, without factor rotation. The results are then examined whether substantial variance is accounted for by a single component or not. If one single component appears to be dominant with majority share of variance, common method bias is suspected. Another alternative and straightforward way to implement the test is to follow the same procedure except that the number of factors to be extracted is forced to be 1 (one), and then evaluate whether the single component shows majority of the variance in the data set. The results of the second approach are reported in this section which is presented in Table 4.6. Results show that the extracted components in descending order based on Eigenvalues, whereas reports the percentage variance accounted for only if the single component solution is forced.

As already noted, the Herman's single-factor test attempts to examine whether the study is predominantly affected by common method bias. It loads all items from all the constructs into an exploratory factor analysis to examine whether one single factor would emerge containing substantial variance. Whereas the term "substantial" is

subject to interpretation and judgment, the rule of thumb is if the one factor solution exhibits more than 50% of the variance of the data set, it may be thought that common method variance could be an issue for the research concerned. The results show that the one factor solution accounts for about 15.009% of variance, therefore, common method bias may not be an issue for the current study.

Some researchers opined that principal axis factoring (PAF) is more appropriate than Principal Component Analysis (PCA) while using Herman's Single Factor test (Ylitalo, 2009). The conclusions would most likely be the same even though principal axis factoring (PAF) would show lower account for variances. Therefore, Herman's Single Factor test is also run by using PAF as extraction method, with un-rotated factors and not forcing the solution to one factor (unlike the previous approach as tested). Thus components were automatically arranged based on Eigen-values. The results are attached in the Appendix D as it seems redundant to report the full results in the main text. The analysis of results lead to similar conclusion that CMV may not be a problem for the current study, as 15 components are extracted and no single factor emerges that accounts for substantial share of variance. Based on these results, it may be concluded that common method variance may not be a problem for the current study.

Table 4.5

*Total Variance Explained*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% Variance	of Cumulative %	Total	% Variance	of Cumulative %
1	9.005	15.009	15.009	9.005	15.009	15.009
2	4.717	7.862	22.871			
3	3.377	5.628	28.499			
4	2.610	4.349	32.848			
5	2.470	4.117	36.965			
6	2.306	3.844	40.809			
7	2.173	3.622	44.431			
8	1.811	3.019	47.450			
9	1.638	2.729	50.179			
10	1.473	2.455	52.634			
11	1.327	2.212	54.846			
12	1.166	1.943	56.789			
13	1.057	1.762	58.551			
14	1.044	1.740	60.291			
15	1.017	1.695	61.987			
16	.995	1.658	63.645			
17	.936	1.560	65.205			
18	.894	1.491	66.696			
19	.854	1.423	68.119			
20	.829	1.382	69.501			
21	.782	1.304	70.804			
22	.745	1.241	72.046			
23	.737	1.228	73.274			
24	.724	1.206	74.480			
25	.707	1.179	75.659			
26	.680	1.134	76.793			
27	.660	1.100	77.893			
28	.636	1.059	78.952			
29	.626	1.043	79.995			
30	.602	1.003	80.997			
31	.575	.958	81.955			

Extraction Method: Principal Component Analysis, factors to extract=1

#### 4.5 Demographic Profile

Demographic profile is a set of descriptive statistics that gives readers an idea of what sample characteristics are observed in the study. In market research, demographic profile of consumers is an important output of data analysis (Lambin & Schuiling, 2012). Demographic data give a clearer picture of consumers who are buying organic foods and how the market segment may be visualized based on these buyers' profile. The following table summarizes the demographic profile of respondents.

Table 4.6 Demographic Profile of Respondents

Demographic Measures	Frequency	Percentage	Cumulative Percentage
Age	18-25	54	12.98
	26-35	105	25.24
	36-45	133	31.97
	46-55	82	19.71
	56-65	32	7.69
	65+	7	1.68
	Not reported	3	0.72
Gender	Male	191	45.9
	Female	225	54.1
Income (BDT) <sup>1</sup>	Below 25,000	22	5.29
	25,000-35,000	51	12.26
	35,001-45,000	109	26.20
	45,001-55,000	131	31.49
	55,001-65,000	77	18.51
	65,000+	21	5.05
	Not reported	5	1.20



Demographic Measures		Frequency	Percentage	Cumulative Percentage
Education	Primary School	6	1.44	1.44
	SSC <sup>2</sup>	29	6.97	8.41
	HSC <sup>3</sup>	86	20.67	29.09
	Bachelor	200	48.08	77.16
	Postgraduate	93	22.36	99.52
	Not reported	2	0.48	100.00
Marital status	Single	140	33.65	33.65
	Married	276	66.35	100.0

Notes:

<sup>1</sup> BDT (Bangladesh Taka) 1= US\$ 0.0128 (February 02, 2016)

<sup>2</sup> SSC: Secondary School Certificate (10<sup>th</sup> grade)

<sup>3</sup> HSC: Higher Secondary School Certificate (12<sup>th</sup> grade)

From demographic profile, it appears that most consumers belong to 36-45 age range. The sample was slightly biased towards female respondents, which has been common in many countries among grocery shoppers. About two-third of the respondents were married. There were more respondents from upper income and education groups, which has been consistent with findings in other countries (Pereira, Lima-Filho, Maciel, & de Oliveira, 2015). Therefore, the sample may be considered representative of general characteristics of organic food shoppers.

#### 4.6 Model Specification and Initial Run

Once responses has been checked for missing values, incomplete answers, outliers, multivariate normality and multicollinearity, the data has been ready for further modeling and analysis. Partial least square structural equation modeling (PLS-SEM) was applied to see the model fit and significance of factors behind purchase intention and purchase behavior. The analysis was done in two steps based on past literature on

PLS-SEM studies: first, to examine the outer model, and second, to evaluate the inner or structural model (Anderson & Gerbing, 1988). SmartPLS3 was used for analyzing the collected data (Ringle et al., 2015). However, Hair et al. (2014) recommended that the model should be specified before continuing to examine these models. Thus the instrument validity and reliabilities of outer model indicators were examined. In addition, the measurement properties of multi-indicator construct, for example, convergent validity, discriminant validity, reliability, and goodness of fit measures were evaluated. This was implemented by using *a priori* path modeling and subsequent confirmatory factor analysis (CFA).

Evaluation of PLS structural model is conducted by  $R^2$  value, effect size and predictive relevance ( $Q^2$ ) of the model. Also, bootstrapping was conducted to test the significance of hypothesized relationships. The original model consists of 60 indicators in total. Purchase behavior was measured by six indicators. Purchase Intention was measured by six indicators as well. Habit and situational constraints were measured by four indicators each. Trust was measured by six indicators. Attitude was viewed as a second-order construct having four dimensions and five indicators for each dimension: resulting in a total of 20 indicators. While modeling the reflective second-order construct of Attitude, repeated indicator approach was followed as recommended by Lohmöller (1989). Subjective Norm was also viewed as a second-order reflective construct, having two dimensions and four indicators for each dimension. It was also modeled by using repeated indicator approach. Perceived Behavioral Control had six indicators. The relationships among these variables were primarily modeled *a priori* based on the Integrated Behavior Model (Montano & Kasprzyk, 2008). In addition, Situational Constraints and Trust have been modeled as moderating variables, both influencing the relationship between Intention and

Behavior. Consequentially, Attitude needs to be tested for its mediation effect in the relationship between Subjective Norm and Intention. Therefore, the specified model was run by using PLS algorithm, the initial results of which are attached in the Appendix J.

#### 4.7 Outer Model Measurements

As already noted, data were analyzed based on two-step approach in SmartPLS3, first estimating measurement model and then looking at the structural model. Both the measurement and structural validity is then assessed. The following table indicates the types of tests conducted for the type of constructs.

Table 4.7  
*Two-Step Process of PLS Modeling\**

Stages	Objective	Analysis	Construct Type
First	Measurement Model evaluation	a. Internal consistency b. Convergent Validity c. Discriminant Validity	All reflective
Second	Structural Model evaluation	a. $R^2$ b. Path coefficients, $\beta$ c. Significance tests	

\*adapted from Anderson and Gerbing (1988)

Therefore, convergent and discriminant validities need to be established at this stage.

##### 4.7.1 Convergent Validity

As already noted, the outer loadings can be checked from the diagram at Appendix J. About the cut-off criteria for outer loadings, there are differences among scholars. According to Barclay, Higgins and Thompson (1995), indicator with loadings less than 0.707 should be discarded. It follows that for AVE to be around 0.50 or more, this cut-off criteria may work well (Henseler et al., 2009). However, in social science and psychology, outer loadings are sometimes lower than the criteria as postulated

here, for example, 0.6 or even less. As suggested by Hair et al. (2014), such indicators should only be removed when such removal contributes to increase in composite reliability above its minimum threshold value. Increase in AVE may also be noted alongside the increase in composite reliability. Therefore, based on different recommendations by past scholars, and to maximize the measurement model's capability to satisfy the prerequisites of convergent validity, 0.6 and above value in outer loading may be used as a basis for keeping any indicator in the measurement model.

A close examination shows that a number of indicators are loaded with values lower than 0.6, therefore, further scrutiny may be needed for these items. Ideally, indicators with low loadings that appear to be potential candidates for deletion, require one-by-one examination in the CFA process, and iterative calculations need to be run to see whether deletion of one such indicator increases the overall loading of other indicators. At the same time, increase in composite reliability and AVE should be continuously evaluated at every step.

In fact, AVE measures the amount of variance that a construct captures from its indicators relative to measurement error, whereas CR measures internal consistency (Chin & Dibbern, 2010). Hence, by applying the iterative process, nine (9) indicators were identified in multiple steps and eventually deleted. One item, Trust4, was kept as it was close to 0.60. Therefore, the final model is arrived at by checking for composite reliability and AVE. The PLS algorithm results of the screened model is attached in Appendix K. The following table shows the remaining items in the model loaded on respective constructs, their loading values, cronbach alpha, composite reliability, and AVE values.

According to Garson (2016), composite reliabilities should be used to report internal consistency in PLS modeling using reflective constructs, though Cronbach alphas are also valid. Therefore, as a convention, Cronbach alphas are kept in the report while emphasizing the value of composite reliability (CR). While there are many cut-off values for Cronbach alphas and CR as recommended by past scholars, it is widely popular to use 0.70 for both the measures based on Nunnally and Bernstein (1994) and Hair et al. (2014). The following table that summarizes the reported values shows that all the indicators' CR and Cronbach alpha values are within this cut-off limit. In addition, AVE values of both the first order and second order constructs have also met the minimum criteria of 0.50 (Henseler et al., 2009). The second-order Attitude construct shows an AVE value of 0.492, which is very close to 0.50, therefore, convergent validity is assumed.

Table 4.8  
*Factor Loadings, Composite Reliability (CR) and AVE*

Construct	Items kept	Items deleted	Loadings after deletion	Cronb. $\alpha$	CR	AVE
Health Attitude (Att_Hlth)	Att1_h Att2_h Att3_h Att5_h	(Att4_h)	0.739 0.789 0.751 0.764	0.758	0.846	0.579
Cognitive Attitude (Att_Cog)	Att6_cog Att7_cog Att9_cog	(Att8_cog, Att10_cog)	0.818 0.805 0.766	0.712	0.839	0.634
Affective Attitude (Att_Aff)	Att12_aff Att13_aff Att15_aff	(Att11_aff, Att14_aff)	0.825 0.848 0.827	0.781	0.872	0.695
Environmental Attitude (Att_Env)	Att16_en Att17_en Att18_en Att19_en Att20_en	None	0.719 0.740 0.737 0.682 0.720	0.768	0.843	0.518
Attitude (2 <sup>nd</sup> order)				0.840	0.868	0.492

(Continued)

Construct	Items kept	Items deleted	Loadings after deletion	Cronb. $\alpha$	CR	AVE
Injunctive Norm (Sub_Inj)	Sub1_inj	None	0.757	0.721	0.827	0.547
	Sub2_inj		0.817			
	Sub3_inj		0.715			
	Sub4_inj		0.660			
Descriptive Norm (Sub_Des)	Sub5_des	(Sub8_des)	0.789	0.767	0.866	0.682
	Sub6_des		0.847			
	Sub7_des		0.841			
Subjective Norm (SN)	2 <sup>nd</sup> Order			0.796	0.849	0.759
Perceived Behavioral Control (PBC)	Pbc1	(Pbc2)	0.752	0.770	0.842	0.516
	Pbc3		0.658			
	Pbc4		0.717			
	Pbc5		0.701			
	Pbc6		0.758			
Purchase Intention (Intention)	Int1	None	0.646	0.802	0.858	0.503
	Int2		0.613			
	Int3		0.696			
	Int4		0.736			
	Int5		0.801			
	Int6		0.746			
Habit (Habit)	Hab1	None	0.818	0.824	0.883	0.654
	Hab2		0.810			
	Hab3		0.817			
	Hab4		0.790			
Situational Constraints (Sitconst)	Situ1	None	0.843	0.855	0.902	0.698
	Situ2		0.875			
	Situ3		0.860			
	Situ4		0.758			
Trust (Trust)	Trust1	None	0.824	0.843	0.885	0.567
	Trust2		0.800			
	Trust3		0.628			
	Trust4		0.588			
	Trust5		0.833			
	Trust6		0.805			
Purchase Behavior (Behavior)	Beh1	(Beh4, Beh6)	0.825	0.874	0.914	0.726
	Beh2		0.868			
	Beh3		0.878			
	Beh5		0.838			

Therefore, based on reliability and AVE values, sufficient supports exist in favor of convergent validity.

#### **4.7.2 Discriminant Validity**

After evaluating the indicator and construct reliability, a detailed validation process also entails the examination of a structural model's discriminant validity. Discriminant validity is described as the dissimilarity in a measurement tool's measurement of different constructs (Gentle, Härdle, & Mori, 2010). An important stipulation for discriminant validity is that the shared variance between the latent variable and its indicators must be greater than the variance shared with other latent variables in the model (Hulland, 1999). Discriminant validity is held proven if a construct's square-root of AVE is bigger than the inter-correlations of this construct with any other of the model's latent variables (Fornell & Larcker, 1981). The table 4.9 and 4.10 shows that square-root of AVEs of all constructs (in the diagonal) are higher than their intercorrelations, therefore, discriminant validity is established.

However, recent studies recommended the use of Heterotrait-Monotrait (HTMT) criteria instead of the previous criteria (Jörg Henseler, Ringle, & Sarstedt, 2015). A series of simulation tests demonstrated that the lack of discriminant validity is better detected by the new criteria. It was recommended that the HTMT ratio be below 0.90 in order to indicate a sufficient level of discriminant validity (Henseler et al., 2015). The following table 4.11 shows the HTMT ratios for all constructs. It shows that the constructs' HTMT ratios are below 0.90 cut-off value, therefore, the sufficient level of discriminant validity exists.

Table 4.9

*Intercorrelations of First-order Constructs*

Constructs	Att_Aff	Att_Cog	Att_Env	Att_Hlth	Behavior	Habit	Intention	PBC	SitConst	Sub_Des	Sub_Inj	Trust
Att_Aff	0.834*											
Att_Cog	0.476	0.796*										
Att_Env	0.397	0.368	0.720*									
Att_Hlth	0.245	0.280	0.240	0.761*								
Behavior	0.245	0.151	0.284	0.166	0.852*							
Habit	0.142	0.054	0.113	0.158	0.286	0.809*						
Intention	0.349	0.347	0.363	0.439	0.313	0.163	0.709*					
PBC	-0.011	0.085	0.048	0.050	0.092	-0.024	0.054	0.718*				
SitConst	0.013	0.064	-0.036	-0.069	-0.399	-0.171	-0.052	-0.032	0.835*			
Sub_Des	0.129	0.225	0.266	0.142	0.141	0.072	0.197	0.096	-0.031	0.826*		
Sub_Inj	0.158	0.204	0.299	0.317	0.156	0.084	0.309	0.215	-0.046	0.531	0.739*	
Trust	0.123	0.058	0.164	0.144	0.477	0.220	0.176	0.022	-0.297	0.111	0.122	0.753*

\*Square-root of AVE on the diagonal.

Table 4.10

*Intercorrelations of Second-order Constructs*

Constructs	Attitude	Subjective Norm
Attitude	0.701*	0.256
Subjective Norm	0.256	0.871*

\*Square-root of AVE



Table 4.11  
*Heterotrait-Monotrait Criteria for Evaluating Discriminant Validity\**

Constructs	Att_Aff	Att_Cog	Att_Env	Att_Hlth	Behavior	Habit	Intention	PBC	SitConst	Sub_Des	Sub_Inj	Trust
Att_Aff												
Att_Cog	0.637											
Att_Env	0.505	0.488										
Att_Hlth	0.318	0.375	0.306									
Behavior	0.297	0.191	0.346	0.204								
Habit	0.177	0.092	0.152	0.203	0.335							
Intention	0.424	0.443	0.448	0.572	0.372	0.200						
PBC	0.092	0.123	0.113	0.096	0.117	0.078	0.106					
SitConst	0.050	0.102	0.081	0.095	0.459	0.201	0.088	0.052				
Sub_Des	0.167	0.302	0.343	0.187	0.172	0.102	0.247	0.127	0.074			
Sub_Inj	0.205	0.277	0.393	0.431	0.192	0.122	0.414	0.283	0.071	0.699		
Trust	0.152	0.088	0.203	0.181	0.551	0.261	0.224	0.060	0.351	0.148	0.159	

\*HTMT ratio < 0.90 indicates sufficient discriminant validity

## 4.8 Structural Model Results

After checking for discriminant validity, the reflective measurement model's validation process has been completed. Therefore, the second stage of PLS-SEM evaluation would call for assessing the structural model.

### 4.8.1 R<sup>2</sup> and Effect Size Measurement

In PLS-SEM, structural model is assessed through PLS path modeling algorithm as well as a bootstrap process where path coefficients, R<sup>2</sup> and subsequent t-values are evaluated. Based on the two-step process of PLS-SEM model analysis, the first step of evaluating structural (inner) model is to assess the R<sup>2</sup> (Anderson & Gerbing, 1988). The final model with path coefficient output is shown in Appendix K.

The results show a R<sup>2</sup> value of 0.380. Based on Chin (1998), values above the cutoffs of 0.67, 0.33 and 0.19 may be treated as substantial, moderate and weak respectively. Therefore, the R<sup>2</sup> value may be considered moderate for the model. The implications of the results are elaborately discussed in chapter 5. In addition, most of the path coefficients show significant relations, except Perceived Behavioral Control. Subsequent to the measure of R<sup>2</sup>, effect size (f<sup>2</sup>) may also be evaluated. The f<sup>2</sup> effect size looks at the expression for the R<sup>2</sup> change-effect. The f<sup>2</sup> coefficient is calculated by the formula:  $(R^2_{\text{original}} - R^2_{\text{omitted}})/(1 - R^2_{\text{original}})$ . It shows that the denominator in the equation is unexplained portion of total possible effect. The f<sup>2</sup> formula implies how large a proportion of unexplained variance is accounted for by the changes in R<sup>2</sup>

(Hair, Hult, Ringle, & Sarstedt, 2014). The following table shows the effect size ( $f^2$ ) for concerned constructs.

Table 4.12  
 $f^2$  Effect Size

Constructs	Behavior	Intention	Attitude
Attitude		0.319	
Habit	0.026		
Intention	0.077		
PBC		0.000	
SN		0.017	0.137
SitConst	0.080		
Trust	0.152		
Moderating 1	0.001		
Moderating 2	0.015		

Based on Cohen (1988), values of 0.02, 0.15 and 0.35 denote a small, medium and substantial  $f^2$  effect size. Therefore, Habit, Intention and Situational Constraints shows small effect size in relation to Behavior; Subjective Norm also shows small effect size in relation to Intention and moderate effect size in relation to Attitude; Trust shows moderate effect size in relation to Behavior, and Attitude shows (close to) substantial effect size in relation to Intention. Both the moderating variables show small effect size in relation to Behavior.

Next, the path coefficients may be examined and significance be tested. Appendix K shows the path coefficient. In conjunction with bootstrap output in Appendix L, the following section shows the significance of path coefficients.

#### 4.8.2 Path Coefficients and Significance

The following table shows the path coefficients, standard errors, t-value and corresponding t-values.

Table 4.13  
*Hypothesis Testing*

No.	Hypothesis	Path coefficients	SE	t-value	p-value	Support
H1a	Intention→Behavior	0.225	0.040	5.645	0.000	Yes***
H1b	Habit→Behavior	0.131	0.039	3.327	0.000	Yes***
H1c	Situational Constraints on Intention→Behavior	0.020	0.036	0.565	0.286	No
H1d	Trust on Intention→Behavior	0.114	0.049	2.327	0.010	Yes**
H2a	Attitude→Intention	0.502	0.041	12.175	0.000	Yes***
H2b	Subjective Norm→Intention	0.118	0.052	2.278	0.011	Yes**
H2c	Subjective Norm→Attitude	0.348	0.048	7.265	0.000	Yes***
H2d	Subjective Norm→Attitude→Intention	0.348	0.048	z-value 6.238	0.000	Yes***
		0.502	0.041			
H2e	PBC→Intention	0.002	0.055	0.030	0.488	No

\*\*Significance for  $p < 0.05$ , one tailed

\*\*\*significance for  $p < 0.01$ , one tailed

The z-value for H2d is derived from Sobel test, by using macro developed by Preacher and Hayes (2008) . The confidence intervals are calculated by the same macro for Sobel test, that are shown below Table 4.14. Both the z-value and confidence intervals show that the mediation effect is significant. At the same time, the coefficient of Subjective Norm to Intention was evaluated both before introducing Attitude as a mediator, and after introducing Attitude as a mediator. It was observed

that, although the coefficient went lower after introducing the mediator variable, the path still remains significant. Therefore, only partial mediation is supported.

Besides Sobel test, an alternative approach may also be used for testing mediation as recommended by Preacher and Hayes (2008). The following table shows the results of mediation effect analysis. Apart from results as presented, it may be observed that the confidence interval shows significant indirect effect for the postulated mediation relationship.

Table 4.14  
*Mediation Effect Analysis*

Hypothesis	Process	Path	Path Coeff.	i.eff.	std	t.eff.	VAF	t-value	p-value	Sig.		
H2d	Direct effect without mediator	SN→INT	0.295	n/a				5.626	0.00	***		
	Indirect effect with mediator	SN→INT	0.118	n/a		0.175	0.028	0.47	0.792	6.251	0.00	***
		SN→ATT	0.348									
		ATT→INT	0.502									

Notes:

- Hypothesis H2d states that Attitude mediates the relationship between Subjective Norm and Intention
- SN = Subjective Norm; INT = Purchase Intention; ATT = Attitude
- i.eff.= indirect effect; std = standard deviation; t.eff. = total effect
- t.eff. (Total effect) = direct effect + indirect effect
- VAF (Variance Accounted For) = indirect effect/total effect
- Sig.\*\*\* = significant at alpha < 0.01

The Confidence Interval for indirect effect based on Sobel test shows the following:

Indirect effect (IE)	:	0.175
99% confidence interval	:	$0.1014 \leq IE \leq 0.2664$
95% confidence interval	:	$0.1207 \leq IE \leq 0.2450$
90% confidence interval	:	$0.1298 \leq IE \leq 0.2328$

It shows that the direct effect is significant both before and after the mediator variable is introduced. The mediating effect shows a VAF value of 0.792. According to Hair et al. (2013), partial mediation is substantiated when VAF exceeds the 0.20 threshold value, whereas the full mediation is substantiated when it exceeds 0.80. Since the VAF value is above 0.20 threshold value, but below the full mediation threshold value, partial mediation is demonstrated in this case.

Comparing the results of Sobel test and the alternative test as demonstrated above, it is evident that both the tests lead to the same decision. Therefore, partial mediating effect is confirmed.

Next, some graphical analysis of the moderating effect is conducted. Since the moderation effect was not significant for H1c, but it is significant for H1d, the moderating effect may be visualized in order to get a clearer understanding. The following figure graphically represents the moderating effect, generated by using Stattools developed by Preacher, Curran and Bauer (2006). The graphical representation shows that people with higher level of trust buys more corresponding to their high intention, compared to people having similar intention but lower level of trust. The higher positive slope of the higher trust group shows that Trust is positively acting as a moderator in the relationship between Intention and Behavior.

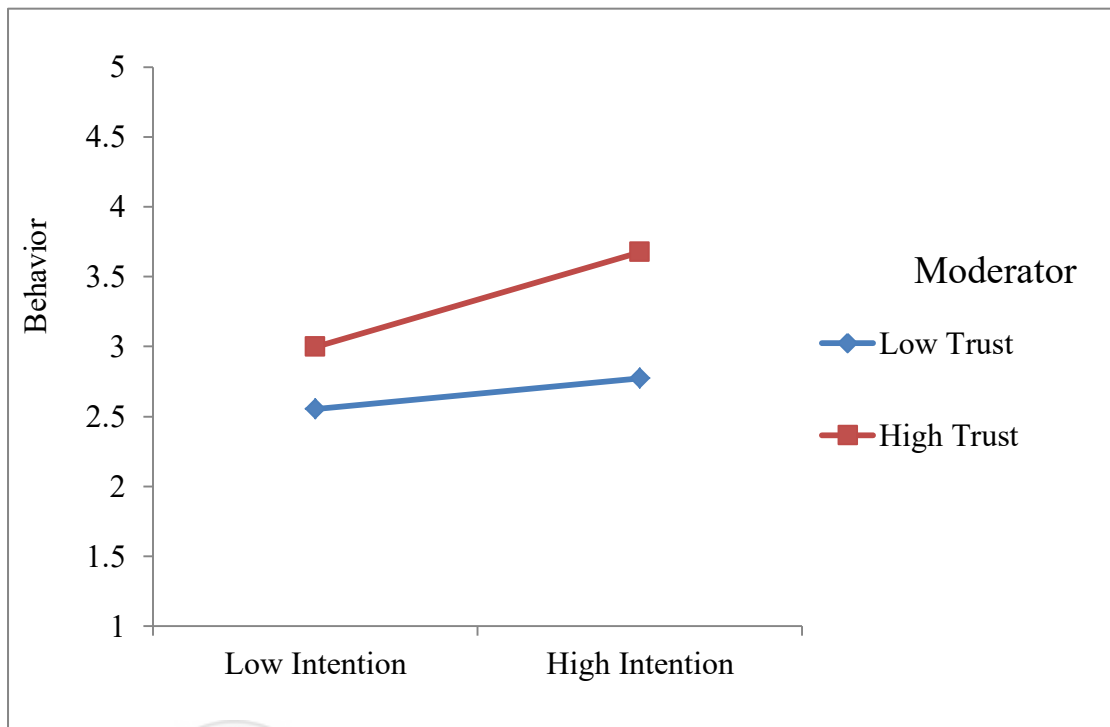


Figure 4.6: Moderating Effect of Trust on the Intention-Behavior Relationship

Based on these results, the hypothesis tests are elaborated as follows:

H1a: Intention is found to have significant relationship with purchase behavior, at  $\beta=0.225$ , t-value of 5.645 and p value of 0.00.

H1b: The proposed relationship between Habit and Behavior is significant, at  $\beta=0.131$ , t-value of 3.327 and p value of 0.000.

H1c: The moderating effect on the relationship between Situational Constraints and Behavior could not be supported, as t-value = 0.565 and p-value=0.286.

H1d: The moderating effect of Trust on the relationship between Intention and Behavior is supported, with t-value of 2.327 and p-value of 0.010.

H2a: The relationship between Attitude and Intention holds, as t-value= 12.175 and p-value= 0.000.

H2b: The relationship between Subjective Norm and Intention is significant, with beta=0.118, t-value=2.278 and p-value=0.011.

H2c: The relationship between Subjective Norm and Attitude is found to be significant, with beta= 0.348 , t-value= 7.265, p-value=0.000.

H2d: The mediating role of Attitude in the relationship between Subjective Norm and Intention is significant, as the Sobel test show z-value of 6.408 and p-value=0.000.

H2e: The relationship between Perceived Behavioral Control and Intention did not hold, as t-value=0.030 and p-value=0.488.

Therefore, the structural model is adequately assessed in terms of effect size, path coefficients and hypothesis testing.

#### **4.9 Supplementary Analysis**

This section includes some additional analyses that were recommended by various scholars in the past. In particular, supplementary analysis on moderator variable, statistical power analysis, effect size ( $Q^2$  for predictive validity) and model fit measure are analyzed.

##### **4.9.1 Classification of Moderator Variable**

It has been evident from past studies that some authors classified moderator variable into pure and quasi moderators while many SEM users may not interpret moderators in such classification. Such classification of moderator variable was proposed by Sharma, Durand, and Gur-Arie (1981). The theoretical background of this



classification holds that if a moderator has no significant direct effect on the criterion variable but has significant interaction effect in the moderated relationship, then it would be pure moderator; on the other hand, if a moderator has both the significant effect on the criterion variable and significant interaction effect as a moderator in the relationship between the predictor and the criterion, then it would be quasi-moderator (Sharma et al., 1981). Consequently, if a suspected moderator does not have significant moderation effect but shows significant direct effect on the outcome variable, then it would be a potential candidate of independent variable.

It appears from Appendix L that for Trust as moderator, it has significant direct effect ( $t= 7.049$ , significant at alpha 0.01) as well as significant interaction effect on the outcome variable ( $t=2.320$ , significant at alpha 0.01). Therefore, based on definition as discussed earlier, Trust is a quasi-moderator (Sharma et al., 1981). Subsequent evaluation of Situational Constraints as moderator shows that it has significant direct effect on outcome variable ( $t=5.692$ , at alpha 0.01), whereas it does not have significant effect as moderator ( $t= 0.565$ ). Therefore, 'Situational Constraints' deserves scrutiny as an independent variable in the research context.

#### **4.9.2 Power Test**

The test for statistical power is defined as the probability of rejecting a null hypothesis when the alternate hypothesis is true (Cohen, 1988). The current study uses the online calculator developed by Daniel Soper to calculate statistical power of an analysis based on sample size and  $R^2$  (Soper, 2016a). Traditionally, most behavioral research indicated that a value of 0.80 is appropriate statistical power outcome (Cohen, 1988). The study estimated the power of 0.99 for the proposed model, with a sample size of 416 (n), 0.05 significance level and  $R^2$  of 0.380. The size of estimated statistical

power surpasses the acceptable cut-off value of 0.80. Therefore, it may be inferred that the study yields significant outcomes and the associations are satisfactory.

#### **4.9.3 Predictive Validity**

Another supplementary analysis that would be useful in PLS-SEM analysis is the  $Q^2$  effect-size, showing the strength of predictive validity (Chin, 1998). This measure exhibits how well the empirical data may be replicated with the proposed model and the partial least-square parameters (Fornell & Cha, 1994). Using the blind-folding option with the default omission distance of 7, the current study attained a cross-validated redundancy  $Q^2 > 0$  for the concerned constructs, which is indicative of a highly predictive model (Hair et al., 2014). The results are shown in Appendix M.

#### **4.9.4 Model Fit Measure**

Some of the model fit measures that were previously used, were heavily criticized for their lack of universal measure. Therefore, recent authors recommended a new criteria to evaluate PLS-SEM model fit (Henseler et al., 2016). The model fit may be evaluated by using SRMR (Standardized root mean square residual) value from the bootstrapped results (Ringle et al., 2015). Although a value of 0 would indicate a perfect fit, any value below 0.10 is considered acceptable (Henseler et al., 2014). Bootstrap output revealed the SRMR value of 0.080 ( $p$ -value  $< 0.05$ ) for composite model, which is below the cut-off value of 0.10. Therefore, the model fit may be adequately demonstrated.

## CHAPTER FIVE

### DISCUSSION AND CONCLUSION

This section revolves around the findings and synthesizes the results with theoretical and practical implications. Theoretical conformity of results or lack of conformity, if any, is discussed at length. Particular cases of conformity are examined in relation to past findings by other researchers, as well as the relevance of results to the context of the research. The mere conformity of current findings may not necessarily be treated as a full conformity to the theoretical framework without first giving a critical look at its composing components and its implication under the current research. By the same token, the mere non-conformity of findings may not necessarily negate the research framework as similar attentive details need to be provided both in terms of theoretical and practical background. Therefore, this chapter will critically look into the findings and synthesize the findings with theoretical and practical context.

#### 5.1 Recapitulation of the Study

The study is aimed at exploring the determinants of organic food purchase behavior in Bangladesh, based on the modified Integrated Behavior Model (IBM). Purchase behavior means a composite of actual buying behavior comprised of self-reported purchase frequency, percentage of organic food consumption and intensity of purchase volume. Organic foods have been defined as foods grown without synthetic chemicals, fertilizers, irradiation, pesticides, and not from any genetically modified seeds or sources.

The research is centered on five specific objectives. The first objective is to measure the relationship between organic food purchase intention and actual purchases by

Bangladeshi consumers. The second objective is to measure the relationship between habit and actual purchase behavior of organic foods. The third objective is to measure the effect of Situational Constraints and trust on the relationship between Purchase Intention and Purchase Behavior. The fourth objective is to explain the relationship and influence of Attitude, subjective norm and perceived behavioral control on Purchase Intention of organic foods. The fifth objective is centered on evaluating the influences of Subjective Norm on Attitude and on purchase intention; and mediating effect of Attitude on the relationship between Subjective Norm and Purchase Intention. In order to achieve these objectives, a quantitative research design was adopted, to be modeled and analyzed by partial least-square structural equation modeling technique.

Field survey was conducted and 416 samples were found usable for final analysis. Both the measurement model and structural model was specified, and path coefficients were assessed along with t-values for significance tests. Results, including moderator and mediator effects, showed that all the relational paths were significant except two in the model, namely Perceived Behavioral Control to Intention and moderating effect of Situational Constraints in the relationship between Intention and Behavior. The  $R^2$  of the model was 0.38, which may be termed as moderate.

## **5.2 Discussion**

This section elaborates on the interpretation of study findings and relates to research questions of the investigation. The results are interpreted in terms of contextual relevance along with theoretical and practical aspects of study findings.

### **5.2.1 The Intention-Behavior Relationship**

Related to the first research question, the study found a significant influence of intention on behavior, which corroborates many past findings in this regard (Amran & Nee, 2012; Padel & Foster, 2005; Vermeir & Verbeke, 2008; Yin, Wu, Du, & Chen, 2010). In fact, based on the proposition by Ajzen (1991) that intention is predictive of behavior, as well as overwhelming empirical evidence that supported such proposition, many past studies in the organic food context took behavioral intention as a proxy of studying behavior, and not the actual purchase behavior (Mostafa, 2006; Pagiaslis & Krontalis, 2014; Yadav & Pathak, 2016). Therefore, not all studies may be compared with the current study despite many of the past studies used the TPB (or its variants) in explaining organic food related behavior. Consequently, comparing with the past studies that investigated actual purchase behavior, the overall evaluation of the intention-behavior relationship of the current study shows that the results conform to previous studies in this regard (Carrington, Neville, & Whitwell, 2014; Ittersum, 2011; Nuttavuthisit & Thøgersen, 2015).

However, without any of the exogenous variable affecting behavior, the mere influence of intention on behavior appears to be low. The low yet significant explanatory influence of intention on behavior means that although intention is

influential on actual purchase behavior, other variables might be at play that need further exploration. It also confirms the early notion by past researchers that intention-behavior inconsistency exists in the organic food behavior context (Zepeda & Li, 2007). However, such inconsistency is not unexpected in behavioral research at all. In fact, the intention-behavior relationship as is found by the current study, actually conforms to many past studies that reported significant yet relationship of low magnitude in models that dealt with predicting or framing consumer behavior in various contexts (Chatterjee, Singh, Goyal, & Gupta, 2014; Honkanen, Verplanken, & Olsen, 2006; Petrovici, 2004).

In a meta-study investigating the intention-behavior relationship under the TPB model, Sheeran (2002) found that intention accounts for about one third of variation in actual behavior. The current study may not conform to this finding which might be attributable to the peculiarity of the cross-sectional sample characteristics under Bangladesh context. However, another approach of looking at this relationship may be explained by evidences as put forward by Danner, Aarts, and de Vries (2008), where authors posited that existence of habit weakens the intention-behavior relationship. The current study found habit to be a significant predictor of purchase behavior, therefore, weaker intention-behavior relationship may be expected in this particular context of habitual significance. Accordingly, de Bruijn et al. (2007) found similar results that stronger habit weakens the influence of purchase intention on actual purchase behavior in the food behavior context.

Overall, the study conforms to previous investigations in the organic food context that behavioral intention significantly affects actual purchase behavior.

### 5.2.2 The Role of Habit

The analysis shows that habit has positive and significant influence in explaining behavior in addition to behavior already explained by intention and its antecedents, before introducing any other exogenous variables to purchase behavior. This additional influence was found to be statistically significant. Therefore, the key proposition of adding extra variables beyond the TPB constructs apparently become logical while attempting to explain actual purchase behavior. In fact, this also corroborates the previous findings that habit should be viewed as independent of intention, thus directly affects the actual behavior (Sheina Orbell & Verplanken, 2010).

In the context of organic food consumers, Honkanen, Verplanken, and Olsen (2006) specifically suggested the role of habit as a determinant of purchase behavior. Therefore, the significance of habit as a predictor to explain the variation in actual behavior is justified and corroborates the above suggestion. How about the degree of conformity of current findings with the past findings on this variable? Conner and Armitage (1998), while reviewing past research on the usage of the TPB (Ajzen, 1991), indicated that the inclusion of the construct *habit* accounted for an additional 13% (on average) of the variance in behavior. Based on this average, the current findings that reported the additional habitual influence on behavior can be compared. Although the current result of habitual influence is lower than the reported average of past studies, this can be attributed to the particular characteristics of geographically concentrated samples and time-bound peculiarity of cross-sectional survey of the concerned population. It may also be explained with some degree of extrapolation that since organic food is relatively a new phenomenon in Bangladesh, people are still

in the process of being habituated in a regular purchase occasions. Empirical substantiation of such an assumption may be found in a cross-cultural study by Green and Langeard (1975) who posited that customers may show less habitual behavior for new food products. Therefore, it may be inferred that, while habit is a significant determinant of organic food purchase behavior, the relational strength between habit and purchase behavior is still at a growing stage.

Another way of viewing habit in the food shopping behavior may be explained by what Anić and Radas (2006) termed as “routine” behavior. They posited that, particularly to food and grocery shopping behavior, while mall shopping is rather hedonic and entertainment-oriented behavior, grocery shopping is more a routine and utilitarian-oriented shopping behavior. According to Lally (2010), food shopping may be termed as low involvement behavior, that usually exhibits habitual behavior while shopping for such products. Therefore, based on these inferences, it is justifiable that habit is a significant determinant of organic food purchase behavior.

The significance of habit construct also substantiates the past findings that mere positive attitude may not necessarily be enough to ignite a purchase behavior unless habitual elements influence the behavior. For example, Tarkiainen and Sundqvist (2009) identified that people may not buy enough organic food even if they maintain positive attitude, unless the ideological attitudes exist as habits. Kollmuss and Agyeman (2002) also demonstrated that mere environmental concern may not be enough for consumers to buy green products unless behavior is significantly influenced by habit.



It appears that habit plays a significant and plausible role in explaining organic food purchase behavior.

### **5.2.3 Direct and Moderating Effect of Trust**

Both the direct effect of trust on actual behavior and the moderating effect on the intention-behavior relationship were found to be significant. Evidently, the direct and moderating effect of trust on behavior account for additional variation in behavior, while introducing no other exogenous variables except intention. The effect of trust is also prominent even when other exogenous variables are introduced, therefore, trust appears to be a dominant determining factor in actual purchase behavior.

The current study investigated trust by looking into the direct effect on actual purchase behavior and the moderating effect on the relationship between purchase intention and actual purchase behavior. The significance of these effects corroborates the past findings that trust has been a significant predictor of organic food purchase behavior. For example, past researchers indicated that trust has been a significant determinant of organic food purchase behavior since such products are classified as credence products (Fernqvist & Ekelund, 2014; Janssen and Hamm, 2012; Nuttavuthisit & Thøgersen, 2015). Credence products are those whose credibility attributes or claimed qualities are expensive or difficult to evaluate even after purchase has been made (Darby and Karni, 1973). As a result, before making a purchase decision of a credence product like organic foods, customers would look for more information like official certification, brand name, country of origin or the reputation of the seller (Dekhili & Achabou, 2015; Janssen & Hamm, 2012; Schleenbecker & Hamm, 2013). Some descriptive studies conducted under

Bangladesh context suspected that trust could be a factor in determining purchase behavior as there is no official certification requirement for domestic sale of organic foods (Mamoon & Haque, 2013; Shabnam, 2013). The credence issues have been so critical for organic foods that consumers, even in developed countries where organic certification is mandatory, may often lack confidence in the certification and logos (Janssen & Hamm, 2012). Therefore, it is plausible that there are trust issues among organic food buyers in Bangladesh. Recent studies conducted under Asian context also confirmed these findings as evidenced by Akaichi, Nayga Jr, and Gil (2012) and Teng and Wang (2015) that consumers highly value credence factors of organic foods. Therefore, the current empirical study substantiates the significance relationship between trust and purchase behavior of organic foods.

The significant and positive moderating effect on the positive relationship between intention and behavior is also noteworthy. It means that depending on the strength of trust consumers may have on particular organic foods, their higher trust level may direct their intentional strength to a higher level of actual behavior, when compared to the same level of intention of consumers with lower level of trust. This is a critical finding because it has positive effect on directional change for consumers of lower intentional strength to higher level of actual purchase. Theoretically, this finding is in line with proposition by Reisch and Thøgersen (2015) that trust plays a significant role as a moderator in explaining behavioral gap in sustainable consumption. Klöckner (2012) also posited that trust would act as a moderator in the relationship between intention and purchase behavior dimensions. However, despite such theoretical underpinning, only a few studies empirically tested this relationship in the organic food context; therefore, the results of the current study cannot be extensively

compared. An empirical study conducted by Tung et al. (2012) found that trust significantly moderates the intention-behavior relationship among organic food consumers in Taiwan. Similarly, Osterhus (1997) reported that trust significantly moderates the consumers willingness to respond to marketers' attempts to market environmentally sustainable products.

It may be noted that, although trust has been found significant as a moderator in determining behavioral intention, the limitation remains that past researchers who investigated trust as a moderator did not investigate actual purchase behavior at all (Lobb, Mazzocchi, & Traill, 2007; Teng & Wang, 2015). Therefore, many past researchers tested the moderating relationship of trust with respect to intention only, despite there were alternative theoretical possibilities. As Reisch and Thøgersen (2015) pointed out that despite the importance of "trust" in the context of sustainable consumption, it has not been studied enough to explain the behavioral gap.

In summary, it may be inferred that trust not only plays a critical role in actual purchase behavior, but also exhibits its moderating role on the relationship between intention and behavior.

#### **5.2.4 Direct and Moderating Effect of Situational Constraints**

While the direct influence of situational constraints was found significant on actual purchase behavior, the moderator effect of situational constraints in the relationship between intention and behavior was not found to be significant. The direct and moderating effects of Situational constraints account for variation in behavior, while introducing no other exogenous variable except intention. It may be mentioned that the surveyed respondents were verified as decision makers before they were surveyed. Therefore, they were actually buying organic food no matter how weak or strong their intentions were. Results indicate that their actual behavior on the spot was more influenced directly by the situational variables rather than changing the direction of pre-conceived intention to purchase. As a result, it is evident that situational constraints may not significantly influence the intention-behavior relationship.

It is also notable that situational constraints came up with a negative coefficient value, which is expected because the relationship between situational constraints and purchase behavior is expected to be negative, i.e., the higher the situational constraints, the lower the actual purchase behavior. This findings go in line with previous studies that found situational variables as a significant determinant of purchase behavior (Carvalho et al., 2010; Hines et al., 1986). The significant direct effect of situational constraints on purchase behavior, with a negative coefficient value implies that situational variables like high price, low availability, lack of companionship and greater store distance negatively affects the actual purchase behavior; however, the moderating effect being insignificant, the absence of situational constraints does not necessarily translate intention to higher level of behavior. Instead, it implies that people facing higher situational constraints and

people facing lower situational constraints would not behave differently as far as the intention-behavior relationship is concerned.

In other words, it indicates that situational constraints may act as an inhibiting factor for actual behavior, thus prevalence of situational constraints may lower the level of actual purchase behavior. However, the lack of situational constraints does not essentially intervene into the low intention and transform it to higher level of purchase behavior. Although this finding is not in line with the hypothesized moderating effect of situational constraints in the intention-behavior relationship, such an outcome may occur if situational constraints do not have enough interaction effect with intention, or lack substantial influence in the intention-behavior relationship. In fact, according to Hoyer and MacInnis (2008), it is easier to predict behavioral intention rather than to predict actual behavior because many situational variables would cause a consumer not to engage in an behavior, leading to a difference in intention and behavior. It clearly indicates that situational variables are more influential on actual behavior rather than on purchase intention. Therefore, being a weak predictor of intention and a stronger predictor for behavior, situational variables might have shown a non-significant interaction effect in the relationship between intention and behavior and a significant direct effect on actual behavior.

There could be other reasons for non-significance of situational constraints as a moderating variable. The non-significant effect may be seen in terms of relational incongruity between how the specific components of situational constraints are perceived by consumers as determinants of intention and how the same constraining indicators are viewed as predictors of behavior. For example, literature suggests that intention to purchase organic food is primarily influenced by health motivation, along

with environmental and other affective concerns (Gottschalk & Leistner, 2013; Hughner et al., 2007; Kesse-Guyot et al., 2013). Therefore, it is plausible that consumers' intention is independent of constraining components like price and availability, rendering weak interaction effect between these two components of situational constraints and purchase intention. In fact, the current study conforms to past studies that found consumers were willing to pay more or were already paying more while buying organic foods (Gil et al., 2000; Loo, Caputo, & Nayga, 2015; Shafie & Rennie, 2012; Voona et al., 2011). Such sample characteristics denote that high price may not have strong interaction effect with high intention score to turn the moderating effect significantly lower on behavior, as price is not be a constraining factor for those who are already buying at high price.

Another constraining factor, availability, is subject to consumers' momentary discovery on the shopping spot. On the other hand, intention is a pre-conceived construct before actual behavior takes place at the shopping spot. Thus, the momentary discovery of non-availability, being a situational factor, is expected to have more impact on actual behavior rather than influencing the pre-pondered purchase intention (Hoyer & MacInnis, 2008). In contrast, since food purchase is a low involvement activity (Lally, 2010), there is a tendency among consumers to show some routine or repetitive habitual behavior. Hence, the momentary increase in perceived availability (i.e., lowering the situational constraint) may not necessarily influence pre-existing intention, but would rather influence the actual behavior in the shopping situation. Previous studies also corroborate such findings as Arvola et al. (2008) and Persson (2013) found that perceived availability would not significantly affect consumers' purchase intention of organic foods. Later, Olivová (2011) also

confirmed that availability and price did not significantly influence purchase intention of organic food consumers. Instead, perceived availability affects purchase behavior and consumption of organic foods (Ergin & Ozsacmaci, 2011; Lea & Worsley, 2005). Therefore, the weak interaction effect as may be inferred from the theoretical as well as empirical evidence, situational constraints appear to be non-significant as a moderator variable between intention and purchase behavior.

### **5.2.5 Attitude and Purchase Intention**

Attitude exhibited the highest impact on intention among the three main constructs of the TPB and/or The Integrated Behavior Model. The higher path coefficient of Attitude to Intention implies a higher influence of attitude when compared with the path coefficients of Subjective Norm to Intention and PBC to Intention respectively. This goes in line with the most previous studies that found Attitude as the most dominant influencer of behavioral intention in food behavior studies (Chen, 2007; Povey et al., 2000; Saba & Messina, 2003; Sparks & Shepherd, 1992).

Attitude is primarily viewed as a positive or negative disposition towards any object or person (Ajzen & Fishbein, 1980). The current study went in-depth to investigate this important antecedent of intention by operationalizing it as a second-order construct, viewing it as a composition of four distinct dimensions. Such an operationalization has two distinct advantages. First, higher-order constructs capture the relative importance of dimensions in the overall construct; second, higher order constructs results in model parsimony as fewer relationships need to be tested. Based on literature review, four types of attitudes were identified: health attitude, environmental attitude, cognitive attitude and affective attitude.

In line with previous researchers, the current study also found that positive health attitude towards organic food is a significant dimension for the attitude construct (Magnusson et al., 2003; Padel & Foster, 2005). So are the cases with other three dimensions, namely environmental attitude, cognitive attitude and affective attitude (Arvola et al., 2008; Dean et al., 2008; Magistris & Gracia, 2008). However, out of these four dimensions, affective attitude appears to be the strongest component of overall attitude construct. The second place goes to environmental attitude in the overall Attitude construct. Cognitive attitude and health attitude follows the rank respectively.

Although the significance of all these dimensions supports the findings of previous studies, the lower loading of health attitude is little contradictory. Previous studies emphatically reported health concern as the most important reason for positive attitude towards organic foods (Magnusson et al., 2003; Padel & Foster, 2005; Zanolli & Naspetti, 2002). However, there are other researchers who reported no or weaker effect of health consciousness in attitude formation (Brunsø & Scholderer, 2001; Michaelidou & Hassan, 2008; Tarkiainen & Sundqvist, 2005). Findings of the current study move in line with the latter stream that health attitude towards organic foods, even though significant in forming positive attitude, is less important than affective, environmental and cognitive attitude.

From another perspective, unlike the majority of previous investigations, these findings may suggest that while consumers are cognizant and aware of positive health effects of organic foods, they associate more importance to emotional (affective) and environmental benefits of such products. It could also be the case that consumers may not be confident about perceived health benefits because of trust issues on various



stakeholders in the organic food industry. For example, in the Asian context, similar inference was found in Malaysia where consumers had reservations about trustworthiness of information about food supplements (Noor, Yap, Liew, & Rajah, 2014).

The finding that environmental attitude has substantial role in the Attitude construct may also lead to the rebuttal of previous researchers' claim that people engage in eco-friendly behavior when their personal benefits are served better than overall society's benefits (Alexander et al., 2015). The current study finds that, environmental attitude is much stronger than other personal attitude components like health attitude. Since strong and positive environmental concern may broadly be seen as an altruistic concern (i.e., concern for others) rather than as a self-contained personal concern like health, it may be stated that attitude towards organic food is strongly influenced by altruistic reasons besides other personal reasons. According to Griskevicius, Tybur, and Van den Bergh (2010), eco-consumers are not always motivated by self-serving interests, rather they may be driven by altruistic concerns. Similar influences of eco-concerns were seen in other green industries in the Asian context as well (Noor et al., 2012).

Further exploration of literature reveals that the higher level of environmental concern may be linked to the fear about consequence of global warming and sea-level rise that might have devastating effect on Bangladesh in future. For over a decade, Bangladesh has been consistently ranked high among countries that would be severely affected by global warming and sea-level rise. According to Global Climate Risk Index 2016, Bangladesh has been ranked sixth out of top ten countries due to its vulnerability to global weather changes (Sönke, Eckstein, Dorsch, & Fischer, 2015). There are reports

that if sea-level rise cannot be checked, the two countries that would be affected the most are Maldives and Bangladesh (Ali & Huq, 1989). The discussion of such dangers has been widespread in the local and global media as well (Sadath, Krott, & Schusser, 2013). It is plausible that organic food consumers, coming from a higher educated segment of the society, may have access to such understanding of future dangers. According to Lee et al. (2015), countries having higher rate of education has higher degree of climate-change awareness than countries having lower rate of education. Therefore, it is of no surprise that one of the most dominant components of Attitude construct is made of environmental attitude.

The emotional dimension of attitude is also noteworthy, as the affective attitude tops the list of four dimensions. In an ethnographic research investigating the role of food in emanating human emotion among Bangladeshi consumers, Mookherjee (2008) concluded that foods play a mnemonic role and is capable of mobilizing emotion to the surface, even to the extent that it may connect or isolate people based on what they eat. The current study empirically substantiates that food related emotional attitude is quite applicable in the context of organic food as well. Similar findings were reported by other researchers who investigated affective attitude and reported statistical significance (Arvola et al., 2008; Dean et al., 2008).

In addition to the statistical significance of Attitude on Intention, the consequential modeling paths show that Attitude could play the role of a mediator in the Subjective Norm and Intention relationship. This is rather interesting because only a few studies investigated this relationship in food related behavior (Noor et al., 2014). The mediation test shows a significant mediation effect of Attitude in the relationship between Subjective Norm and Intention. Since this mediation effect deserves

explanation in relation to Subjective Norm as well, the implication of this relationship is jointly discussed with the role of Subjective Norm in the next section.

Therefore, it may be evident that all the four dimensions have important bearing on the Attitude construct that may have captured a clearer picture of its composition as well as its overall significant influence on purchase intention.

### **5.2.6 The Role of Subjective Norm**

Subjective norm has been viewed as a second order construct, comprising of injunctive norm and descriptive norm. Injunctive norms refer to what is usually approved of, i.e., what ideally ought to be done; on the other hand, descriptive norms refer to what people do in reality (Lapinski & Rimal, 2005). The advantage of second-order construct is twofold. First, higher-order constructs capture the relative importance of dimensions in the overall construct; second, higher order constructs result in model parsimony since fewer relationships need to be tested. Both the Injunctive Norm and Descriptive Norm loaded significantly on the overall Subjective Norm construct. The higher order operationalization appears to have captured the relative importance of dimensions in the overall construct, leading to a high level of discriminant validity. Such operationalization might have increased the validity of the relational significance and subsequent interpretation from theoretical and managerial perspective.

In the proposed model, Subjective Norm has been viewed as an exogenous variable having two influential relationships in the model. The first one directs the influence towards Attitude, whereas the second one directs the influence towards intention. Both the relationships were found to be significant in the proposed model. As a result,

the relational paths exhibit that Attitude also functions as a mediating variable in the relationship between Subjective Norm and Intention. The coefficients of Subjective Norm-Attitude relationship and Subjective Norm-Intention relationship indicate that, although both the relationships are significant, the second relationship shows a higher level of strength. The mediating effect was significant, with the presence of partial mediation. Further elaboration on this relationship is presented below.

The empirical testing of relationship between subjective norm and attitude in the organic food context has been relatively novel considering the scant studies in this regard. However, the effect of subjective norm on attitude has long been speculated in other behavioral context under the TPB framework. Surprisingly, it was not long that such effect was empirically examined in the organic food context recently (Aertsens et al., 2011). The earlier research by Choo et al. (2004), Tarkiainen and Sundqvist (2005) and later studies by Smith and Paladino (2010) and Noor et al. (2014) in the food context may have immense inspiration on succeeding researchers. It seems that favorable or unfavorable attitudes towards organic foods were induced by the opinion of significant people in a particular social set-up. Therefore, those having positive pre-disposition towards organic foods, induced others' attitude in this attitude formation process.

This significant relationship between subjective norm and attitude is reasonable as Ryan (1982) reported that normative beliefs affects formation of attitude, because it is possible to form attitude by having information from an expert or knowing the expectations of significant people around an individual. Consequently, Choo et al. (2004) concluded based on investigation of food related behavior in India, that subjective norm would have significant effect on attitude in certain cases, specifically

in the case of new food items. Since organic food is fairly a new phenomenon in Bangladesh, such a relationship may not be unexpected. As already noted, the relationship between attitude and purchase intention is also significant, which is generally expected in organic food behavior studies (Smith and Paladino, 2010; Aertsens and Verbeke 2009).

Subjective norm was also found to be significant as a predictor of intentions. As a result, the mediating effect of Attitude in the relationship between Attitude and Intention has been partial. This corroborates previous studies that subjective norm is an important determinant of organic food purchase intention (Dean et al., 2008; Teng & Wang, 2015). Another view of Subjective Norm may shed some more light on this relationship. According to Van der Hagen (2000), while attitudinal elements could be considered as personal determinants of organic food purchase intention, subjective norms may be considered as social determinants of organic food purchase intention. Perhaps, as some researchers indicated, the grouping by Hofstede (1984) of many western societies under *individualistic* orientation might mean that these cultures were more susceptible to individual attitudinal dimensions; whereas in many Asian countries there could be greater impact of subjective norms on purchase intention and/or behavior as most of the Asian countries are primarily viewed under *collectivist* orientation (Al-Swidi et al., 2014). Bangladesh is also classified under collectivist culture, therefore, the positive and significant effect of subjective norm on intention is expected.

In summary, it may be evident that the relationship between Subjective Norm and Attitude, the partial mediating effect of Attitude in the relationship between Subjective Norm and Intention, and the relationship between Subjective Norm and Intention have been significant for substantive and valid reasons.

### 5.2.7 Influence of Perceived Behavioral Control

Perceived behavioral control was found to be non-significant. However, such results were not unusual for organic food behavior research. Similar findings were mentioned by past researchers that perceived behavioral control might not be significant for organic food consumers (Ščasný et al., 2012; Tarkiainen and Sundqvist, 2005). It was observed that PBC would not inevitably result in a higher behavioral intention since the fact that a person is capable of conducting a behavior may not automatically mean that he/she would intend to do so (Fishbein & Ajzen, 2010). It was also observed that some studies may find that one or more variables were insignificant in a particular cross-sectional sample; however, that does not mean that the model essentially becomes invalid (Fishbein & Ajzen, 2005). This peculiarity could be attributed to the characteristic of the sample concerned in a particular time and situation.

However, the non-significance of perceived behavioral control may have other consequences. It means that the ease or difficulty in purchasing organic foods may not act as a significant determinant of purchase intention. In a large-scale study (n=1054) conducted by Zagata and Lostak (2012), it was reported that out of the three main constructs of the TPB, PBC had the weakest effect on behavioral intention to purchase organic foods. According to Guido (2009), many organic food behavior studies found perceived behavioral control insignificant under the TPB framework because most of the respondents surveyed were actually buying organic foods due to various reasons, thus their perceived level of difficulty in buying organic foods did not affect their intention to buy. Under Bangladesh context, this might mean that despite the

difficulty associated with purchasing organic foods like availability and price (Mukul et al., 2013), consumers who intend to buy organic foods may not actually perceive these difficulties as retracting factors in determining their purchase intention. Considering the consistency of PBC not being significant for the organic food sector, some past researchers went further and entirely excluded this construct from their models (Arvola et al., 2008; Saba & Messina, 2003).

Another reason for non-significance of PBC could be the type of respondents covered in the study. The behavioral research design oftentimes calls for surveying the “decision-makers” as researchers are interested to find the “determining factors” behind purchase motives (Krystallis et al., 2006). The same applies to the current study as it was probed before filling-in the questionnaire whether the person is able to make food buying decisions on his/her own. As a result, it is expected that the sample consists of respondents who was supposed to have substantial control on his/her decision. In addition, by looking at the response pattern, it appears that there might be a tendency of respondents to respond around the central answer score without much variation, with slightly positive kurtosis and skewness. Such invariability might statistically lead to non-significance, which is actually representative of the sample. In other words, it elaborates the fact that no matter how much control a person feels to have on his/her decision in buying organic foods, he/she has the behavioral intention which is independent of the level of behavioral control.

The non-significance of PBC may also be linked to the limited varieties of organic foods that are being sold in the market, leaving customers with a few alternatives to choose from. Recent studies explored that customers in Bangladesh really do not have

much choice when it comes to organic food varieties, since sellers' product-depth is very low in most cases (Ahmed & Rahman, 2015). According to Liu and Kwon (2013), PBC may become insignificant in situations where consumers are left with narrow set of choices, thereby leading customers to believe that they have little control on their organic food choices. Such a relationship between PBC and Intention may be evident in the organic food sector in Bangladesh as similar narrow-choice situation is prevalent.

This result also opens up the scope for another research issue. PBC being a non-influencer on intention, and other antecedents explain only about one-third of variation in Intention, there must be other unexplored factors that are influencing the rest of the behavioral intention. Therefore, more research may be needed to identify antecedents of behavioral intention.

### **5.3 Contributions of the Study**

It appears that the study has a number of theoretical and practical contributions to the body of knowledge. The following sections elaborate on these contributions.

#### **5.3.1 Theoretical Contributions**

First, the study followed a novel research framework modified from Integrated Behavior Model that was originally proposed by Montano and Kasprzyk (2008) to study health protective behavior. Past investigations indicated that the model was hardly examined in explaining food purchase behavior. A systematic literature exploration shows that the model went almost overlooked by food behavior



researchers because it was not meant for explaining food related behavior. Enormous amount of past publications based on IBM framework was overwhelmingly linked to health behavior and health intervention research. Further review of literature indicated every possibility of using this model for food behavior research. The empirical evaluation of the model shows adequate fit statistics with sufficient level of statistical power. Therefore, the current study may have theoretically contributed to the body of knowledge by proposing and empirically examining the modified framework of IBM.

Second, the study partly focused on behavior-intention gap that are prevalent among consumers and identification of additional variables based on the proposed model to account for more variation in explaining the gap. For example, habit has been viewed as a potential predictor of purchase intention and actual behavior (Rauyruen, Miller, & Groth, 2009), whereas only a few studies actually examined this variable under organic food context (Tarkiainen & Sundqvist, 2009). This has also been the case in studies done under the Bangladesh context. The empirical evaluation shows that the construct is significant in explaining purchase behavior, thereby added some effect in explaining the Intention-Behavior gap. Therefore, inclusion and evaluation of Habit in the model may be considered an important theoretical contribution.

Third, the proposed model contains trust and situational factors with a view to finding the interaction effect with purchase behavior. Extant literature shows that such simultaneous effect has rarely been examined so far. Although fragmented efforts can be traced in various studies (Carvalho et al., 2010), simultaneous inclusion of these two variables to examine their moderator effects is not only rare in organic food studies, but also in consumer behavior literature. Results show that while the moderator effect of Trust on the relationship between Intention and Behavior is significant, Situational Constraints do not pose any moderating effect on the same

relationship. Inclusion of moderators also appears to explain the Intention-Behavior gap to some extent. Because of such simultaneous inclusion of multiple moderators, the abstraction of reality may be better achieved at the cost of sacrificing simplicity. Since theoretical models are aimed at capturing complex reality in a relational framework to the greatest extent possible, such simultaneous study of multiple moderators may have theoretically contributed to the existing body of knowledge in understanding complex behavior better.

Fourth, while higher-order Attitude constructs are not uncommon in literature, the simultaneous study of cognitive and affective attitude has been reported to be scant in organic food studies (Aertsens & Verbeke, 2009). In addition to the lack of simultaneous inclusion of both the cognitive and affective attitudes, it was found that affective attitude alone was rarely studied in organic food behavior context. In addition, two more dimensions of attitude emerged, namely health attitude and environmental attitude that appeared to be important in determining the overall attitude for organic food purchase intention. As a result, a four-dimensional second-order Attitude construct was examined in the proposed model, which appeared to be empirically valid and significant. It means that purchase behavior of consumers in Bangladesh is significantly influenced by their attitude that is composed of environmental, health, cognitive and affective attitude. Such operationalization may have contributed immensely since it captures the most important dimensions of Attitude in an exhaustive way.

Fifth, although subjective norm has been widely studied in food behavior research, the higher order operationalization has been scant as well. Past studies showed a trend of considering only Injunctive Norm, whereas leaving Descriptive Norm understudied. Therefore, Subjective Norm has been viewed as a second order construct comprising

of Injunctive and Descriptive norms, which appears to be an empirically valid and statistically significant. Therefore, such an operationalization may have theoretically contributed by referring to a complex yet measureable and exhaustive construct of Subjective Norm.

Sixth, although past scholars suspected a relationship between subjective norm and attitude, the empirical investigation has been scant in the organic food behavior literature. Only a few countable studies empirically tested such a relationship while calling for further research in this regard (Al-Swidi et al., 2014). Thus the current study is aimed at fulfilling this gap by proposing this relationship in the model, thereby conferring theoretical value in the study of organic food purchase behavior.

### **5.3.2 Practical Contributions**

Theoretical contributions and empirical findings have managerial implications as well. A number of customers insights may emerge that are discussed below.

First, knowing customers' background provides immense advantage to marketers. Sometimes segmentation and communication decisions are based on demographic profile of consumers. The study provides a clear demographic profile of who are buying organic foods. It appears that organic food buyers are mostly upper-middle income consumers, predominantly female with higher education and income. It confirms previous studies that reported similar demographic profile of organic food consumers. Such information may immensely help managers in defining market segment, as well as designing and implementing strategy decisions.

Second, understanding customer profile and connecting the same to antecedents of intention and to predictors of purchase behavior may provide important insights for managers. It appears that antecedents of intention moderately explains the variation in

Intention, therefore, the influence of antecedents may be strengthened by looking into their components first. For example, it appears that Affective attitude has the highest strength in the Attitude construct, followed by Environmental, Cognitive and Health attitude. Therefore, priorities may be set while designing promotional communication. Emotional and environmental appeals may work better to induce attitude strength among Bangladeshi consumers. The contradictory findings that health attitude has the lowest score in the attitude construct may be viewed jointly with significant Trust construct affecting Behavior. Since Trust appears to be an important and strong predictor of Behavior as well as a moderator in the relationship between Intention and Behavior, it seems that consumers have concern on genuineness and safety level of organic foods. Although people may expect that organic foods are safe, but their attitude does not show a substantial score on the overall construct, referring (most likely) to trust issues related to organic foods. Therefore, managers may act upon this insight that unless trust issues can be effectively solved, it is better to go for emotional and environmental appeal when communicating to organic food buyers in Bangladesh.

Third, understanding the influence of situational factors may provide immense value to managers. Since situational factors are primarily contingent or contextual factors to customers, marketers may identify the positive situational cues that can be managed to elicit more positive response from consumers. For example, the study found that the situational factors do not moderate the relationship between Intention and Behavior, although the direct simple effect of Situational Constraints is significant. It means that managers must care about providing positive situational cues like availability, attractive price and convenience to induce more purchase; however, if

their target is to raise Intention, they need to work on antecedents of Intention rather than controlling for Situational Constraints.

Fourth, habit as a predictor of behavior may have conferred some practical implications for managers. As habit has been significant and positively linked to the purchase behavior, marketers need to design programs that may lead to repeat purchase in such a way that there might be an increase in the number of habitual customers. Managers need to be aware that organic food market will soon be competitive as over one hundred well-rounded outlets are selling organic foods all over the country. The rising competition in this sector may call for developing a loyal customer base for sustained business in future. Although habit shows a smaller coefficient as compared to other predictors, it is found to be significant. It may also mean that customers are still at a low level of habit, where a set of habit enhancement programs may gradually increase their positive purchase behavior. At this point, both the short-term and long-term measures may be relevant. Short term measures may be aimed at increasing short-term store traffic and sales promotion so that people get used to repeating their shopping rounds to organic food stores. Long-term program may consist of membership card scheme or other loyalty programs to encourage long-term repeat purchase.

Fifth, Subjective norm was found to be significant, therefore, marketers need to be aware of how opinion leaders as well as social relationships are managed in a consumer driven market. The positive and significant influence may imply that managers need to account for social dynamics of consumers in the management of relationship and influence thereof on intention. Although the influence of subjective norm on intention was lower than the influence of attitude, both the dimensions of subjective norms highly contributed to the construct validity. Therefore, the lower

effect of Subjective norm as compared to Attitude may be taken as seriously as any other antecedent of intention.

The importance would clearly be seen when the effect of Subjective Norm is seen on Attitude, in conjunction to the influence of Trust. Results show that the impact of Subjective Norm in Attitude is more than the impact of Subjective norm as an antecedent of Intention. As the model shows that Trust has been an important issue in the organic food context, past scholars opined that for new products where people may not directly access information about it, they form their attitude based on information and opinion from significant others (Choo et al., 2004). According to Kozup et al. (2003), information may reduce customers' risk perception depending on the credibility of the information source. As literature shows that the friend and family sources are generally more credible than marketing organizations (Solomon, 2004), the influence of subjective norm on Attitude is quite reasonable. Therefore, managers need to take an integrated approach to handle all these entangled issues of norms, attitude and trust in forming customers' positive attitude towards organic food. The key to such program may lie in creating an overall positive experience for customers who would ultimately influence the attitude of others through social referrals.

Sixth, the study provides immense insights for policy makers. Since there is no organic food policy or certification process in Bangladesh right now, consumers have widespread disagreement with the perceived role of the government in this sector. One of the indicators of Trust construct (i.e., Trust4: measuring trust on Government) shows a mean value of 2.56 with a standard deviation of 1.085, with slightly positive skewness (+0.374) and negative kurtosis (-0.395). Looking at the level of agreement among consumers that government is doing enough to ensure authenticity of organic foods, a total of "agree" and "strongly agree" responses stands at 17.55%. It shows

the widespread lack of confidence in the government that it can ensure the authenticity of food retailers' claims. Therefore, government need to focus on formulating green marketing and sustainable business practice regulations in the organic food sector. Since government is an important stakeholder for sustaining trust among consumers, formulation of organic food policy along with certification issue should be addressed immediately.

Seventh, the study may have ancillary and long run consequences on the social, economic and environmental aspects of Bangladesh. Although it was reported that consumers were mostly aware of organic foods in Bangladesh (Mamoon & Haque, 2013), the demand for organic food has been still low as compared to that of conventionally grown foods. The proposed study highlighted certain customer insights which may contribute to the growth of domestic organic food market through the efforts of practicing managers and policy makers. Adoption of such food practices may result in better food safety, reduction of carbon footprint and healthy eating habits. As a result, if used appropriately, the study has the potential to contribute practically in terms of food safety, health, nutrition and environmental consequences of such efforts.

Therefore, based on the theoretical and practical implications, the study is expected to be useful to future researchers and practitioners alike.

#### **5.4 Limitations and Future Research Directions**

At this point, some limitations of the study may also be observed. The study is conducted in the geographical and social context of Bangladesh. Therefore, the

context may be noted while appreciating the study. Being a cross-sectional investigation with a particular sample, it may only be generalizable to Bangladesh, unless further validating studies are conducted across countries. In addition, although many types of organic foods were available in the market, the respondents were selected for any type of organic food they bought. Thus the investigation covers organic food buyers in a general scope rather than of specific type.

The survey was based in an urban set-up due to over-concentration of organic food malls in urban areas. Although such a city-centered sampling has been a common phenomenon for organic food studies, it limits the scope of investigation to city-based customers only. Therefore, the results may not be representative of rural consumers.

Some future research directions may also be mentioned based on the findings of the study. The role of subjective norm could be an area of future research. In particular, many researchers suggested that the moderating role of subjective norm under the TPB framework has been scant. Some studies posited that attitudes would be more predictive of buying intentions when the social environment is helpful of the behavior, thereby representing the role of norm in the attitude-intention association (Acock & DeFleur, 1972). Such a relationship may highlight on the social influence elements that might help in understanding the process of translating affirmative attitude into individual's purchase intention. Past researchers like Grube and Morgan (1990) and Newcomb et al. (1992) provided substantiation of such intervening effect of norms on the attitude-intention relationship. Subsequently, Povey et al. (2000) and Al-Swidi et al. (2014) empirically examined the anticipated relationship in the context of healthy eating behavior and organic food respectively, and endorsed that such



moderating impact of subjective norm occurs in the association between attitude and intention.

Future research may call for adopting qualitative studies along with quantitative validation as well. Qualitative studies may be aimed at identifying new variables that may affect the consumer purchase intention and behavior, exploring newer product attributes that consumer would be looking for or identifying newer dimensions of existing variables to account for greater share of variation in consumer behavior. In the context of organic food behavior, many past authors have emphasized this approach to explain consumer behavior further, although a very few studies could be traced that actually followed qualitative method and/or mixed method in this specific case (Hamzaoui-essoussi & Zahaf, 2005; Makatouni, 2002; Zanolli & Naspetti, 2002). In addition to quantitative vs. qualitative research paradigm, future researchers may also consider longitudinal surveys instead of cross-sectional surveys. It was observed that most of the studies in organic food behavior research centered on cross-sectional research, and only a handful of longitudinal studies have been available (Forman et al., 2012; Lu et al., 2006). Longitudinal surveys are designed to survey a specific group of consumers over a longer period, as is the case with cohort studies, and sometimes to investigate a changing population over a longer period of time (Hox, 2008). Particularly in the context of organic food which has been relatively a new phenomenon in many developing countries around the world, the market is still at the nascent stage. However, despite its novel status, the growth potential is already evident across geographic regions. In such a prevailing market situation with new product with high growth potential, it is highly likely that consumers keep learning

and gaining knowledge that may affect their attitude and behavior towards organic food over time (Dimitri & Dettmann, 2012).

Therefore, it may be inferred that due to such evolving nature of organic food market, longitudinal studies would be of great value to academicians, practicing managers and future policy makers to capture the dynamic behavioral orientation of organic food consumers.

It has also been evident that there have been a few cross-border studies on organic food purchase behavior (Clark, 2007; Soyezi, 2012; Squires et al., 2001). Cross-border studies shed light on diverse consumer behavior across the regions and help understand the consumer orientation (Soyez, 2012). Therefore, future researchers may choose to study multiple countries in terms of their consumers' determinants of organic food related behavior as well as transnational differences that might exist among different groups of customers.

## 5.5 Conclusion

The research was conducted to investigate the determinants of organic food purchase behavior among consumers in Bangladesh. As a research framework, the study adopted and modified the Integrated Behavior Model developed by Montano and Kasprzyk. The results of the investigation indicate that purchase intention is a significant predictor of purchase behavior among Bangladeshi consumers. However, mere intention explains a very low amount of purchase behavior, implying that there could be other antecedents of Intention that needs further exploration. All the antecedents have significant relationship with Intention, except PBC. The relationship between Subjective Norm and Attitude has been significant, including the partial mediating effect of Attitude in the Subjective Norm-Intention relationship.

The moderating effect of Trust on the Intention-Behavior relationship was significant. However, no moderating effect of Situational Constraints was observed in the Intention-Behavior relationship. In addition, habit has been found to be significant. Based on these findings, a number of managerial implications may be envisioned. It appears that since trust has substantial impact on purchase behavior, managers should take measures to enhance trust through various stakeholders. Once customers are gradually habituated to consuming organic foods, it would open up more opportunities since food consumption is strongly related to habit. At the same time, situational factors like availability, price and convenience need to be enhanced to facilitate early consumer adoption.

Finally, the study demonstrated that the IBM is a viable framework to explain and predict behavioral intention and purchase behavior of organic foods of consumers in Bangladesh.

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## APPENDIX A: Study Questionnaire (English Version)

### Determinants of Organic Food Purchase Behavior of Consumers in Bangladesh

#### Dear respondent:

Thank you for your time and effort in completing this survey. Your contribution is highly appreciated.

I am a doctoral student at the Universiti Utara Malaysia in Othman Yeop Abdullah Graduate School of Business, undertaking a study on “Determinants of Organic Food Purchase Behavior of Consumers in Bangladesh”. The purpose of this study is to get your opinions about certain aspects of organic food purchase practices from your viewpoint as a consumer. There is no correct or wrong answer to any question. The information you provide in this study will be treated as **strictly confidential** and **completely anonymous**. Filled-in questionnaire does not contain any possibility of personal identification.

This questionnaire may take about 10-15 minutes to complete. Please respond to every question and record your thoughts immediately on each statement.

**Thanks for your cooperation!**

Khandoker Mahmudur Rahman

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**Instruction:**

It is important that you answer all the questions. Your approximate answer is far more useful than an incomplete response. Please **place tick (✓) mark on the number in each box below** that you think accurate in relation to each question.

**Gender:**Male Female **Age:**18-25 years 26-35 years 36-45 years 46-55 years 56-65 years over 65 years **Monthly Household Income****(Taka):**Below 25,000 26,000-35,000 36,000-45,000 46,000-55,000 56,000-65,000 over 65,000 **Highest Education:**Primary Secondary Higher Secondary Bachelor Master/PhD **No. of Children (tick):**None Below 15 year's old  1 / 2 / 3Above 15 year's old  1 / 2 / 3

Marital Status: (please tick one)

Married / Single

Please tick only one of the following as applicable to you:

**(tick only one below)**

	I never heard of this kind of organic food before	I heard of this kind of organic food before, but never bought any yet	I heard of this kind of organic food and bought before
Organic Rice	<input type="text"/>	<input type="text"/>	<input type="text"/>
Organic Vegetables	<input type="text"/>	<input type="text"/>	<input type="text"/>
Organic Tea (KK tea)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Organic meat/others	<input type="text"/>	<input type="text"/>	<input type="text"/>

Question no.	Statements					
1.	<p>How frequent are you in purchasing organic food?</p> <p>(1) Never <input type="text"/></p> <p>(2) Less than 10 times a year <input type="text"/></p> <p>(3) Once every month <input type="text"/></p> <p>(4) Once every week <input type="text"/></p> <p>(5) Twice or More every week <input type="text"/></p>					
2.	How would you rate your average spending on organic foods per month?	Not much	Low	Moderate	Much	A lot
3.	What is the approximate proportion of organic foods to total amount of foods that you purchase per month?	Less than 25%	About 25%	About 50%	About 75%	75-100%
4.	In purchasing organic food, how much I am willing to pay more than conventional foods	Less than 20%	21-40%	41-60%	61-80%	Above 80%
5.	I purchase organic food even though they are more expensive than alternative conventional foods					



Please indicate your agreement on the boxes to the right of each of the statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6.	I would be glad to purchase more organic food in future	(1)	(2)	(3)	(4)	(5)
7.	Over the next month, I expect to buy organic foods	(1)	(2)	(3)	(4)	(5)
8.	Over the next month, I want to buy organic foods	(1)	(2)	(3)	(4)	(5)
9.	Over the next month, I intend to buy organic foods.	(1)	(2)	(3)	(4)	(5)
10.	Given the chance, I intend to switch to organic foods	(1)	(2)	(3)	(4)	(5)
11.	Over the next month, I am very likely to buy organic foods	(1)	(2)	(3)	(4)	(5)
12.	I intend to recommend others to buy organic foods	(1)	(2)	(3)	(4)	(5)
13.	I buy organic foods as a part of my routine.	(1)	(2)	(3)	(4)	(5)
14.	Buying organic foods is something that I do automatically while shopping.	(1)	(2)	(3)	(4)	(5)
15.	Buying organic foods is something that I do not have to consciously remember while shopping.	(1)	(2)	(3)	(4)	(5)

Please indicate your agreement on the boxes to the right of each of the statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16.	Buying organic food is something that I do not have to think hard before buying	(1)	(2)	(3)	(4)	(5)
17.	I trust that all stores selling organic foods are genuine about the organic nature of their products	(1)	(2)	(3)	(4)	(5)
18. (R)	I do not trust that local farmers of organic foods are truly practicing organic farming	(1)	(2)	(3)	(4)	(5)
19.	I trust the organic declaration on all the stores' shelves or packages	(1)	(2)	(3)	(4)	(5)
20.	I am confident that the government is doing enough to check the claim of these organic stores	(1)	(2)	(3)	(4)	(5)
21. (R)	I do not trust the organic foods that are sold as claiming organic	(1)	(2)	(3)	(4)	(5)
22.	I trust organic foods only from my favorite retailer(s)	(1)	(2)	(3)	(4)	(5)
23.	I often cannot buy as planned since my favorite organic food is not always available	(1)	(2)	(3)	(4)	(5)
24.	I often avoid buying organic food because of high price	(1)	(2)	(3)	(4)	(5)

Please indicate your agreement on the boxes to the right of each of the statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
25. (R)	I usually buy more when go for shopping for organic foods with family or friends	(1)	(2)	(3)	(4)	(5)
26.	I often cannot buy organic foods because stores are far from home	(1)	(2)	(3)	(4)	(5)
27.	I think organic food is good for my health	(1)	(2)	(3)	(4)	(5)
28.	I think myself as health-conscious consumer	(1)	(2)	(3)	(4)	(5)
29.	I think organic food is good for my children's health	(1)	(2)	(3)	(4)	(5)
30. (R)	I believe organic foods are harmful for my health	(1)	(2)	(3)	(4)	(5)
31.	I think organic foods can prevent possible illness in future	(1)	(2)	(3)	(4)	(5)
32.	I think genuine organic food is beneficial	(1)	(2)	(3)	(4)	(5)
33.	I think it is wise to buy genuine organic food	(1)	(2)	(3)	(4)	(5)
34. (R)	I think organic foods are worthless	(1)	(2)	(3)	(4)	(5)
35.	I think organic foods are useful	(1)	(2)	(3)	(4)	(5)
36.	I think organic foods are safe	(1)	(2)	(3)	(4)	(5)

Please indicate your agreement on the boxes to the right of each of the statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
37	I feel pleased to buy genuine organic food					
38.	I feel annoyed of adulteration of conventional food	(1)	(2)	(3)	(4)	(5)
39.	I feel joy to consume organic food	(1)	(2)	(3)	(4)	(5)
40. (R)	I hate organic foods	(1)	(2)	(3)	(4)	(5)
41.	I feel excited to buy organic food					
42.	I think organic food will help improve the environment	(1)	(2)	(3)	(4)	(5)
43.	I think organic food will reduce the use of artificial chemicals in agriculture	(1)	(2)	(3)	(4)	(5)
44.	I think organic food will reduce the environmental pollution	(1)	(2)	(3)	(4)	(5)
45.	I think organic food will reduce the use of pesticide	(1)	(2)	(3)	(4)	(5)
46.	I think organic food will reduce soil pollution	(1)	(2)	(3)	(4)	(5)
47.	People who are important to me, would think that I should buy organic food instead of conventional food	(1)	(2)	(3)	(4)	(5)
48.	People who are important to me, would approve my decision to buy organic food	(1)	(2)	(3)	(4)	(5)
49.	I feel social pressure to buy organic foods	(1)	(2)	(3)	(4)	(5)

Please indicate your agreement on the boxes to the right of each of the statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>50.</b> <b>(R)</b>	People who are important to me would be annoyed if I buy organic foods	(1)	(2)	(3)	(4)	(5)
<b>51.</b>	People who are important to me, would buy organic foods when they shop for foods	(1)	(2)	(3)	(4)	(5)
<b>52.</b>	People who are important to me, would prefer organic foods for themselves	(1)	(2)	(3)	(4)	(5)
<b>53.</b>	People who are important to me would prefer organic food when they go for food shopping	(1)	(2)	(3)	(4)	(5)
<b>54.</b> <b>(R)</b>	Even though people important to me recommend organic foods, they will not buy organic foods when they go for food shopping	(1)	(2)	(3)	(4)	(5)
<b>55.</b>	It is entirely up to me whether I want to buy organic food or not	(1)	(2)	(3)	(4)	(5)
<b>56.</b>	I have full control on my decision whether I want to buy organic food or not	(1)	(2)	(3)	(4)	(5)
<b>57.</b>	I am independent to decide whether I would buy organic food or not	(1)	(2)	(3)	(4)	(5)
<b>58.</b>	If I wanted to, I could easily buy organic foods	(1)	(2)	(3)	(4)	(5)
<b>59.</b>	It is extremely easy for me to buy organic foods	(1)	(2)	(3)	(4)	(5)
<b>60.</b>	Buying organic food is not difficult for me at all	(1)	(2)	(3)	(4)	(5)

## APPENDIX B: Study Questionnaire (Bangla Version)

জরিপ প্রশ্নপত্র

### Determinants of Organic Food Purchase Behavior of Consumers in Bangladesh “বাংলাদেশের অর্গানিক খাদ্যের ভোক্তাদের ক্রয় আচরণের নিয়ামক বিশ্লেষণ”

সম্মানিত উত্তরদাতা:

এই জরিপে অংশ নেয়ার জন্য আপনাকে আন্তরিক ধন্যবাদ জানাচ্ছি। আপনার মতামত ভবিষ্যত প্রজন্মের জন্য একটি সুন্দর খাদ্য ব্যবস্থা প্রণয়নে আমাদের দিক নির্দেশনা দেবে।

আমি একজন পি.এইচ.ডি. ছাত্র হিসেবে ইউনিভার্সিটি উত্তারা, মালয়শিয়া তে অধ্যয়নরত আছি, যেখানে আমি বাংলাদেশের অর্গানিক খাদ্যের ক্রেতা জরিপ করছি। এই জরিপের মাধ্যমে অর্গানিক খাদ্যের ক্রেতা হিসেবে আপনার চাহিদা এবং ক্রয়সংক্রান্ত বিভিন্ন বিষয়ে মূল্যবান মতামত দিয়ে আমাদের সহযোগিতা করার জন্য অনুরোধ করছি। এই জরিপের প্রশ্নগুলোর উত্তর (টিক চিনহ) নিতান্ত আপনার মতামতভিত্তিক, তাই প্রশ্নগুলোর কোনো সঠিক বা ভুল উত্তর নেই। আপনার উত্তরগুলো সম্পূর্ণ বেনামী এবং ব্যক্তিগতভাবে চিহ্নিত নয়, তাই পরিচয়ের গোপনীয়তা নিশ্চিত করা হয়েছে।

এই জরিপটি সম্পন্ন করতে অনুগ্রহ করে কোনো প্রশ্ন বাদ দেবেন না। আপনার মতামত অনুযায়ী টিক চিনহ দিন। এবং জরিপ শেষে একটি কলম উপহার নিন!

আপনার মূল্যবান সময়ের জন্য ধন্যবাদ!

খন্দকার মাহমুদুর রহমান

পি,এইচ,ডি ছাত্র

ইউনিভার্সিটি উত্তারা মালয়শিয়া

পরামর্শ:

অনুগ্রহ করে কোনো প্রশ্ন বাদ দেবেন না। প্রয়োজনে আনুমানিক/আপনার মতের কাছাকাছি উত্তর গ্রহণযোগ্য।  
অনুগ্রহ করে খালি বাস্তবে আপনার মতামত/কাছাকাছি উত্তর অনুযায়ী টিক চিহ্ন দিন।

লিঙ্গ :

পুরুষ

মহিলা

বয়স :

১৮-২৫ বছর

২৬-৩৫ বছর

৩৬-৪৫ বছর

৪৬-৫৫ বছর

৫৬-৬৫ বছর

৬৫ বছরের উপরে

পরিবারের মাসিক আয়  
(স্বামী ও স্ত্রীর আয় সহ)

২৫,০০০ টাকার নিচে

২৬,০০০-৩৫,০০০ টাকা

৩৬,০০০-৪৫,০০০ টাকা

৪৬,০০০-৫৫,০০০ টাকা

৫৬,০০০-৬৫,০০০ টাকা

৬৫,০০০ টাকার উপরে

সর্বোচ্চ শিক্ষাগত স্তর:

প্রাইমারি স্কুল

এসএসসি

এইচ.এস.সি.

অনার্স/ডিগ্রী

মাস্টার/ডক্টরেট

বয়স ভিত্তিক সন্তান সংখ্যা:

কোনো সন্তান নেই

১৫ বছরের **নীচে** কতজন

১ জন

২ জন

৩ জন

১৫ বছরের **উপরে** কতজন

১ জন

২ জন

৩ জন

বৈবাহিক অবস্থা:(Please tick)

Married / Single

নীচে খাবারের ক্ষেত্রে প্রযোজ্য ঘরে টিক দিন:

	আগে কখনো শুনিনি	এ সম্পর্কে আগে শুনেছি, কিন্তু কখনো কেনা হয়নি	এ ধরনের খাবার কেনা/খাওয়া হয়েছে
অর্গানিক চাল			
অর্গানিক শাক-সবজি			
অর্গানিক চা (KK Tea)			
অর্গানিক মাংস/অন্যান্য খাবার			

ক্র. নং	বিবরণ					
১.	অতীতে আপনি আনুমানিক কতবার অর্গানিক খাবার কিনেছেন? (নিচের বর্ণনা দেখুন) (১) কখনই কেনা হয়নি <input type="text"/> (২) বছরে ১০ বারের কম কেনা হয়েছে <input type="text"/> (৩) মাসে একবার কেনা হয়েছে <input type="text"/> (৪) সপ্তাহে একবার কেনা হয়েছে <input type="text"/> (৫) সপ্তাহে দুইবার বা তার বেশি কেনা হয়েছে <input type="text"/>					
২.	প্রতি মাসে অর্গানিক খাদ্যের পেছনে আপনার খরচকে আপনি কিভাবে বর্ণনা করবেন?	খুবই কম	কম	মোটামুটি/ মাঝারি	বেশি খরচ	অনেক খরচ
৩.	প্রতি মাসে আপনার কেনা সর্বমোট খাদ্যদ্রব্যের আনুমানিক কত শতাংশ অর্গানিক খাদ্য?	অর্গানিক খাদ্য ২৫% এর কম	প্রায় ২৫%	প্রায় ৫০%	প্রায় ৭৫%	৭৫- ১০০%
৪.	অর্গানিক খাদ্য কেনার সময় প্রচলিত খাদ্যদ্রব্যের তুলনায় আপনি কতটুকু বেশি দাম দিতে প্রস্তুত?	২০% এর কম	২১- ৪০%	৪১-৬০%	৬১- ৮০%	৮০% এর উপরে
৫.	অর্গানিক খাদ্যের দাম তুলনামূলকভাবে বেশি হলেও আমি কিনি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৬.	আমি ভবিষ্যতে অর্গানিক খাদ্য আগ্রহ নিয়ে কিনতে চাই	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত



৭.	আগামী মাসে আমি অর্গানিক খাদ্য কিনব বলে আশা করি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৮.	আগামী মাসে আমি অর্গানিক খাদ্য কিনতে চাই	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৯.	আগামী মাসে আমার অর্গানিক খাদ্য কেনার ইচ্ছা আছে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১০.	সুযোগ পেলে আমি সম্পূর্ণরূপে অর্গানিক খাবারে নির্ভরশীল হতে চাই	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১১.	আগামী মাসে আমার অর্গানিক খাবার কেনার উজ্জ্বল সম্ভাবনা আছে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১২.	অর্গানিক খাদ্য কেনার জন্য আমি অন্যদের উত্সাহিত করতে চাই	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১৩.	অর্গানিক খাদ্য কেনা আমার জন্য একটি রুটিনমাসিক কাজ	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১৪.	বাজার করার সময় অর্গানিক খাদ্য কেনা আমার জন্য একটি স্বভাবসুলভ সিদ্ধান্ত	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১৫.	আগে থেকে মনে না থাকলেও অথবা বাজারের লিস্টে না থাকলেও বাজার করার সময় আমি সহজাতভাবেই অর্গানিক খাবারের আইটেম কিনে থাকি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১৬.	অর্গানিক খাদ্য কেনার আগে আমার গভীরভাবে চিন্তার প্রয়োজন হয় না, বরং অনেকটা দ্রুত ও অভ্যাসবশত কিনে থাকি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত

১৭	আমার দৃঢ় বিশ্বাস যে যারা “অর্গানিক খাদ্য” বলে বিক্রি করছে, তাদের সব অর্গানিক খাদ্যগুলো সত্যিই তাই	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১৮.	আমার মনে হয় অর্গানিক খাদ্যের চাষীরা অর্গানিক খাদ্য চাষের ক্ষেত্রে অর্গানিক চাষাবাদের সঠিক নিয়ম-কানন ও পদ্ধতি মেনে চলেন না	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
১৯.	আমি বিশ্বাস করি যে অর্গানিক খাদ্য বিক্রেতাদের দোকানে বা প্যাকেজে “অর্গানিক খাদ্য” দাবি করে যা লেখা থাকে, তা পুরোপুরি সত্য	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২০.	আমি নিশ্চিত যে এই দোকানগুলোর অর্গানিক খাবারের পরীক্ষা বা যাচাই করার ক্ষেত্রে সরকারের কর্মকান্ড পর্যাপ্ত	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২১.	অর্গানিক খাবার দাবি করে বাজারে যা বিক্রি হয়, তার উপর আমার বিশ্বাস নেই	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২২.	শুধুমাত্র নির্দিষ্ট কিছু পছন্দের দোকান থেকে আমি অর্গানিক খাবার কিনে থাকি, কারণ তাদের উপর আমার আস্থা আছে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২৩.	আমি অনেক সময় চাইলেও পর্যাপ্ত পরিমাণ কিনতে পারিনা কারণ আমার পছন্দের অর্গানিক খাবার সবসময় পাওয়া যায় না	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২৪.	দাম বেশি হওয়ার কারণে অনেক সময় অর্গানিক খাদ্য এড়িয়ে চলি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত

২৫.	সাধারণত বন্ধু-বান্ধব বা পরিবার পরিজনের সাথে বাজারে গেলে কেনার সময় বেশি পরিমাণে অর্গানিক খাদ্য কেনা হয়ে থাকে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২৬.	অনেক সময় অর্গানিক খাদ্য কেনা সম্ভব হয় না কারণ বাসা থেকে দোকান দূরে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২৭.	আমার মনে হয় অর্গানিক খাদ্য স্বাস্থ্যের জন্য ভালো	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২৮.	আমি নিজেকে একজন স্বাস্থ্য সচেতন ক্রেতা বলে মনে করি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
২৯.	আমি মনে করি অর্গানিক খাদ্য বাস্তুদের জন্য ভালো	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩০.	আমি মনে করি অর্গানিক খাদ্য আমার স্বাস্থ্যের জন্য ক্ষতিকর	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩১.	আমি মনে করি সত্যিকার অর্গানিক খাদ্য ভবিষ্যত রোগ-ব্যাদি থেকে দূরে থাকতে সাহায্য করবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩২.	আমার মনে হয় সত্যিকার অর্গানিক খাদ্য উপকারী	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩৩.	আমার মনে হয় সত্যিকার অর্গানিক খাদ্য কেনা বুদ্ধিমানের কাজ	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩৪.	আমি মনে করি অর্গানিক খাদ্য কোনো কাজের না	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত

৩৫.	আমি মনে করি সত্যিকার অর্গানিক খাদ্যের উপকারিতা আছে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩৬.	আমি মনে করি সত্যিকার অর্গানিক খাদ্য নিরাপদ	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩৭.	অর্গানিক খাদ্য কিনলে আমি খুশি হই	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩৮.	বাজারে ভেজাল খাবারের বিষয়ে আমি বিরক্ত	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৩৯.	অর্গানিক খাদ্য খেতে আমি আনন্দ অনুভব করি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪০.	আমি অর্গানিক খাদ্য ঘূনা করি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪১.	অর্গানিক খাদ্য কিনে আমি খুবই উত্ফুল্ল হই	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪২.	আমি মনে করি অর্গানিক খাদ্য পরিবেশের উন্নয়নে সাহায্য করবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪৩.	আমি মনে করি অর্গানিক খাদ্যব্যবস্থা কৃষিতে কৃত্রিম ক্যামিকেলের ব্যবহার কমিয়ে আনবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪৪.	আমি মনে করি অর্গানিক খাদ্যব্যবস্থা পরিবেশ দূষণ কমাতে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪৫.	আমি মনে করি অর্গানিক খাদ্যব্যবস্থা কৃষিতে কীটনাশকের ব্যবহার কমিয়ে আনবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪৬.	আমি মনে করি অর্গানিক খাদ্যব্যবস্থা মাটিতে দূষণ কমাতে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত

৪৭.	বন্ধু-বান্ধব বা আত্মীয়-স্বজন যারা আমার কাছে গুরুত্বপূর্ণ, তারা মনে করতে পারে যে আমার প্রচলিত খাবারের পরিবর্তে অর্গানিক খাবার কেনা উচিত	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪৮.	বন্ধু-বান্ধব বা আত্মীয়-স্বজন যারা আমার কাছে গুরুত্বপূর্ণ, তারা আমার অর্গানিক খাদ্য কেনা সমর্থন করবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৪৯.	অর্গানিক খাদ্য কেনার জন্য আমি পারিবারিক বা সামাজিক চাপ অনুভব করি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫০.	বন্ধু-বান্ধব বা আত্মীয়-স্বজন যারা আমার কাছে গুরুত্বপূর্ণ, আমার অর্গানিক খাদ্য কেনার সিদ্ধান্তে তারা বিরক্ত হবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫১.	বন্ধু-বান্ধব বা আত্মীয়-স্বজন যারা আমার কাছে গুরুত্বপূর্ণ, তারা নিজেরা খাবার কেনার সময় অর্গানিক খাবার বেছে নিবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫২.	বন্ধু-বান্ধব বা আত্মীয়-স্বজন যারা আমার কাছে গুরুত্বপূর্ণ, তারা নিজেদের জন্য অর্গানিক খাবার পছন্দ করবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫৩.	বন্ধু-বান্ধব বা আত্মীয়-স্বজন যারা আমার কাছে গুরুত্বপূর্ণ, তারা নিজেরা বাজার করার সময় অর্গানিক খাদ্যকে প্রাধান্য দেবে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫৪.	আমার ধারণা, যদিও বন্ধু-বান্ধব বা আত্মীয়-স্বজন অর্গানিক খাদ্য কিনতে পরামর্শ দিতে পারে, কিন্তু নিজেরা কেনার সময় অর্গানিক খাদ্য কিনবে না	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত

৫৫.	অর্গানিক খাদ্য আমি কিনব বা কিনব না, তা পুরোটাই নির্ভর করে আমার ইচ্ছার উপর	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫৬.	অর্গানিক খাদ্য কেনার সিদ্ধান্ত সম্পূর্ণ আমার নিয়ন্ত্রণে	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫৭.	অর্গানিক খাদ্য কেনার সিদ্ধান্ত আমি সম্পূর্ণ স্বাধীনভাবে নিতে পারি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫৮.	আমি চাইলে সহজেই অর্গানিক খাদ্য কিনতে পারি	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৫৯.	অর্গানিক খাদ্য কেনা আমার জন্য খুবই সোজা	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত
৬০.	অর্গানিক খাদ্য কেনা আমার জন্য মোটেও কঠিন নয়	কোনভাবেই একমত নই	একমত নই	কোনো মত নেই	একমত	সম্পূর্ণ একমত

আপনার মতামত এবং সময় দেয়ার জন্য ধন্যবাদ।

## **APPENDIX C: List of Stores Selling Organic Foods in Bangladesh**

1. Swapno: 59 branches
2. Meena Bazar: 17 branches
3. Agora: 14 branches
4. Suborna: 03 branches
5. Mohammadpur Krishi Market: 14 outlets
6. Proshika: 01 outlet
7. Shashya Prabartana: 01 outlet
8. Southwest Gardens: 01 outlet

**Total Number of Outlets: 110**



**APPENDIX D: Common Method Bias Check (PAF extraction)**

**Total Variance Explained**

Component	Initial Eigenvalues		Component	Extraction Sums of Squared Loadings		
	Total	% of Variance		Total	% of Variance	Component
1	9.005	15.009	15.009	8.540	14.233	14.233
2	4.717	7.862	22.871	4.295	7.159	21.392
3	3.377	5.628	28.499	2.870	4.784	26.176
4	2.610	4.349	32.848	2.118	3.530	29.705
5	2.470	4.117	36.965	1.989	3.316	33.021
6	2.306	3.844	40.809	1.870	3.116	36.137
7	2.173	3.622	44.431	1.767	2.945	39.082
8	1.811	3.019	47.450	1.351	2.252	41.334
9	1.638	2.729	50.179	1.136	1.894	43.227
10	1.473	2.455	52.634	1.016	1.694	44.921
11	1.327	2.212	54.846	.796	1.326	46.247
12	1.166	1.943	56.789	.667	1.112	47.359
13	1.057	1.762	58.551	.551	.918	48.277
14	1.044	1.740	60.291	.456	.760	49.037
15	1.017	1.695	61.987	.424	.707	49.744
16	.995	1.658	63.645			
17	.936	1.560	65.205			
18	.894	1.491	66.696			
19	.854	1.423	68.119			
20	.829	1.382	69.501			
21	.782	1.304	70.804			
22	.745	1.241	72.046			
23	.737	1.228	73.274			
24	.724	1.206	74.480			
25	.707	1.179	75.659			
26	.680	1.134	76.793			
27	.660	1.100	77.893			
28	.636	1.059	78.952			
29	.626	1.043	79.995			
30	.602	1.003	80.997			
31	.575	.958	81.955			
32	.559	.931	82.887			

Extraction Method: Principal Component Analysis



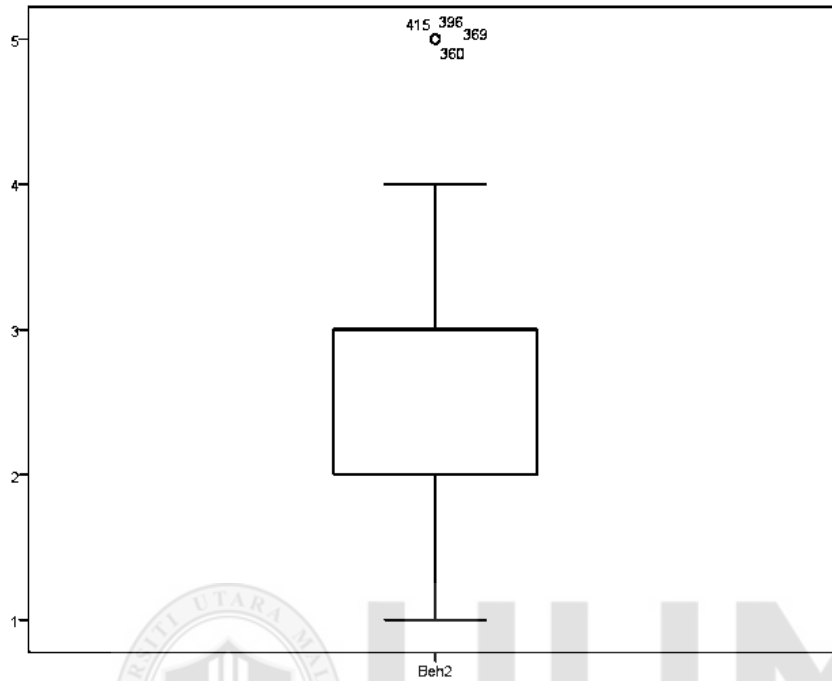
### APPENDIX E: Estimation Maximization (EM) Values

Items	EM	Items	EM	Items	EM
Beh1	2.93	Att5_h	3.65	Gender	1.54
Beh2	2.74	Att6_cog	3.53	Age	2.89
Beh3	2.69	Att7_cog	3.54	Income	3.59
Beh4	2.27	Att8_cog	3.17	Education	3.82
Beh5	3.03	Att9_cog	3.46	Marital Status	1.67
Beh6	3.37	Att10_cog	3.43		
Int1	3.72	Att11_aff	3.36		
Int2	3.69	Att12_aff	3.77		
Int3	3.67	Att13_aff	3.74		
Int4	3.68	Att14_aff	3.45		
Int5	3.72	Att15_aff	3.71		
Int6	3.75	Att16_en	3.53		
Hab1	2.79	Att17_en	3.58		
Hab2	2.80	Att18_en	3.52		
Hab3	2.77	Att19_en	3.32		
Hab4	2.93	Att20_en	3.51		
Trust1	2.56	Sub1_inj	3.44		
Trust2	2.58	Sub2_inj	3.49		
Trust3	2.51	Sub3_inj	3.31		
Trust4	2.57	Sub4_inj	3.36		
Trust5	2.66	Sub5_des	3.39		
Trust6	2.66	Sub6_des	3.37		
Situ1	3.06	Sub7_des	3.45		
Situ2	3.13	Sub8_des	3.17		
Situ3	3.03	Pbc1	3.18		
Situ4	3.11	Pbc2	3.15		
Att1_h	3.61	Pbc3	3.10		
Att2_h	3.60	Pbc4	3.06		
Att3_h	3.66	Pbc5	3.11		
Att4_h	3.07	Pbc6	3.21		

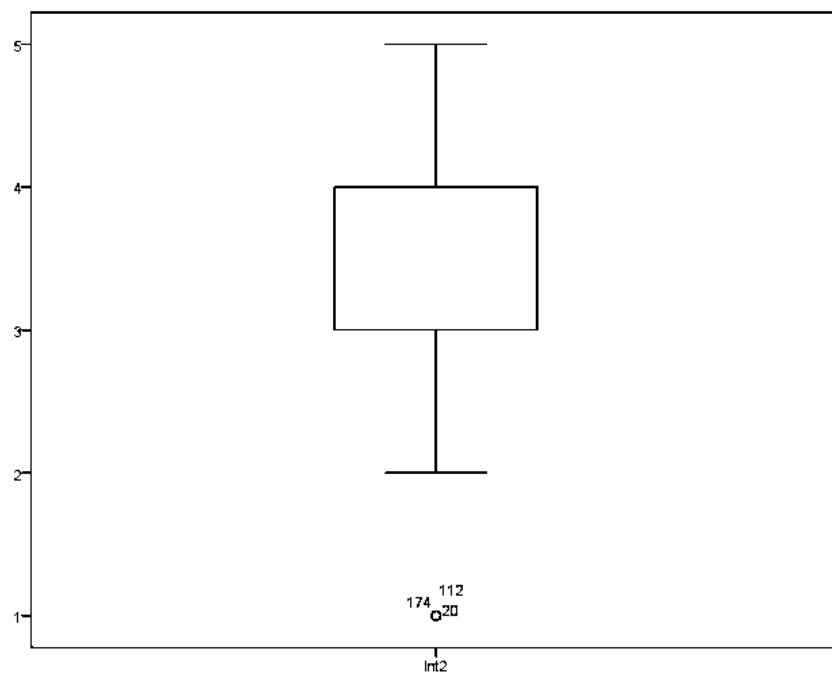
a. Little's MCAR test: Chi-Square = 747.397, DF = 822, Sig. = 0.970

## APPENDIX F: Boxplots Indicating Potential Outliers

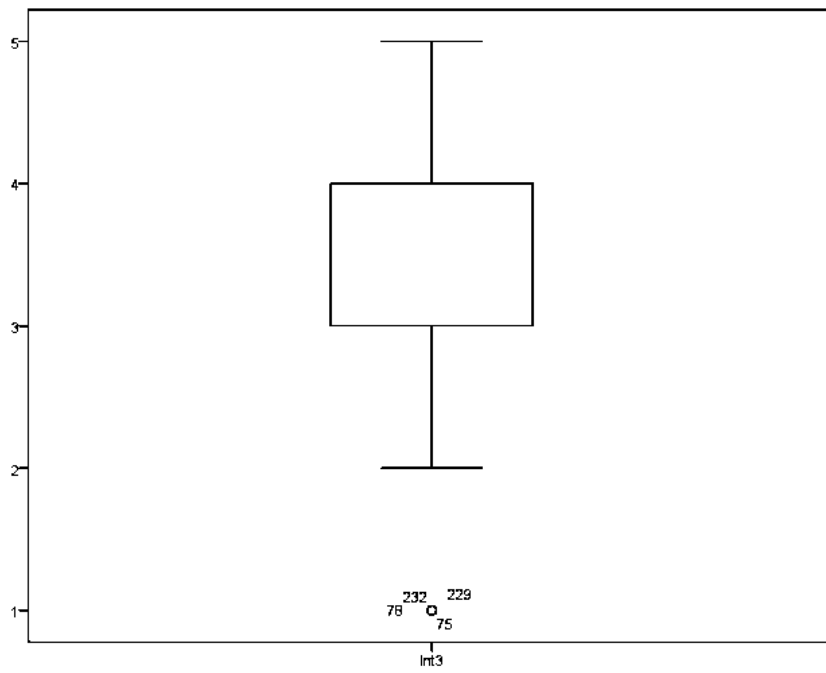
Indicator Variable: Beh2



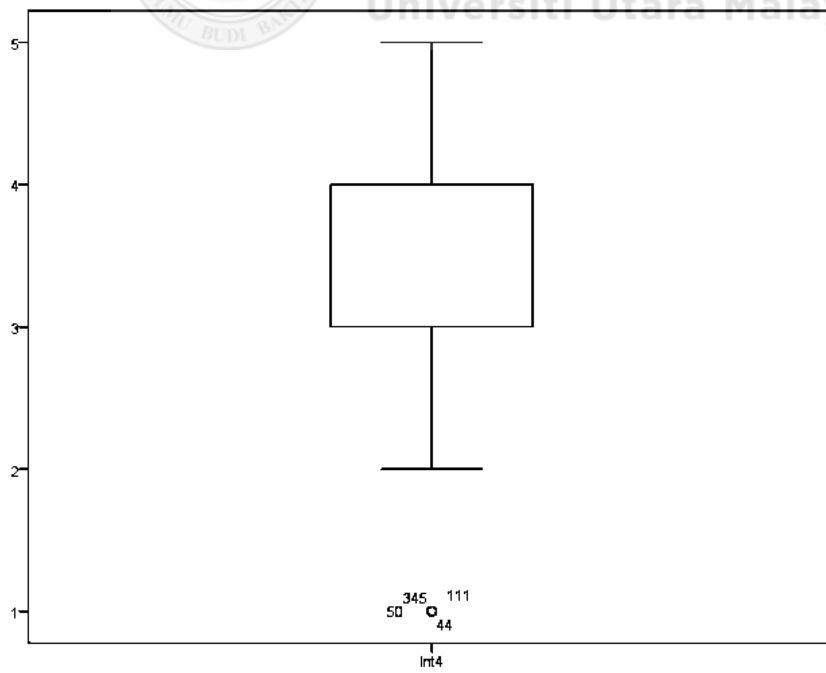
Indicator Variable: Int2



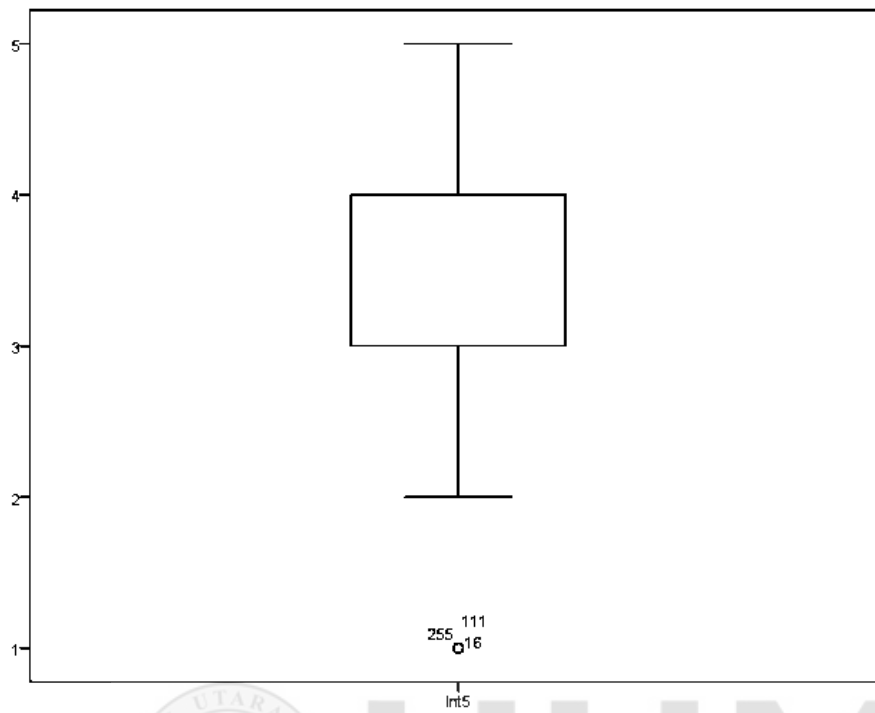
Indicator Variable: Int3



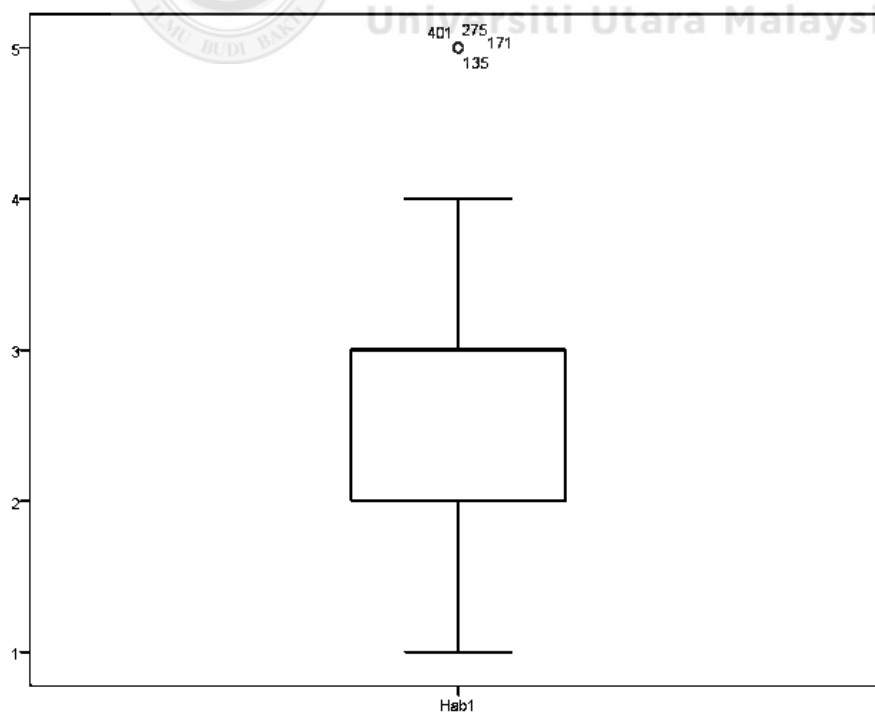
Indicator Variable: Int4



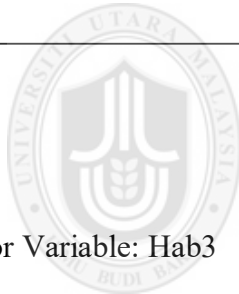
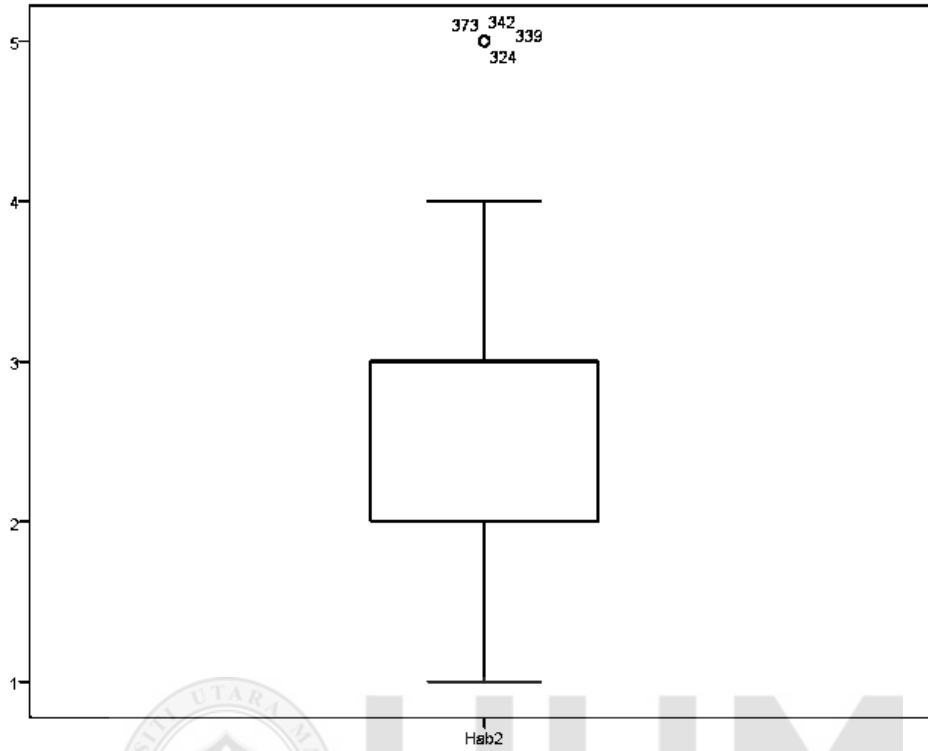
Indicator Variable: Int5



Indicator Variable: Hab1

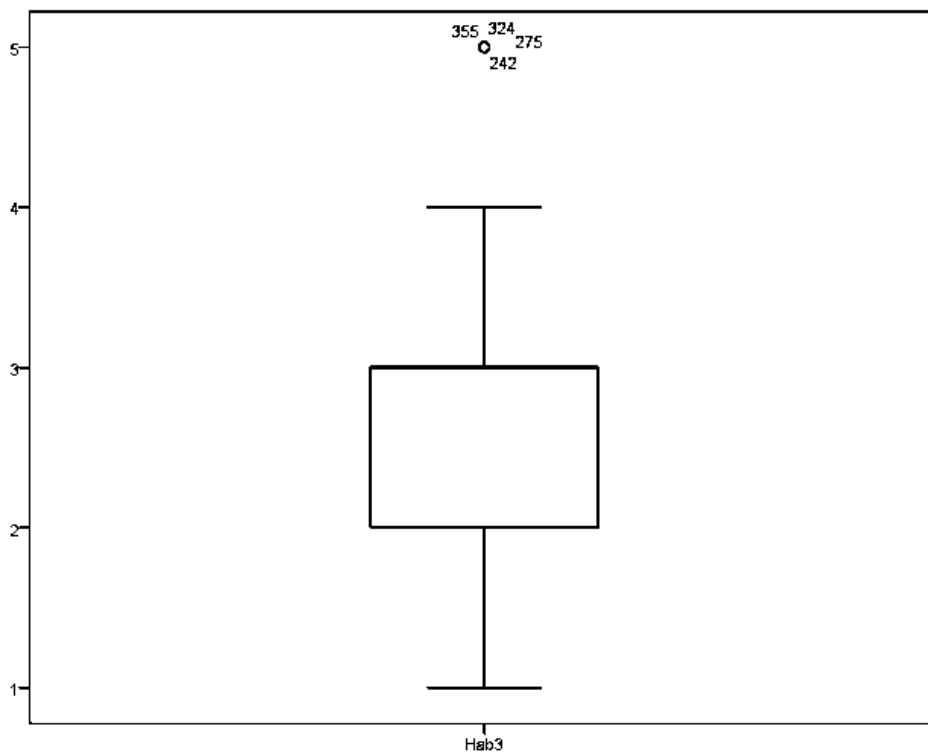


Indicator Variable: Hab2

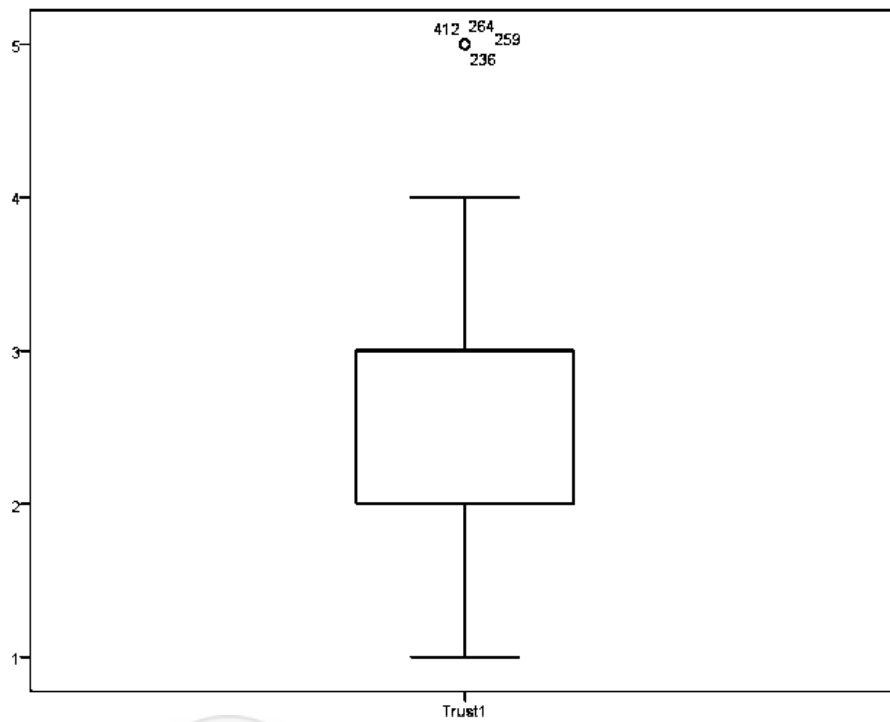


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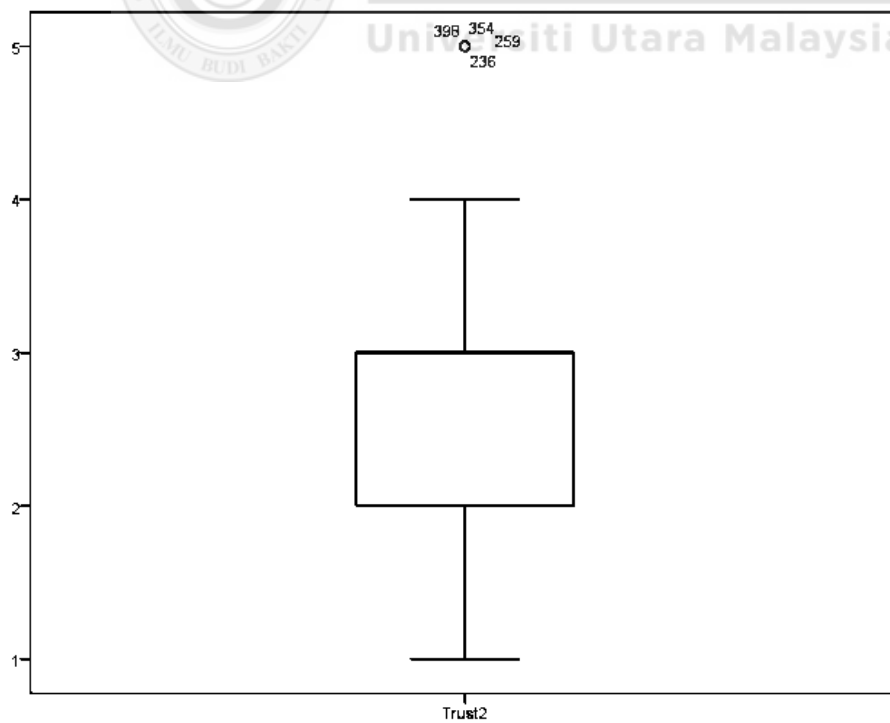
Indicator Variable: Hab3



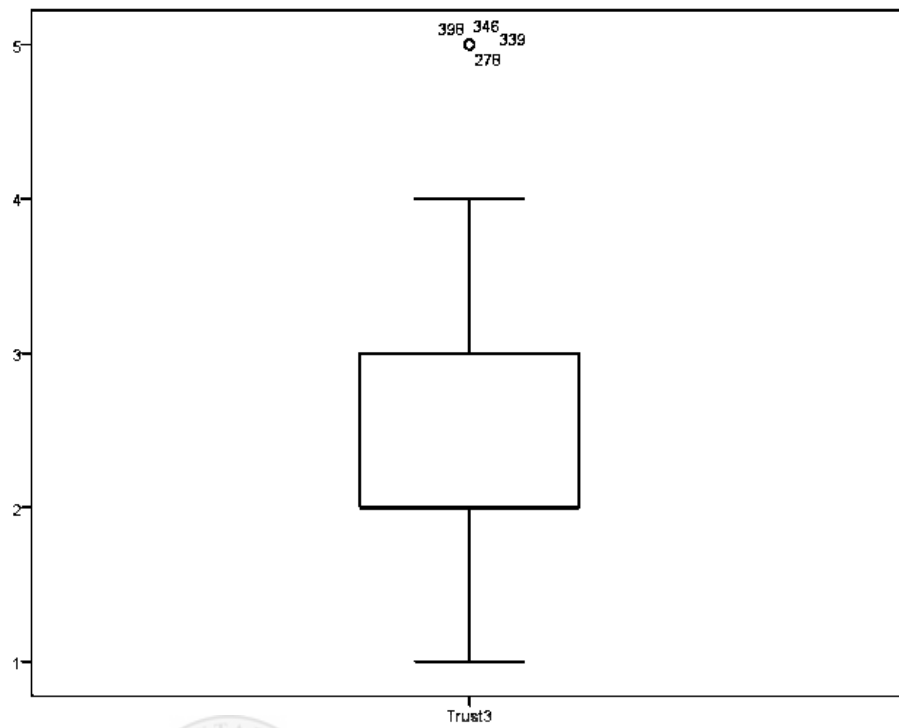
Indicator Variable: Trust1



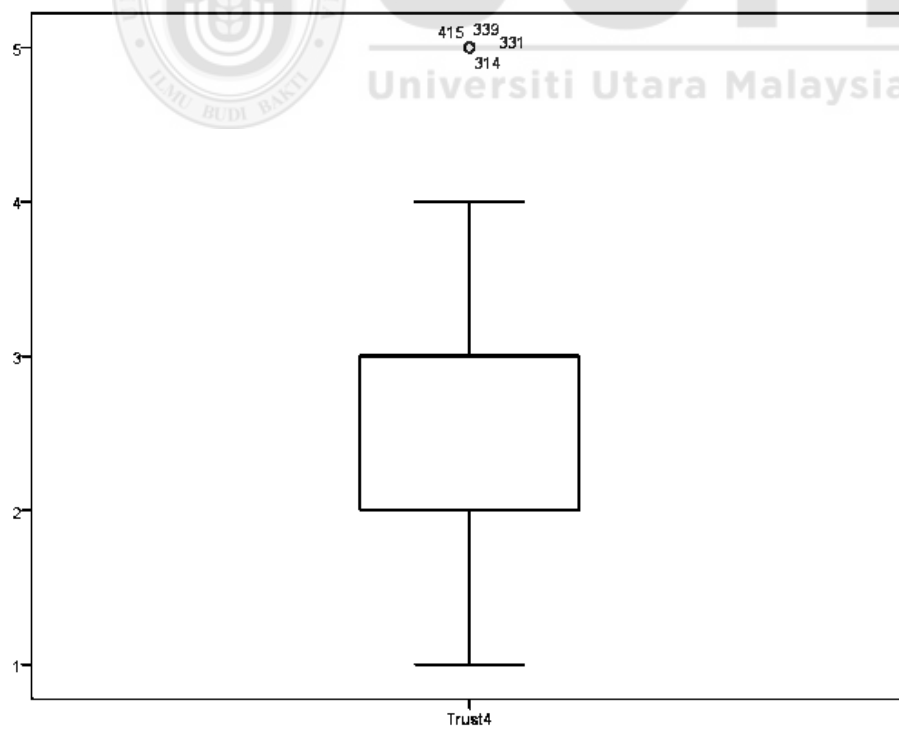
Indicator Variable: Trust2



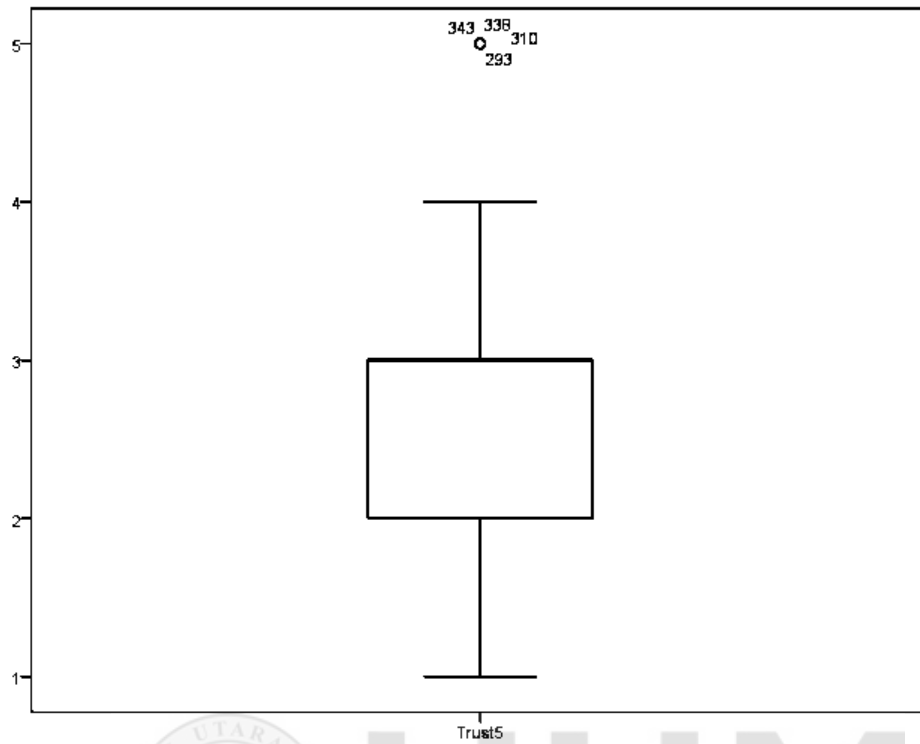
Indicator Variable: Trust3



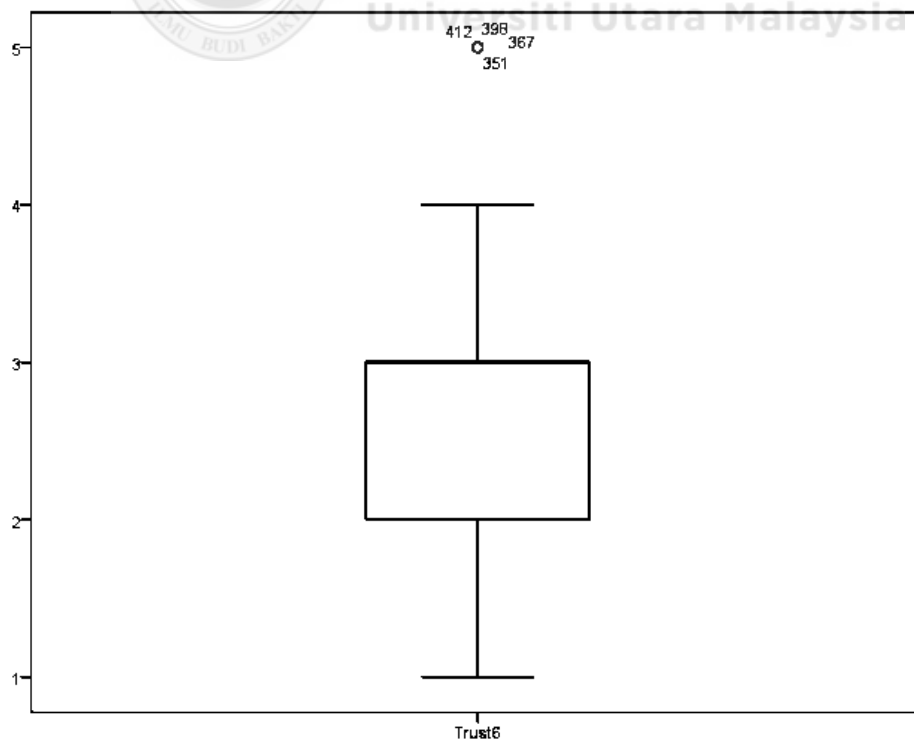
Indicator Variable: Trust4



Indicator Variable: Trust5

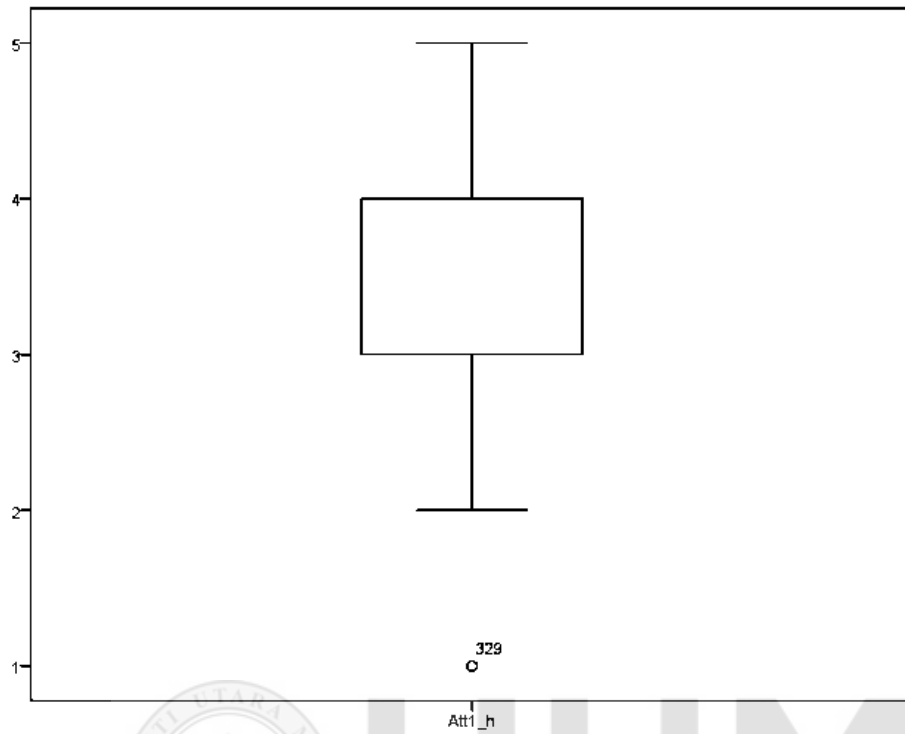


Indicator Variable: Trust6

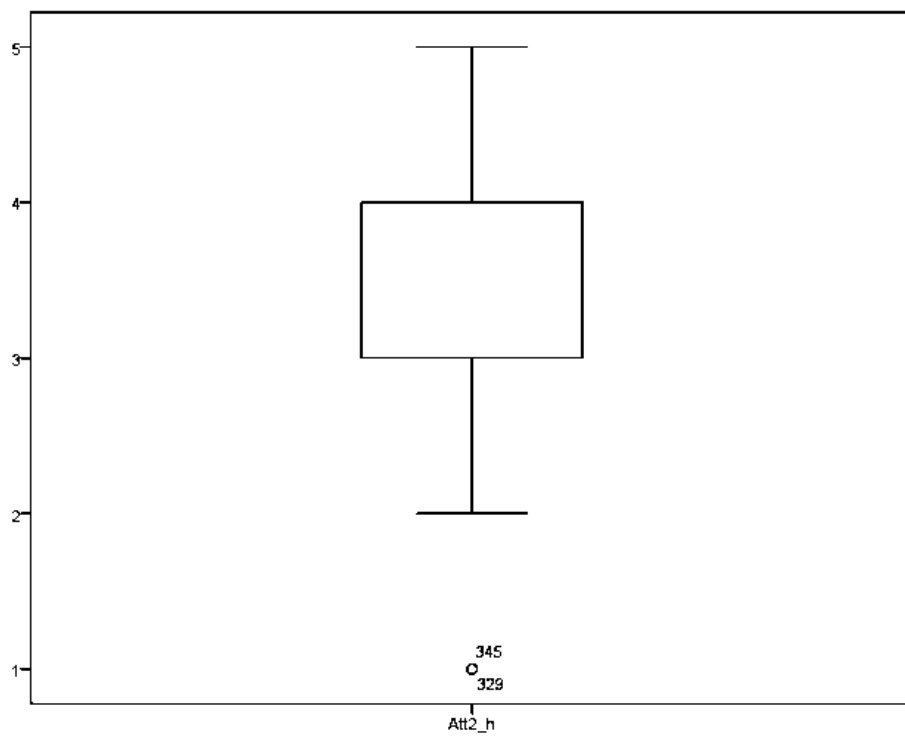




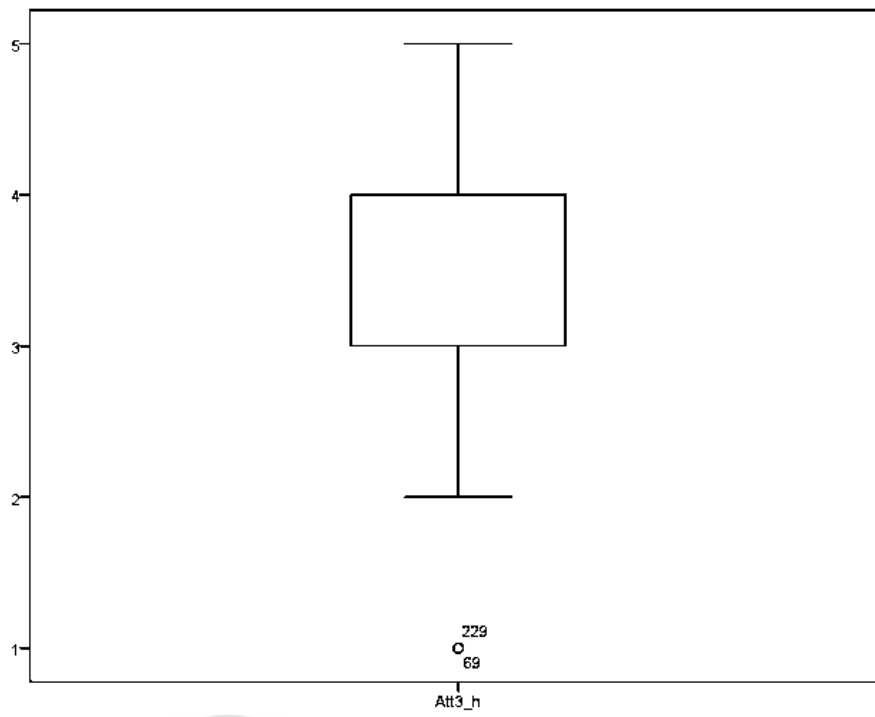
Indicator Variable: Att1\_h



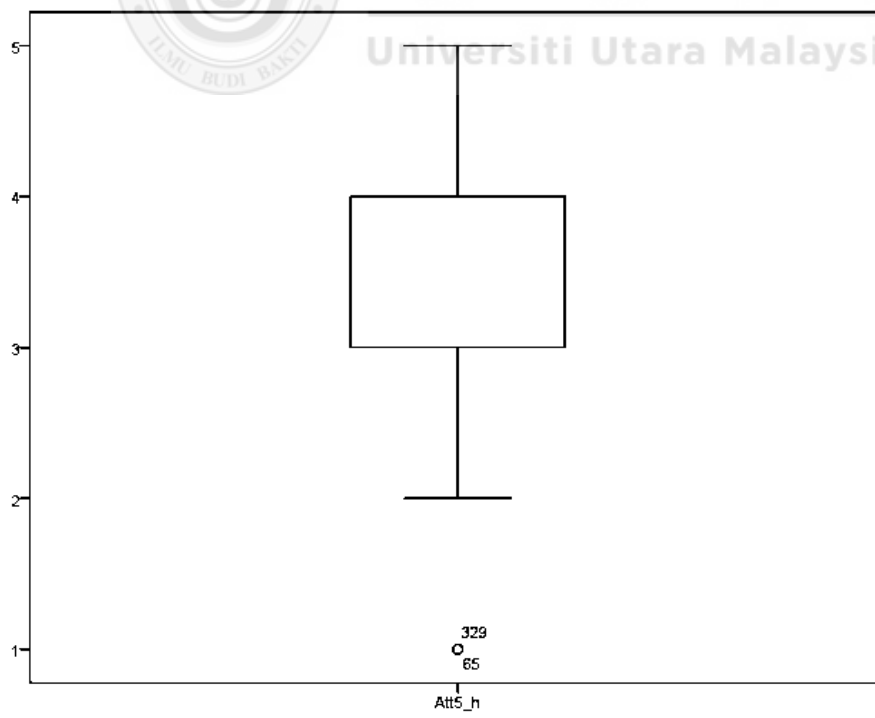
Indicator Variable: Att2\_h



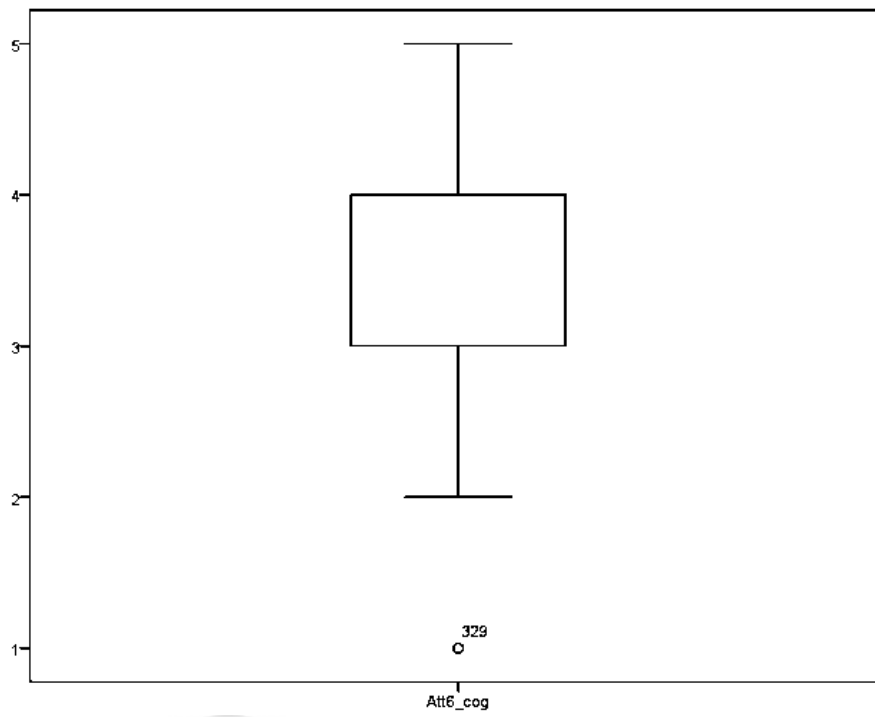
Indicator Variable: Att3\_h



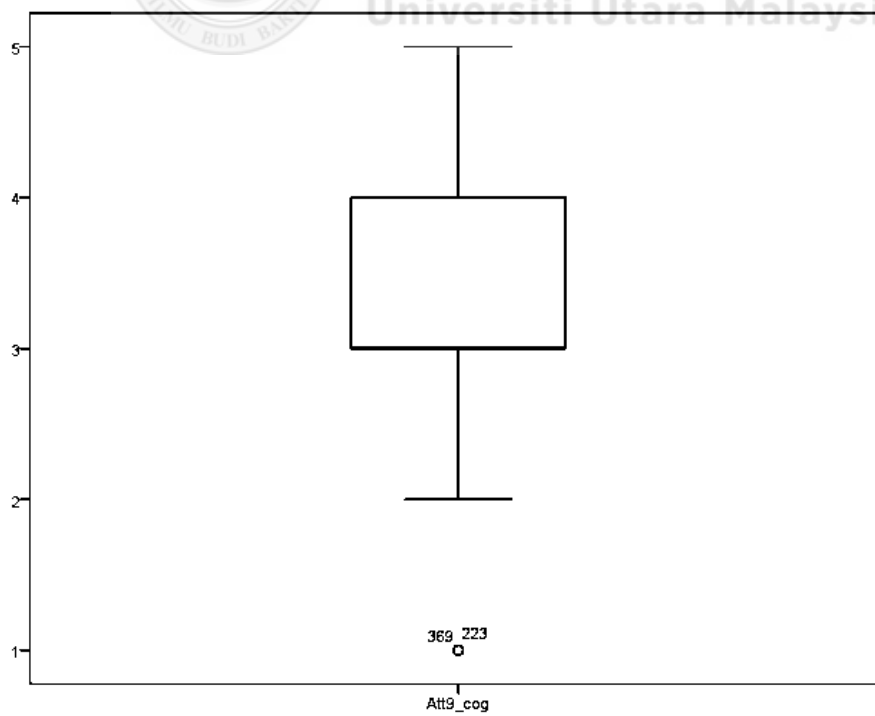
Indicator Variable: Att5\_h



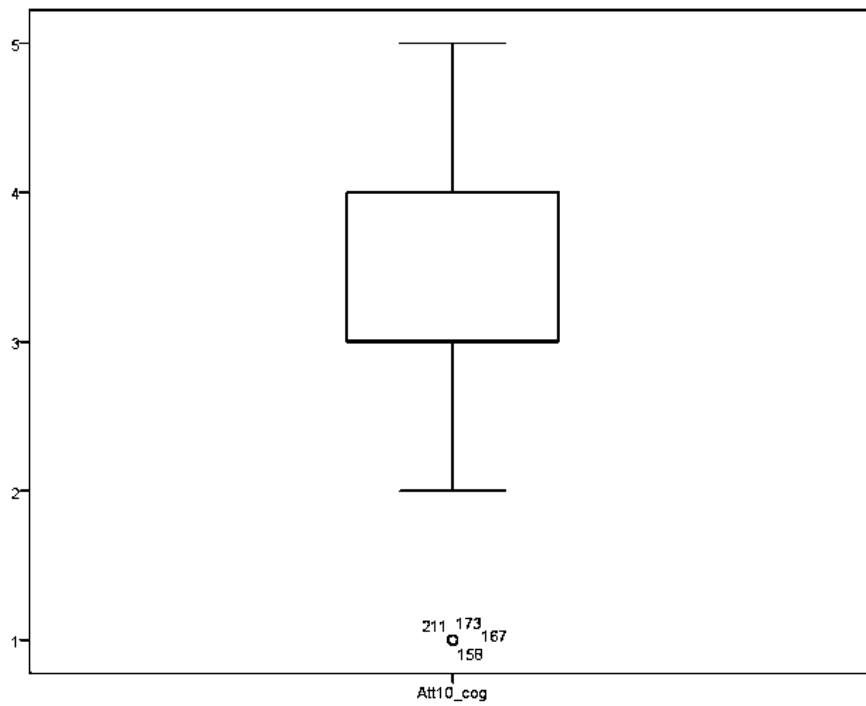
Indicator Variable: Att6\_cog



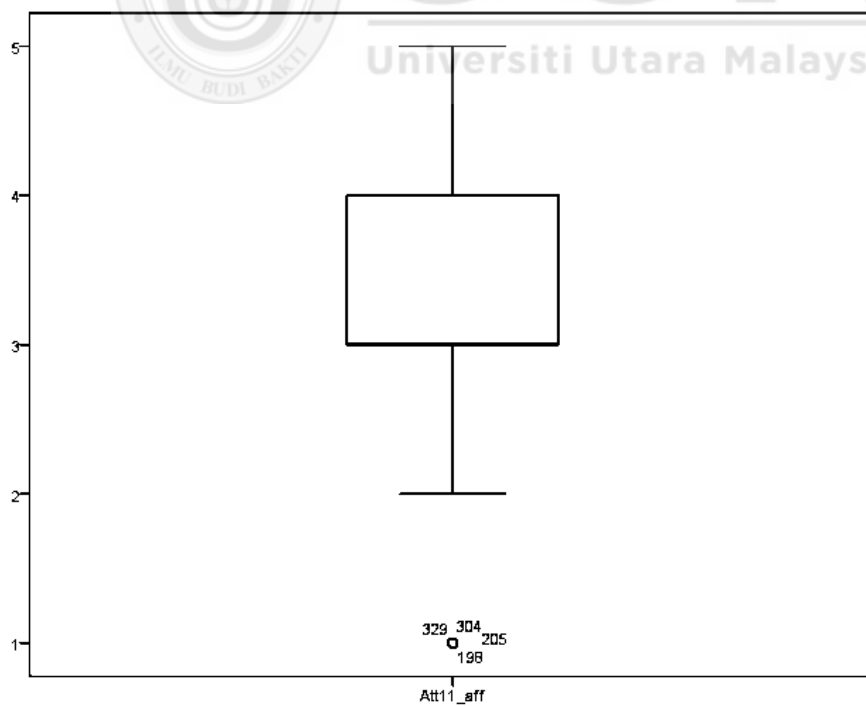
Indicator Variable: Att9\_cog



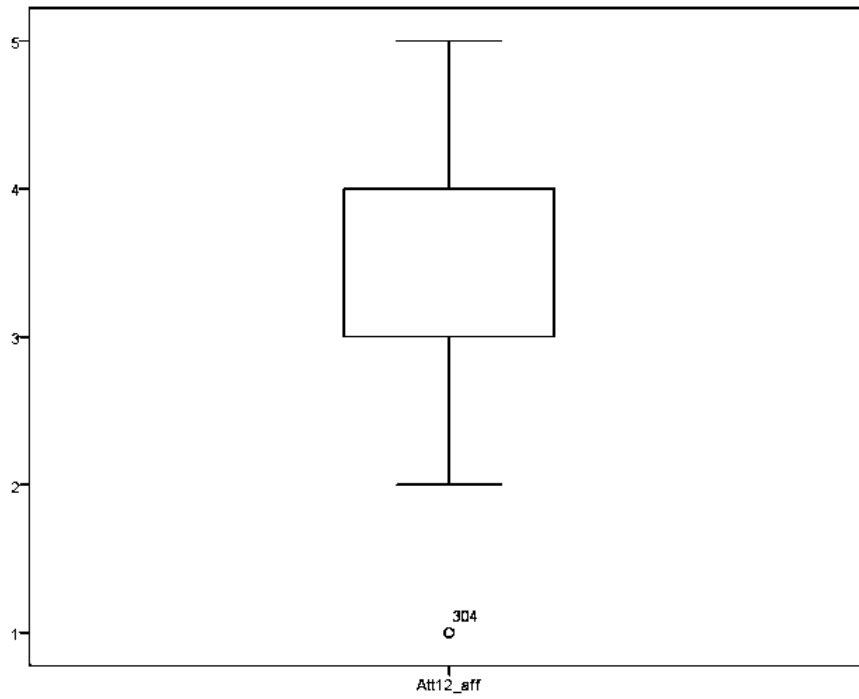
Indicator Variable: Att10\_cog



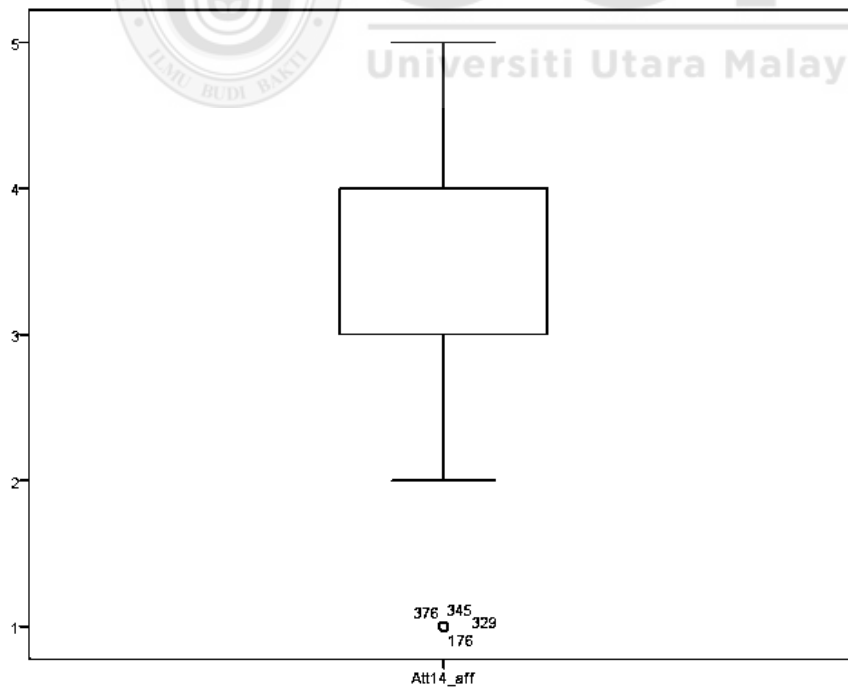
Indicator Variable: Att11\_aff



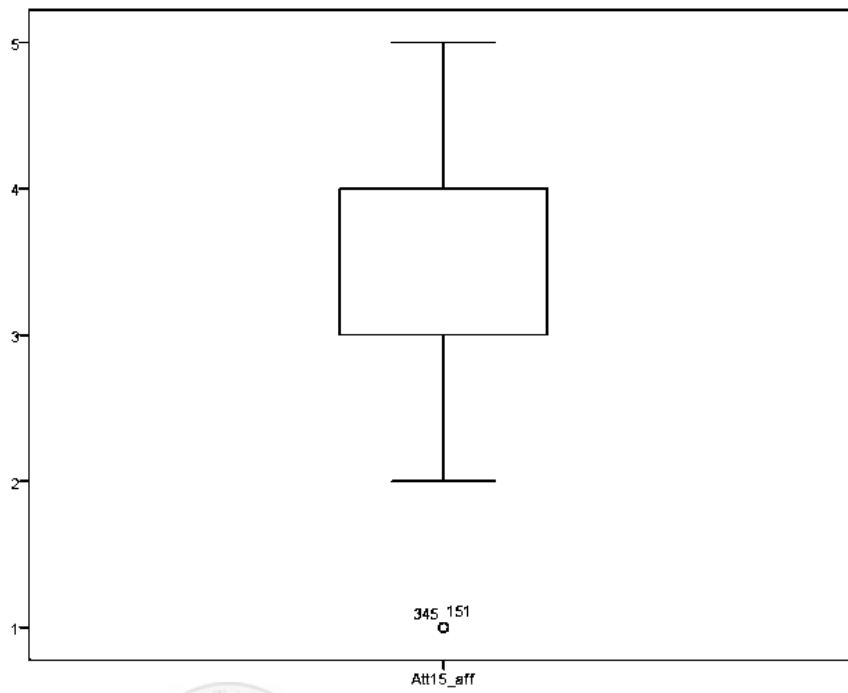
Indicator Variable: Att12\_aff



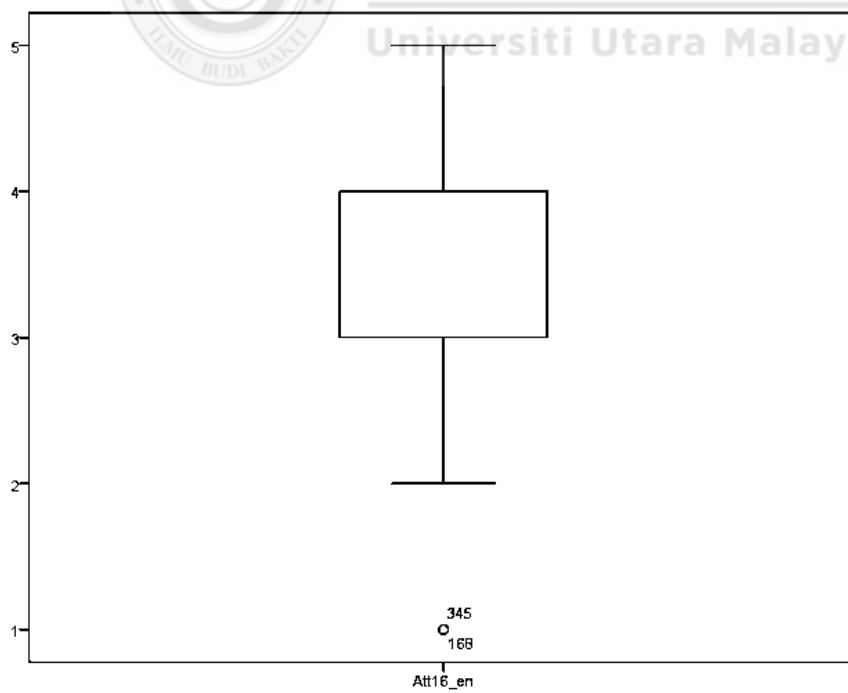
Indicator Variable: Att14\_aff



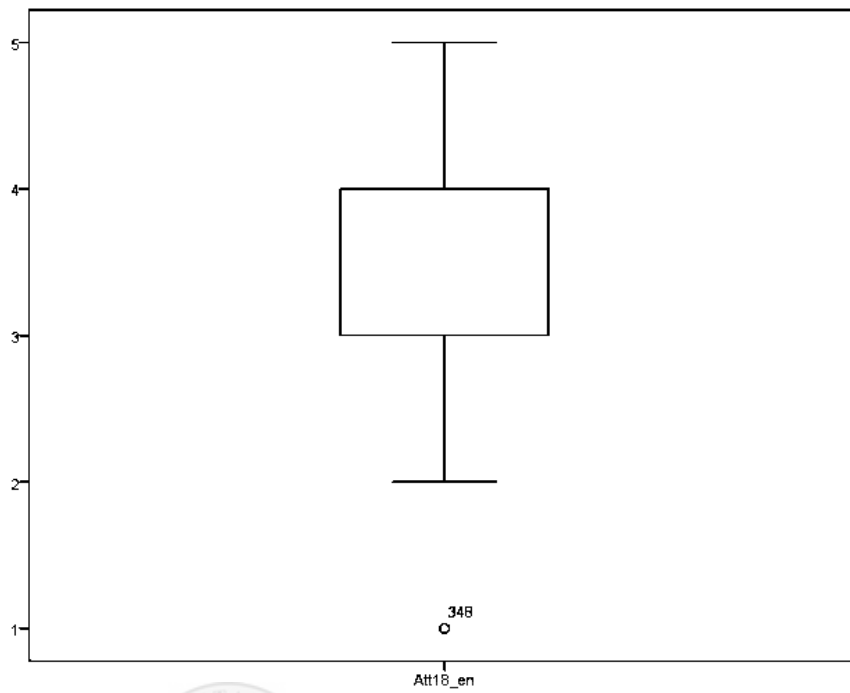
Indicator Variable: Att15\_aff



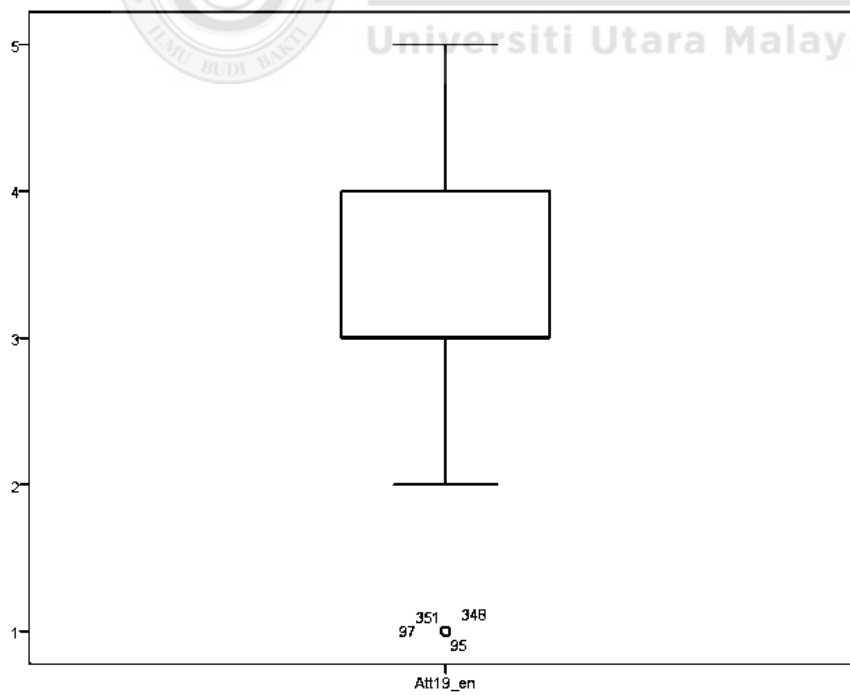
Indicator Variable: Att16\_en



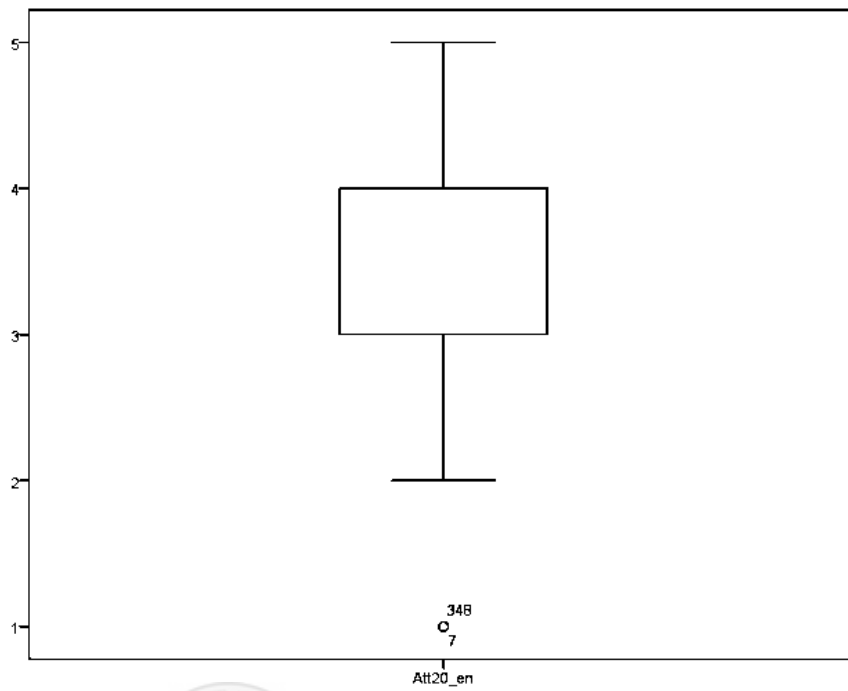
Indicator Variable: Att18\_en



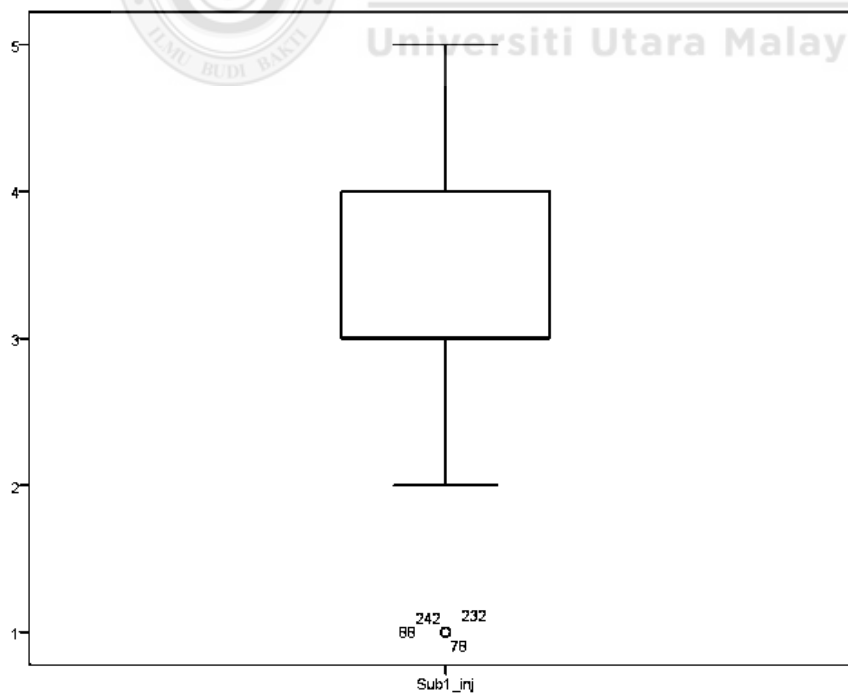
Indicator Variable: Att19\_en



Indicator Variable: Att20\_en

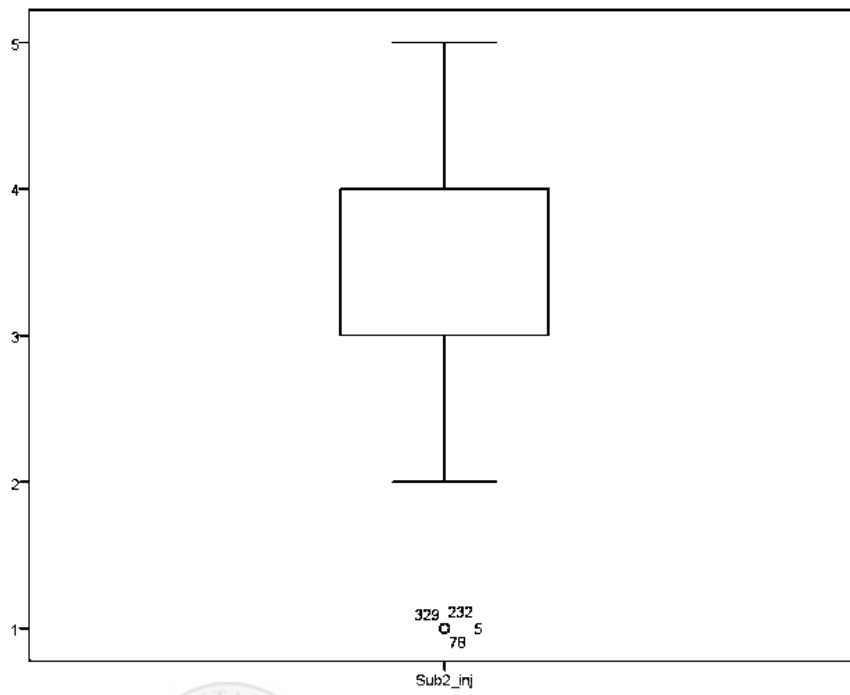


Indicator Variable: Sun1\_inj

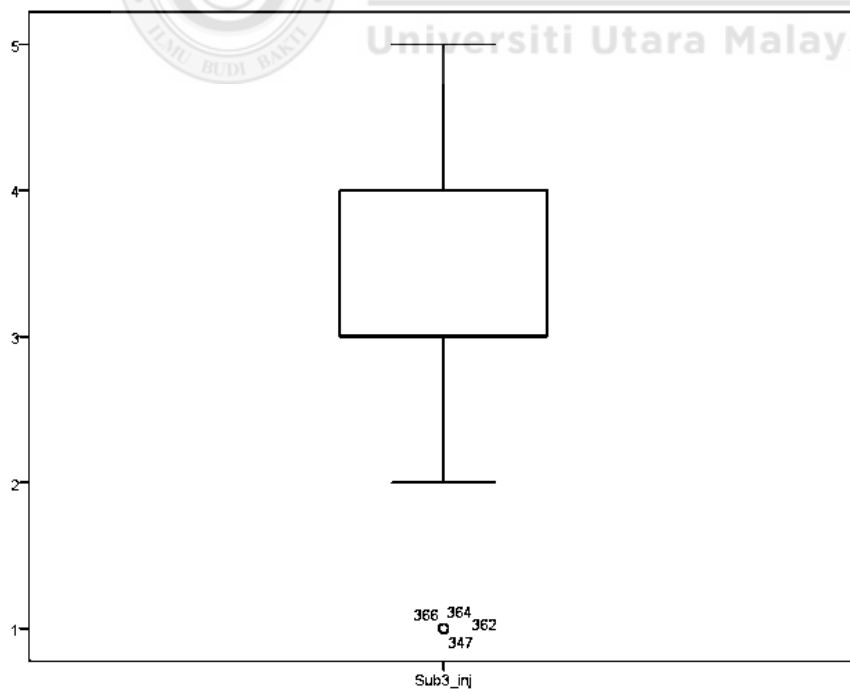




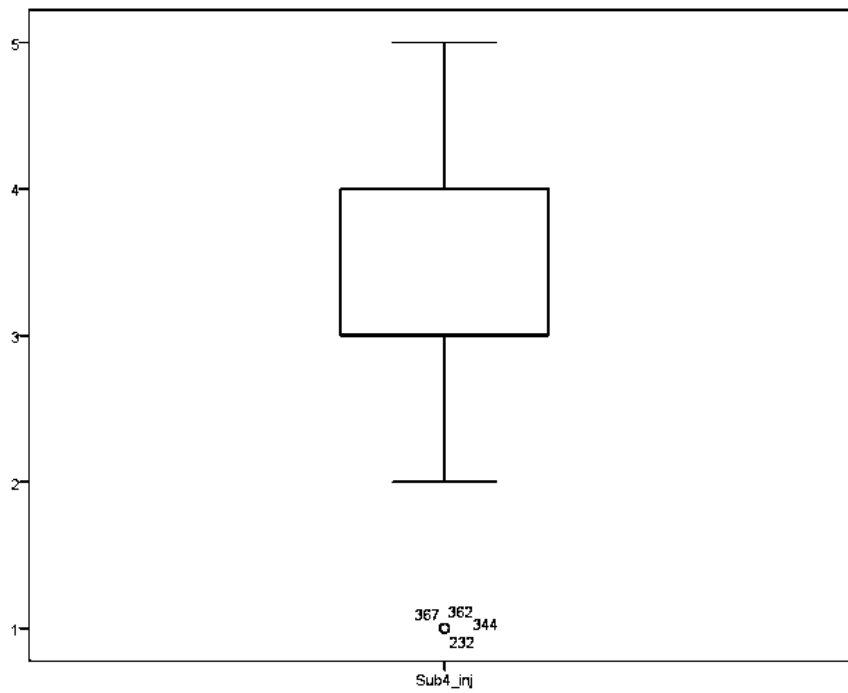
Indicator variable: Sub2\_inj



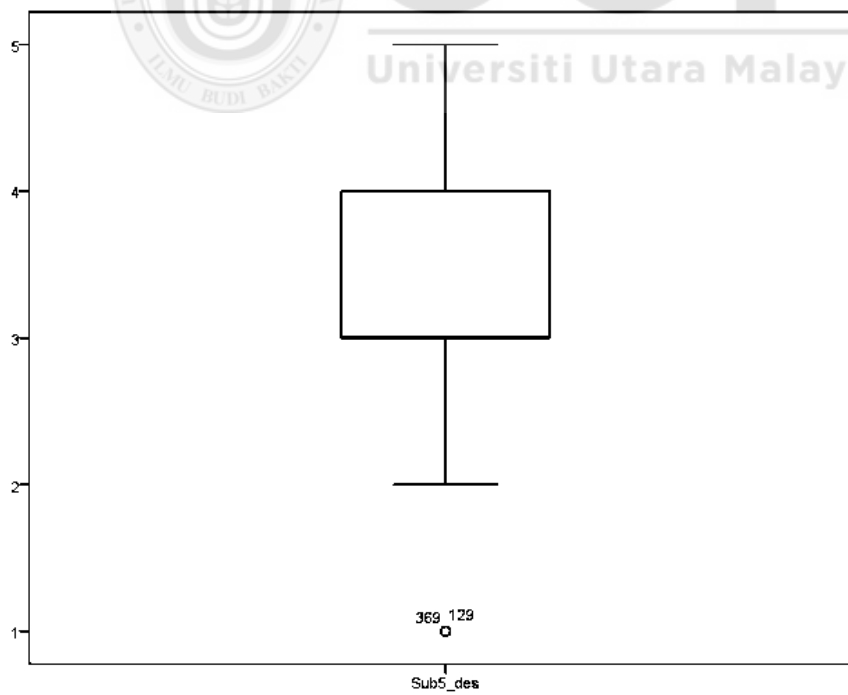
Indicator variable: Sub3\_inj



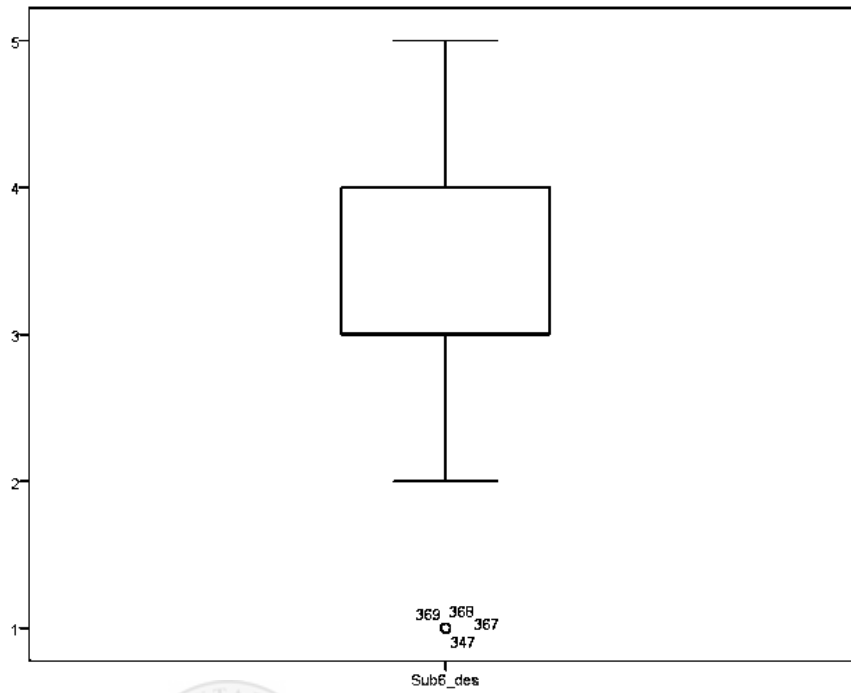
Indicator variable: Sub4\_inj



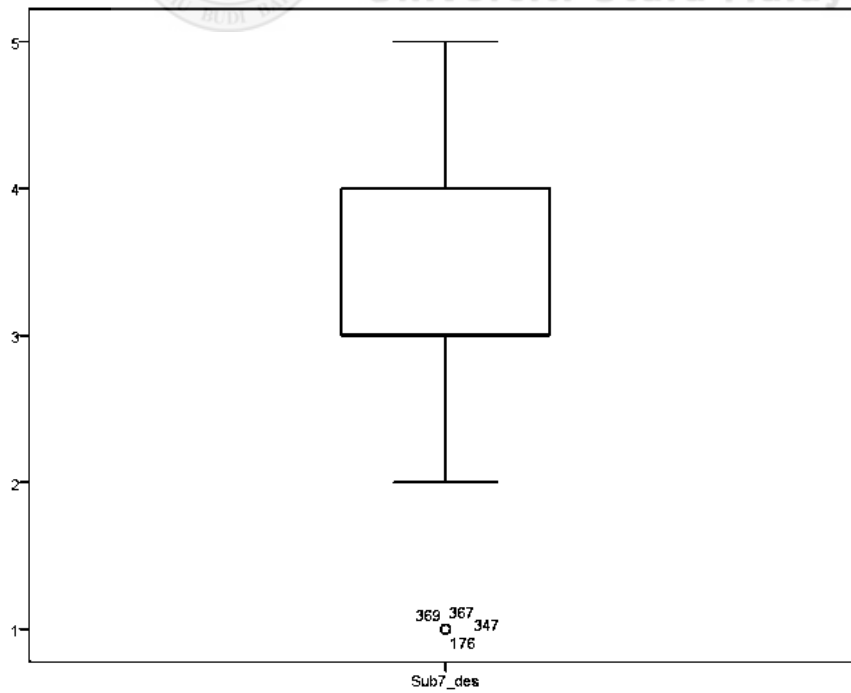
Indicator variable: Sub5\_des



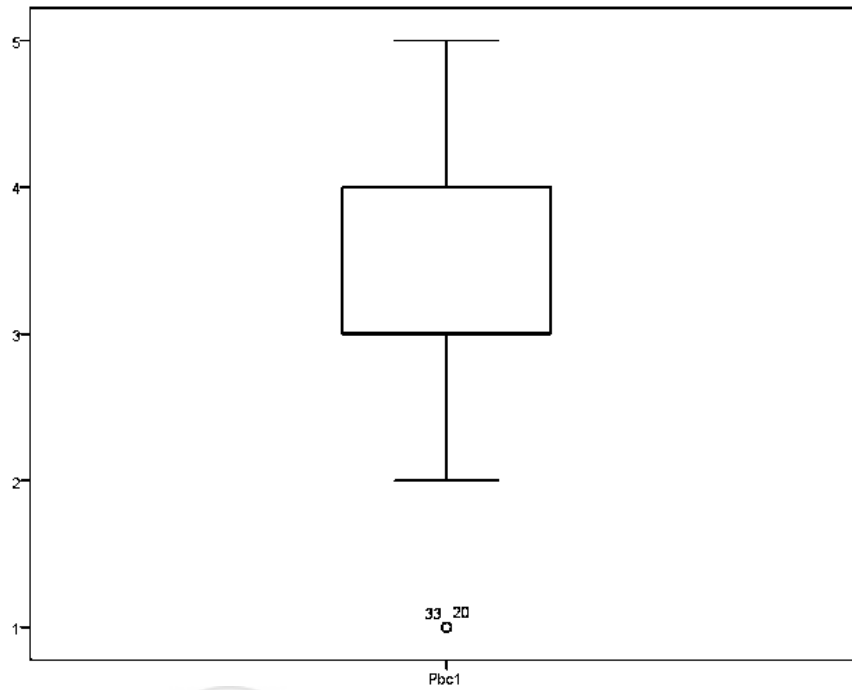
Indicator variable: Sub6\_des



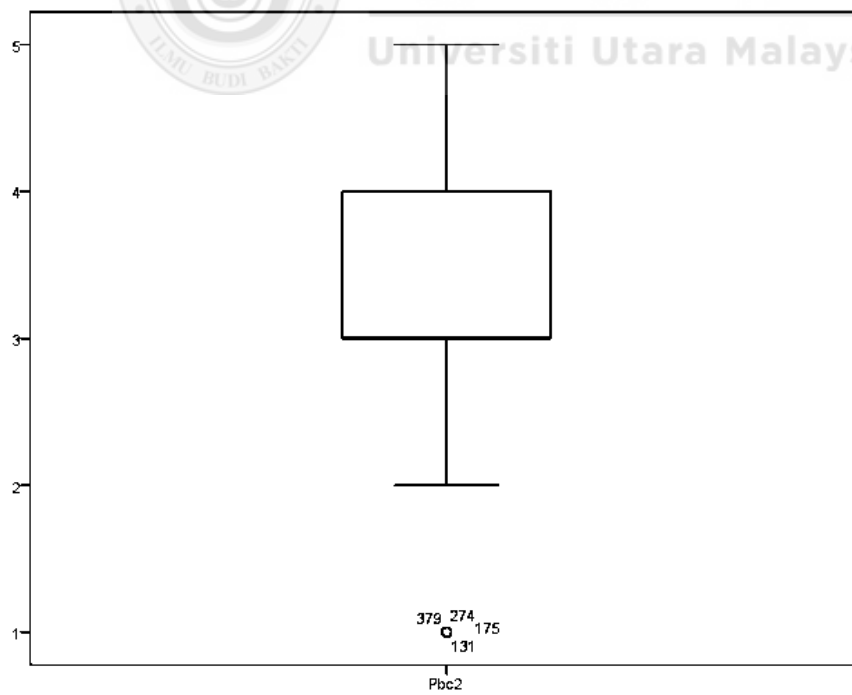
Indicator variable: Sub7\_des



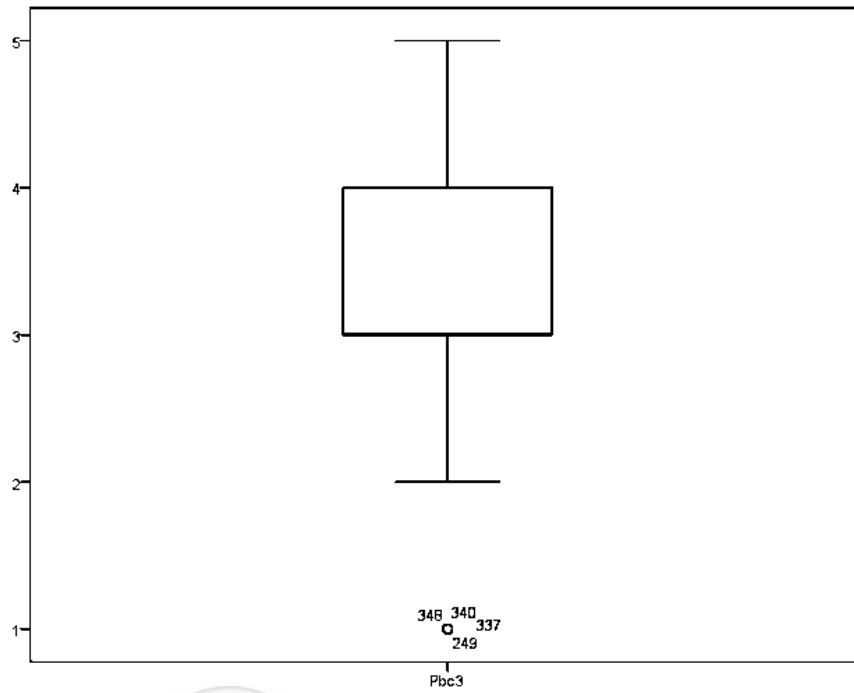
Indicator variable: Pbc1



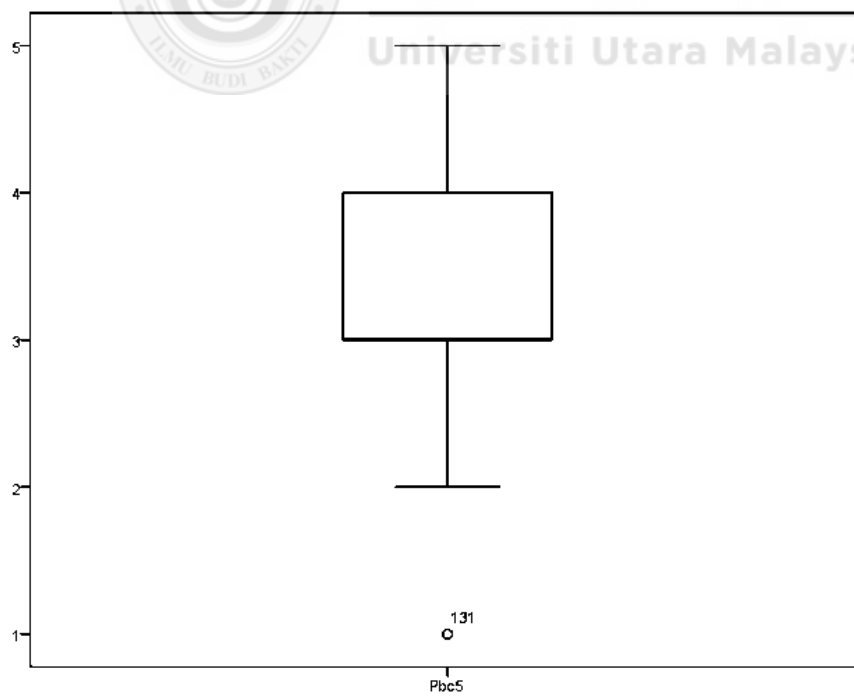
Indicator variable: Pbc2



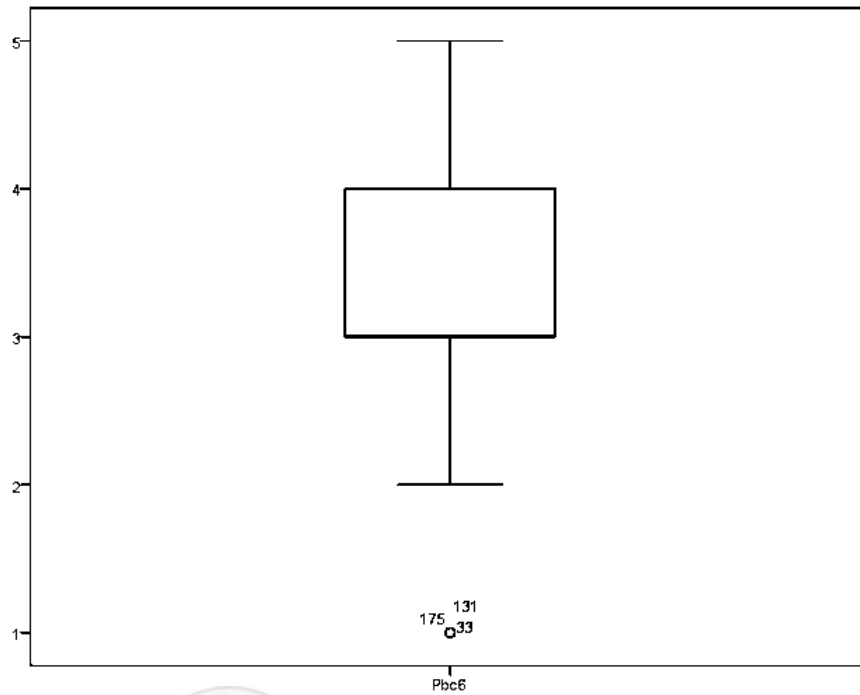
Indicator variable: Pbc3



Indicator variable: Pbc5



Indicator variable: Pbc6



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### APPENDIX G: Multivariate Outlier Identification

Serial ID*	Att	Sub.Norm	PBC	Intention	D <sup>2</sup>	p**
329	1.70	2.00	3.83	3.00	19.7184	0.0002
88	3.20	2.38	4.83	3.50	13.1334	0.0044
242	2.60	2.00	4.33	4.50	13.0541	0.0045
353	4.50	2.25	2.67	3.83	12.7887	0.0051
375	4.20	4.75	4.83	4.83	12.7367	0.0052
368	4.35	2.13	2.67	4.33	12.0264	0.0073
345	2.05	2.63	3.33	2.00	10.9460	0.0120
303	3.45	2.75	4.83	3.83	10.8400	0.0126
362	3.60	1.63	3.17	3.67	10.6175	0.0140
140	3.00	3.00	4.83	3.50	10.5622	0.0143

\*Only first ten cases are shown, sorted by p-values in ascending order.

\*\*Critical p-value < 0.001 (Kline, 2011).

## APPENDIX H: Univariate Normality Tests

<b>Tests of Normality</b>						
Indicators	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.*
Beh1	.271	416	.000	.808	416	.000
Beh2	.188	416	.000	.911	416	.000
Beh3	.189	416	.000	.908	416	.000
Beh4	.220	416	.000	.858	416	.000
Beh5	.184	416	.000	.911	416	.000
Beh6	.171	416	.000	.899	416	.000
Int1	.227	416	.000	.864	416	.000
Int2	.221	416	.000	.881	416	.000
Int3	.223	416	.000	.881	416	.000
Int4	.211	416	.000	.884	416	.000
Int5	.217	416	.000	.881	416	.000
Int6	.220	416	.000	.876	416	.000
Hab1	.207	416	.000	.893	416	.000
Hab2	.190	416	.000	.908	416	.000
Hab3	.206	416	.000	.904	416	.000
Hab4	.182	416	.000	.915	416	.000
Trust1	.225	416	.000	.883	416	.000
Trust2	.196	416	.000	.900	416	.000
Trust3	.212	416	.000	.894	416	.000
Trust4	.193	416	.000	.902	416	.000
Trust5	.221	416	.000	.898	416	.000
Trust6	.202	416	.000	.904	416	.000
Situ1	.184	416	.000	.909	416	.000
Situ2	.190	416	.000	.911	416	.000
Situ3	.162	416	.000	.916	416	.000
Situ4	.170	416	.000	.916	416	.000
Att1_h	.274	416	.000	.850	416	.000
Att2_h	.261	416	.000	.865	416	.000
Att3_h	.236	416	.000	.866	416	.000
Att4_h	.180	416	.000	.914	416	.000
Att5_h	.253	416	.000	.862	416	.000
Att6_cog	.236	416	.000	.864	416	.000
Att7_cog	.248	416	.000	.855	416	.000
Att8_cog	.180	416	.000	.913	416	.000
Att9_cog	.233	416	.000	.871	416	.000
Att10_cog	.201	416	.000	.903	416	.000
Att11_aff	.202	416	.000	.907	416	.000
Att12_aff	.227	416	.000	.873	416	.000



(Continuation)

Indicators	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.*
Att13_aff	.242	416	.000	.870	416	.000
Att14_aff	.210	416	.000	.900	416	.000
Att15_aff	.207	416	.000	.877	416	.000
Att16_en	.236	416	.000	.867	416	.000
Att17_en	.237	416	.000	.863	416	.000
Att18_en	.244	416	.000	.863	416	.000
Att19_en	.210	416	.000	.901	416	.000
Att20_en	.224	416	.000	.878	416	.000
Sub1_inj	.225	416	.000	.880	416	.000
Sub2_inj	.239	416	.000	.880	416	.000
Sub3_inj	.203	416	.000	.900	416	.000
Sub4_inj	.212	416	.000	.895	416	.000
Sub5_des	.217	416	.000	.885	416	.000
Sub6_des	.219	416	.000	.897	416	.000
Sub7_des	.214	416	.000	.889	416	.000
Sub8_des	.178	416	.000	.914	416	.000
Pbc1	.262	416	.000	.873	416	.000
Pbc2	.258	416	.000	.875	416	.000
Pbc3	.248	416	.000	.883	416	.000
Pbc4	.227	416	.000	.894	416	.000
Pbc5	.278	416	.000	.844	416	.000
Pbc6	.271	416	.000	.863	416	.000

a. Lilliefors Significance Correction

\* Critical p-value < 0.05

## APPENDIX I: Skewness and Kurtosis

### *Skewness and Kurtosis*

Indicators		Bootstrap <sup>a</sup> and 95% Confidence Interval					
		Statistic	Std. Error	Bias	Std. Error	Lower	Upper
Beh1	Skewness	.681	.120	-.003	.081	.528	.831
	Kurtosis	-.741	.239	.005	.141	-.978	-.434
Beh2	Skewness	.125	.120	-.002	.067	-.007	.250
	Kurtosis	-.608	.239	.003	.099	-.790	-.407
Beh3	Skewness	.152	.120	-.003	.071	.014	.279
	Kurtosis	-.824	.239	.002	.087	-.986	-.641
Beh4	Skewness	.718	.120	-.002	.076	.578	.861
	Kurtosis	-.370	.239	.003	.166	-.650	-.033
Beh5	Skewness	-.015	.120	-.002	.078	-.166	.132
	Kurtosis	-.520	.239	.002	.096	-.695	-.316
Beh6	Skewness	-.226	.120	.002	.071	-.367	-.081
	Kurtosis	-.996	.239	.006	.078	-1.135	-.828
Int1	Skewness	-.065	.120	.002	.074	-.205	.089
	Kurtosis	-.663	.239	.003	.090	-.835	-.472
Int2	Skewness	-.258	.120	.003	.089	-.435	-.077
	Kurtosis	-.454	.239	-.004	.179	-.763	-.108
Int3	Skewness	-.264	.120	.004	.096	-.463	-.063
	Kurtosis	-.291	.239	-.007	.198	-.650	.088
Int4	Skewness	-.374	.120	.006	.089	-.557	-.177
	Kurtosis	-.311	.239	-.011	.184	-.642	.012
Int5	Skewness	-.303	.120	.005	.084	-.481	-.120
	Kurtosis	-.537	.239	-.007	.171	-.830	-.213
Int6	Skewness	-.403	.120	.003	.077	-.567	-.245
	Kurtosis	-.669	.239	.001	.156	-.926	-.352
Hab1	Skewness	.123	.120	-.001	.087	-.046	.294
	Kurtosis	-.497	.239	-.003	.119	-.715	-.269
Hab2	Skewness	.154	.120	-.001	.077	.003	.300
	Kurtosis	-.400	.239	.002	.111	-.602	-.175
Hab3	Skewness	-.054	.120	-.002	.076	-.194	.085
	Kurtosis	-.629	.239	.001	.103	-.819	-.413
Hab4	Skewness	.091	.120	-.002	.070	-.044	.222
	Kurtosis	-.583	.239	.002	.096	-.755	-.385
Trust1	Skewness	.146	.120	-.005	.101	-.056	.331
	Kurtosis	-.109	.239	-.009	.174	-.430	.206
Trust2	Skewness	.187	.120	-.004	.083	.025	.339
	Kurtosis	-.403	.239	-.002	.133	-.644	-.147
Trust3	Skewness	.251	.120	-.004	.087	.086	.410
	Kurtosis	-.293	.239	-.005	.158	-.570	-.003
Trust4	Skewness	.374	.120	-.002	.069	.239	.504
	Kurtosis	-.395	.239	.002	.125	-.627	-.137
Trust5	Skewness	.258	.120	-.003	.083	.099	.410
	Kurtosis	-.435	.239	-.006	.127	-.656	-.198
Trust6	Skewness	.166	.120	-.005	.079	.013	.310
	Kurtosis	-.355	.239	-.002	.123	-.581	-.116
Situ1	Skewness	-.102	.120	.000	.079	-.255	.056
	Kurtosis	-.538	.239	.001	.095	-.702	-.344
Situ2	Skewness	-.213	.120	.000	.067	-.349	-.079
	Kurtosis	-.830	.239	.004	.085	-.985	-.648

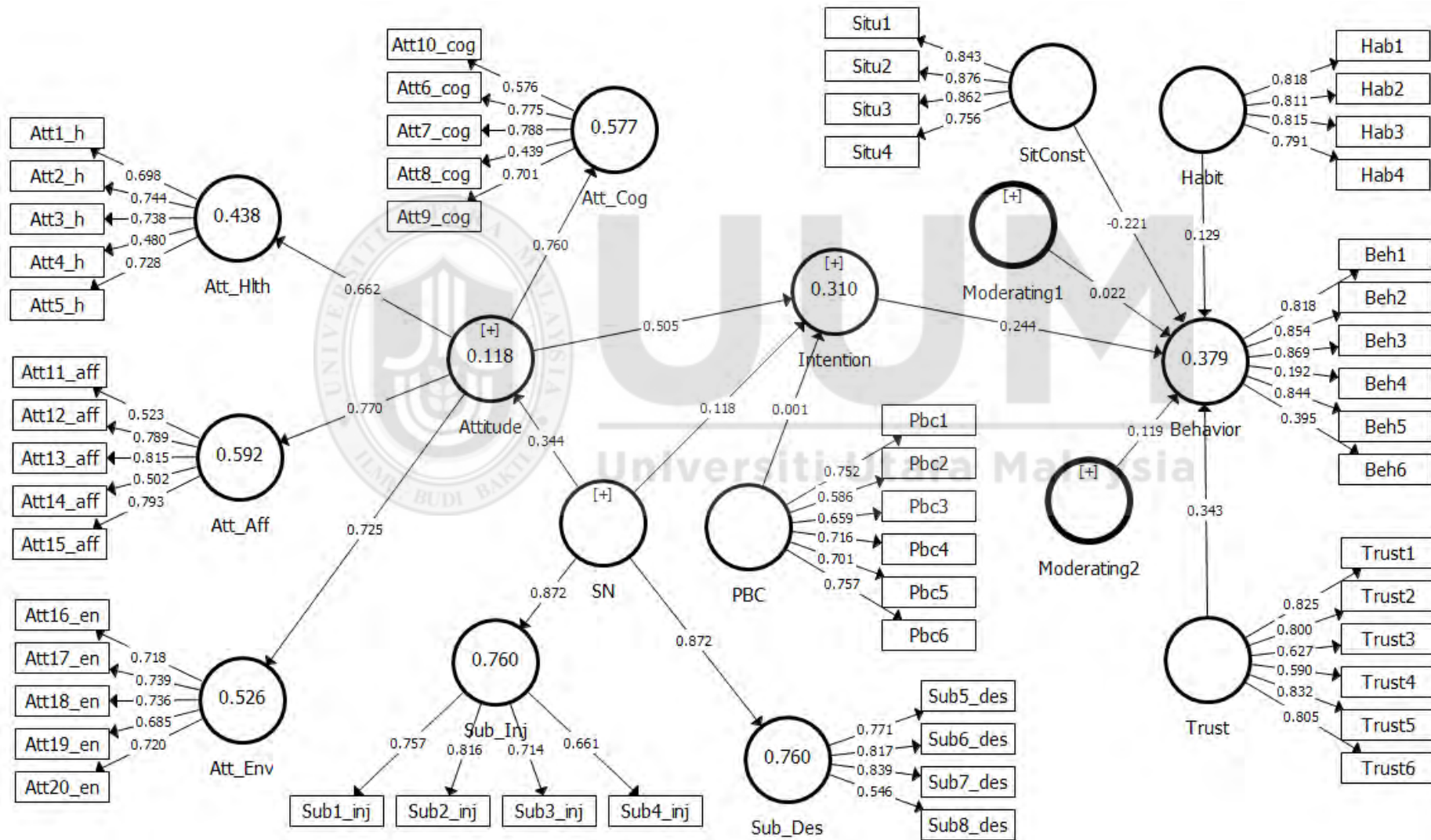
(Continuation)		Bootstrap <sup>a</sup> and 95% Confidence Interval					
Indicators		Statistic	Std. Error	Bias	Std. Error	Lower	Upper
Situ3	Skewness	.019	.120	-.001	.067	-.108	.150
	Kurtosis	-.836	.239	.007	.074	-.981	-.660
Situ4	Skewness	-.103	.120	-.002	.067	-.233	.019
	Kurtosis	-.789	.239	.006	.080	-.940	-.610
Att1_h	Skewness	-.157	.120	.002	.083	-.321	.014
	Kurtosis	-.291	.239	-.002	.094	-.465	-.108
Att2_h	Skewness	-.198	.120	.001	.090	-.381	-.014
	Kurtosis	-.258	.239	-.004	.164	-.503	.044
Att3_h	Skewness	-.132	.120	.004	.107	-.351	.085
	Kurtosis	-.225	.239	-.013	.226	-.606	.188
Att4_h	Skewness	-.161	.120	-.001	.069	-.298	-.031
	Kurtosis	-.724	.239	.002	.086	-.879	-.543
Att5_h	Skewness	-.140	.120	.002	.099	-.344	.061
	Kurtosis	-.259	.239	-.011	.192	-.535	.071
Att6_cog	Skewness	-.016	.120	-.001	.075	-.163	.123
	Kurtosis	-.474	.239	.003	.074	-.624	-.324
Att7_cog	Skewness	-.027	.120	.001	.082	-.187	.138
	Kurtosis	-.376	.239	-.002	.067	-.512	-.253
Att8_cog	Skewness	-.196	.120	-.002	.069	-.328	-.065
	Kurtosis	-.620	.239	.006	.097	-.793	-.401
Att9_cog	Skewness	-.071	.120	.003	.097	-.274	.132
	Kurtosis	-.232	.239	-.009	.163	-.490	.056
Att10_cog	Skewness	-.272	.120	.003	.079	-.426	-.112
	Kurtosis	-.390	.239	-.002	.129	-.625	-.140
Att11_aff	Skewness	-.250	.120	.002	.073	-.394	-.097
	Kurtosis	-.606	.239	.000	.108	-.791	-.396
Att12_aff	Skewness	-.270	.120	.003	.078	-.431	-.107
	Kurtosis	-.591	.239	-.004	.154	-.826	-.297
Att13_aff	Skewness	-.275	.120	.000	.065	-.398	-.149
	Kurtosis	-.647	.239	.007	.098	-.827	-.431
Att14_aff	Skewness	-.321	.120	.003	.073	-.464	-.172
	Kurtosis	-.738	.239	.000	.111	-.930	-.512
Att15_aff	Skewness	-.187	.120	.002	.086	-.352	-.014
	Kurtosis	-.597	.239	-.004	.166	-.876	-.275
Att16_en	Skewness	-.056	.120	.001	.104	-.259	.144
	Kurtosis	-.188	.239	-.008	.185	-.490	.153
Att17_en	Skewness	.046	.120	.000	.075	-.103	.196
	Kurtosis	-.526	.239	.000	.077	-.679	-.376
Att18_en	Skewness	.020	.120	.001	.094	-.168	.209
	Kurtosis	-.297	.239	-.001	.154	-.521	-.005
Att19_en	Skewness	-.339	.120	.002	.079	-.498	-.173
	Kurtosis	-.267	.239	.001	.133	-.503	-.004
Att20_en	Skewness	-.077	.120	.002	.089	-.260	.104
	Kurtosis	-.354	.239	-.004	.154	-.605	-.064
Sub1_inj	Skewness	-.152	.120	.002	.096	-.348	.042
	Kurtosis	-.202	.239	-.006	.166	-.492	.115
Sub2_inj	Skewness	-.197	.120	.001	.090	-.379	-.018
	Kurtosis	-.325	.239	-.001	.162	-.599	-.017
Sub3_inj	Skewness	-.215	.120	.001	.085	-.386	-.045
	Kurtosis	-.334	.239	-.001	.131	-.560	-.073
Sub4_inj	Skewness	-.115	.120	.002	.085	-.286	.061
	Kurtosis	-.345	.239	-.003	.141	-.602	-.078

(Continuation)		Bootstrap <sup>a</sup> and 95% Confidence Interval					
Indicators		Statistic	Std. Error	Bias	Std. Error	Lower	Upper
Sub5_des	Skewness	-.054	.120	.002	.084	-.225	.116
	Kurtosis	-.449	.239	-.001	.132	-.674	-.187
Sub6_des	Skewness	-.064	.120	.002	.086	-.232	.107
	Kurtosis	-.392	.239	-.001	.137	-.638	-.121
Sub7_des	Skewness	-.091	.120	.004	.085	-.267	.086
	Kurtosis	-.420	.239	-.004	.144	-.671	-.151
Sub8_des	Skewness	-.145	.120	.003	.072	-.289	.005
	Kurtosis	-.623	.239	-.002	.095	-.787	-.442
Pbc1	Skewness	.243	.120	-.002	.085	.081	.402
	Kurtosis	-.261	.239	-.002	.144	-.511	.018
Pbc2	Skewness	.032	.120	.002	.102	-.168	.237
	Kurtosis	.018	.239	-.006	.165	-.273	.322
Pbc3	Skewness	.155	.120	.000	.094	-.035	.336
	Kurtosis	-.164	.239	-.003	.145	-.423	.119
Pbc4	Skewness	.142	.120	-.001	.087	-.036	.312
	Kurtosis	-.303	.239	-.001	.125	-.527	-.072
Pbc5	Skewness	.188	.120	-.001	.092	.000	.361
	Kurtosis	-.222	.239	-.005	.182	-.547	.127
Pbc6	Skewness	.111	.120	-.001	.102	-.096	.302
	Kurtosis	-.093	.239	-.006	.170	-.391	.227

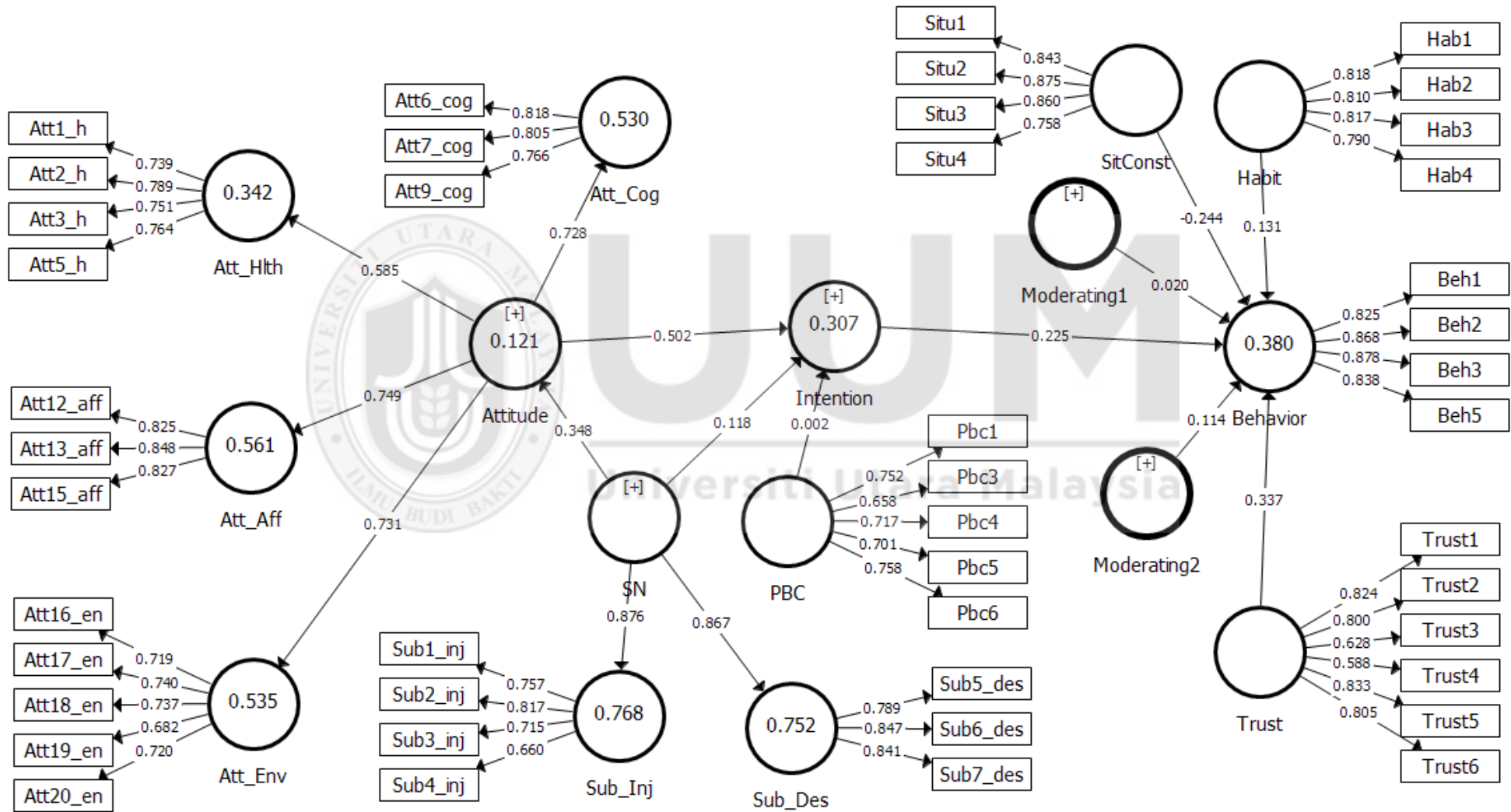
a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples



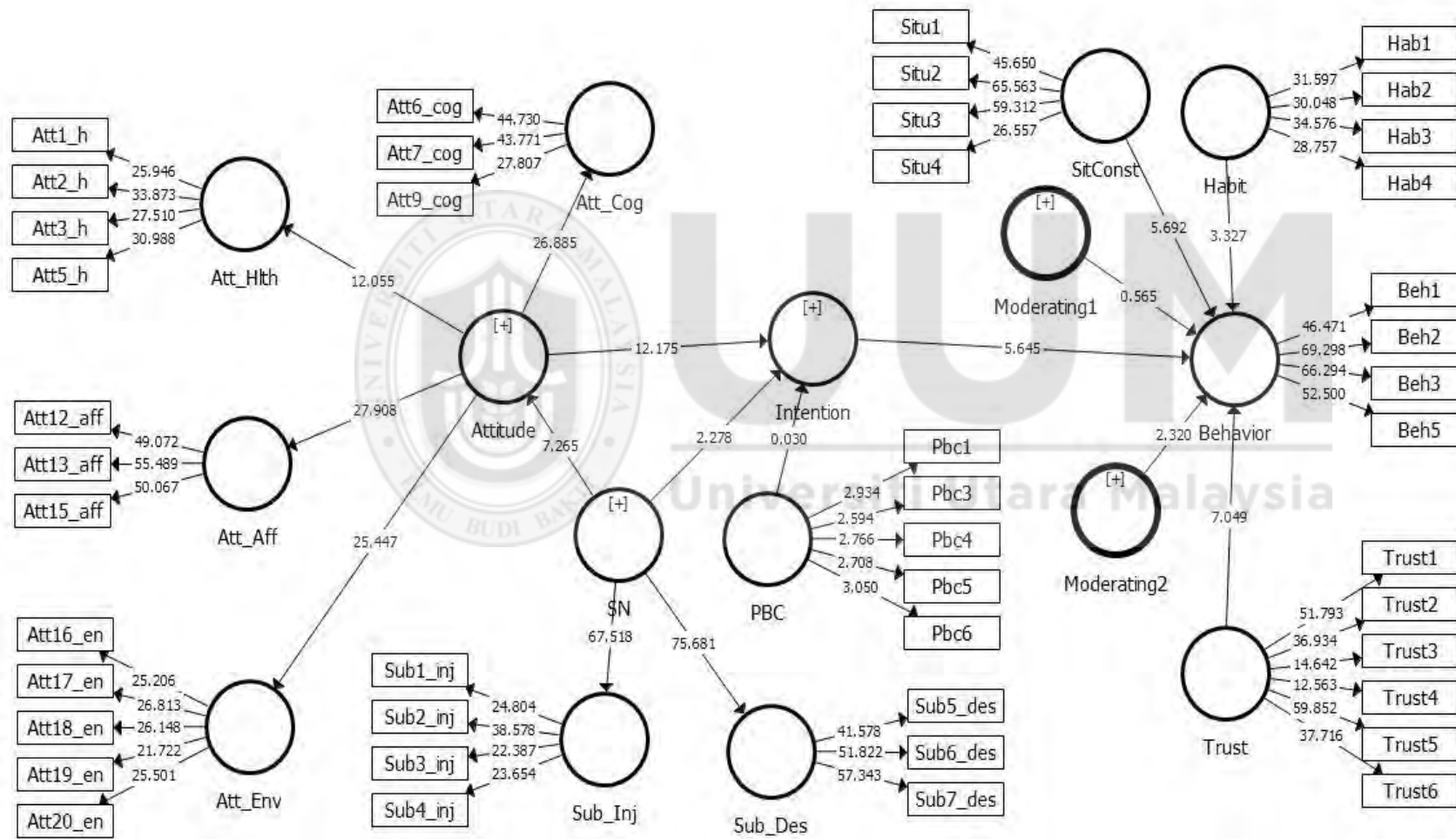
### APPENDIX J: Model Specification and First-run of PLS Algorithm



### APPENDIX K: Final Model after Conducting CFA



### APPENDIX L: Final Model Showing Bootstrap Results



### APPENDIX M: Stone-Geissure Predictive Validity

Constructs	Cross-validated Redundancy	Cross-validated Communality
Att_Aff	0.386	0.430
Att_Cog	0.330	0.351
Att_Env	0.268	0.284
Att_Hlth	0.193	0.176
Attitude	0.029	0.019
Behavior	0.269	0.294
Intention	0.149	0.115
Sub_Des	0.508	0.563
Sub_Inj	0.403	0.408

