STUDY ON PROBABILITY DISTRIBUTION AND TRENDS OF VARIOUS CLIMATIC PARAMETERS IN BANGLADESH

BY

NADIA NOWSHIN

DEPARTMENT OF WATER RESOURCES ENGINEERING

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY

March 2013

A thesis submitted

To the Department of Water Resources Engineering,
Bangladesh University of Engineering and Technology (BUET) for the partial fulfillment of the degree of Master of Science (M. Sc) in
Water Resources Engineering.

Submitted by

NADIA NOWSHIN

Roll No. 100716004 (F)

DEPARTMENT OF WATER RESOURCES ENGINEERING

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY

March 2013

Declaration

This thesis work has been done by the candidate herself and does not contain any material extracted from elsewhere or from a work published by any body else. The work of the thesis has not been presented elsewhere by the author for any degree or diploma. No other persons work has been used or included without due acknowledgement.

Nadia Nowshin

M.Sc. Candidate

Student No: 100716004F

Session: October 2007

Certification of Thesis Work

This thesis titled “Study on probability distribution and trends of various climatic parameters in Bangladesh” submitted by Nadia Nowshin, Student No: 100716004F, session: October 2007 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Master of Science in Water Resources Engineering on September 29, 2012.

Board of Examiners

1. ---------- Chairman
   Dr. Md. Sabbir Mostafa Khan
   Professor
   Department of Water Resources Engineering,
   BUET, Dhaka.

2. ---------- Member (Ex-officio)
   Dr. Umme Kulsum Navera
   Professor & Head
   Department of Water Resources Engineering,
   BUET, Dhaka.

3. ---------- Member
   Dr. M Fazlul Bari
   Professor
   Department of Water Resources Engineering,
   BUET, Dhaka.

4. ---------- Member (External)
   Mr. Giasuddin Ahmed Choudhury
   Executive Director
   CEGIS
   Gulshan-1, Dhaka.

Acknowledgement

First of all, I express my deepest gratitude to the most merciful and most gracious Almighty Allah for the blessings. He bestowed upon me throughout my life. Acknowledgements are due to the authorities of Bangladesh University of Engineering and Technology (BUET) for providing me the opportunities to conduct the M.Sc studies and perform the research work on the topic “Study on probability distribution and trends of various climatic parameters in Bangladesh”.

The acknowledgment is due to my supervisor Dr. Sabbir Mostafa Khan, Professor, Department of Water Resources Engineering, BUET for providing me continuous supervision of this thesis.

Last but not the least, I whole-heartedly thank my family, especially my husband, Dr. Miah M. Hussainuzzaman, without whom I am sure that it would not be possible on my part to complete this dissertation.

Abstract

Probability Distribution and trend analysis are an important concern for a resource constraint country like Bangladesh. Reliable estimate of probability distribution and trend analysis with respect to various climatic parameters are a valuable guide for policy makers in determining return period and risk analysis of flood, drought, cyclones and other extreme climate events for the fixation of infrastructure required in future. Again, from trend analysis, gradual change of climatic phenomenon that is, global warming, global dimming, wetter summer, drier winter etc can be understood.

Standard set of monthly, annual and seasonal data of different climatologic parameters of different meteorological stations in Bangladesh are analyzed in this study have been collected from BMD (Bangladesh Meteorological Department) and BARC (Bangladesh Agricultural Research Council). Different climatologic parameters are rainfall, temperature, evaporation, relative humidity, bright sunshine hours, wind speed & solar radiation. Trend analysis and probability distribution study has been carried out to analyze the data series.

From trend analysis it can be understood that there is a gradual change of climatic phenomenon in Bangladesh over the last three decades. From the probability distribution study of different climatic parameters, it can be understood that, particular variable follows particular probability distribution. From the analysis of weighted average method, best fitted distribution has been fixed for a particular variable of a particular climatic parameter.

From the analysis of different climatic parameters, it has been predicted that Bangladesh is in the risk of climate change i.e. global warming due to increase in overall temperature. Again, increasing tendency of relative humidity along with increasing rate of rainfall in summer predominating wetter summer and decreasing tendency of relative humidity along with decreasing rate of rainfall in winter indicates drier winter.

Table of Contents

Acknowledgement v

Abstract vi

Table of Contents vii

List of Tables ix

List of Figures ix

Chapter 1 Introduction

1.1 Background of the study 1

1.2 Objective of the study 2

1.3 Study Area 3

1.4 Scope of work 6

1.5 Organization of the thesis 6

Chapter 2 Literature Review

2.1 General 7

2.2 Review Of Previous Studies 7

2.2.1 International studies 7

2.2.2 National studies 13

2.3 Summery 18

Chapter 3 Theory and Methodology

3.1 General 19

3.2 Theory 19

3.2.1 Probability Distribution 19

3.2.2 Trend analysis 19

3.3 Data source 20

3.3.1 Temperature 20

3.3.2 Rainfall 20

3.3.3 Solar radiation 20

3.3.4 Wind speed 20

3.3.5 Relative humidity 20

3.3.6 Bright sunshine hour 21

3.3.7 Evaporation rate 21

3.4 Data processing 21

3.5 Data analysis 21

3.5.1 Preliminary analysis 22

3.5.2 Trend analysis 22

3.5.3 Probability distribution study 22

3.5.4 Goodness of fit test and estimation and tabulation of Chi-square value 23

3.5.5 Comparison of Chi-square value with critical Chi-square value 23

Chapter 4 Results and Discussions

4.1 General 24

4.2 Trend Analysis 24

4.2.1 Trend of different Rainfall Variables 24

4.2.2 Trend of different Evaporation Rate Variables 24
4.2.3 Trend of different Temperature Variables 25
4.2.4 Trend of different Solar Radiation Variables 26
4.2.5 Trend of different wind Speed Variables 26
4.2.6 Trend of different Bright Sunshine Hour Variables 26
4.2.7 Trend of different Relative Humidity Variables 26
4.3 Probability distribution study 26
4.3.1 Probability Distribution of different Rainfall Variables 26
4.3.2 Probability Distribution of different Evaporation Rate Variables 27
4.3.3 Probability Distribution of different Temperature Variables 27
4.3.4 Probability Distribution of different Solar Radiation Variables 28
4.3.5 Probability Distribution of different Wind Speed Variables 28
4.3.6 Probability Distribution of different Bright Sunshine Hours Variables 28
4.3.7 Probability Distribution of different Relative Humidity Variables 28
4.4 Comparison of Chi-square value with critical Chi-square value 28
4.4.1 Comparison of Chi-square value with critical Chi-square value of different Rainfall Variables 28
4.4.2 Comparison of Chi-square value with critical Chi-square value of different Evaporation Rate Variables 29
4.4.3 Comparison of Chi-square value with critical Chi-square value of different Temperature Variables 29
4.4.4 Comparison of Chi-square value with critical Chi-square value of different Wind Speed Variables 29
4.4.5 Comparison of Chi-square value with critical Chi-square value of different Bright Sunshine Hours Variables 30
4.4.6 Comparison of Chi-square value with critical Chi-square value of different Relative Humidity Variables 30
4.5 Interpretation of climate parameters 30

Chapter 5 Conclusions and recommendations

5.1 General 32
5.2 Conclusions 32
5.3 Recommendations 34

References **35**

Appendix A Trend analysis graphs & charts 42

Appendix B Probability distribution charts 75

Appendix C Terminology and Relevant Theory 206

Appendix D Sample Calculation 221

List of Tables

Table 1.1: List of Regions for data stations 3

Table 1.2: Project Area 5

Table 4.1: Calculation of degrees of freedom 30

List of Figures

Figure 1.1 Locations of the Meteorological Stations over Bangladesh 4

Chapter 1
INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Probability distribution and trend analysis are an important concern for a resource constraint country like Bangladesh. Trend analysis and probability distribution study are useful to estimate design variables for hydraulic structures are uses like crop yield forecasting (Sarker et. al., 2012), predicting favorable and unfavorable climatic events. Valuable guide for policy makers in determining return period and risk analysis of flood, drought, cyclones and other extreme climatic events for the fixation of infrastructure required in future. From trend analysis, gradual change of climatic phenomenon that is, global warming, global dimming, wetter summer, drier winter etc can be understood.

Climate unpredictability and change in climatic parameters have direct influence on environment and human existence. A negative change in the climate, always have its corresponding dysfunctional impacts on man and the ecosystem globally or locally. Flooding, poor agricultural yields, famine, and even death are some of the catastrophic effects of drastic climate change. Knowledge and information on the climatic variation parameters in an environment is very vital for environmental study assessment and proper planning. Therefore, the importance of knowing the future climatic variation parameters cannot be under-estimated (Olusina et. al. 2012).

Previously several researches have been conducted on trend analysis and probability distribution both in Bangladesh and abroad.

Recently, several international studies of trend analysis have been performed by Haksan et. al. (2010), Olusina and Odumade (2012), Boyles and Raman (2003), Pal and Al-Tabbaa (2009), Batisani and Yarnal (2010), Dhorde et. al. (2009), Rai et. al. (2010), Mamtimin et. al. (2011), Chen et. al. (2007), Zhang et. al. (2011), Bartholy and Pongracz (2010), Sivakumar et. al. (2012). Trend analysis of temperature, rainfall and evapotranspiration were performed in these researches.

Different international studies of probability distribution have been performed by Wilson and Toumi (2005), Hanson and Vogel (2008), Sen and Eljadid (1999), Yue (2000), Michaelides et. al. (2009), Ben-Zvi (2009), [2]Zaharim et. al. (2009), Morgan et. al. (2009), Sherwood et. al. (2006), Kyselý (2002), Krumm and Hariharan (2004),

Punyawardena and Kulasiri (1996), Exell (1981), Pryor et. al. (2005), Ishihara et. al. (2005), Ishihara et. al. (2005), Jaramillo and Borja (2004), Gierens et al. (1999), Haag et. al. (2003), Zhang et al. (2003) and Sherwood et. al. (2006).

Several researches were conducted in Bangladesh by Ahmed (2009), Joya (2010), Rimi et. al. (2009), Hassan and Okubo (1998), Rouf, et. al. (2011), CCC (2009), Sanderson and Ahmed (1979), Farhana and Rahman (2011), Islam (2009) and Manalo (1976), where trends in different climatic variables, such as rainfall, temperatures, sunshine duration and evaporation have been investigated. IRRI, BMD, and BWDB data where used for these researches for different selected stations in Bangladesh.

In Bangladesh different studies associated with probability distribution were performed by Hossain et. al. (2009), Rashid et al. (2012), Saleque (1991) and Akhter (1992). BMD and BWDB data were used for these studies for mainly temperature and rainfall parameters.

This comprehensive study aimed at probability distribution and trend analysis of various climatologic parameters in different weather stations of Bangladesh. Statistical analysis of the recent trend of climate change and prediction of future climate change scenarios that is, interpretation of climate change also has been carried out. BARC and BMD data of different meteorological stations of seven climatologic parameters that is, temperature, rainfall, solar radiation, wind speed, relative humidity, bright sunshine hour and evaporation are used in this research.

1.2 OBJECTIVE OF THE STUDY

Objective of the study is as follows:

- To analyze the seasonal and monthly trend of various climatologic parameters in different weather stations of Bangladesh.
- To check the Goodness of fit of various climatologic parameter data with various probability distributions.
- To address the phenomena such as global warming, global dimming, global cooling for temperature; global dimming for solar radiation; wetter/drier winter, wetter/drier summer for rainfall.

The possible outcome of the study has given an insight into seasonal, monthly and annual trend of various climatologic parameters such as temperature, relative humidity, solar radiation, rainfall, evaporation, bright sunshine hour etc. in different parts of Bangladesh. Another outcome of the study is to fit different probability distributions with these climatologic parameters and to select the appropriate distribution that a particular data group follows.

1.3 STUDY AREA

Bangladesh a land of worlds one of the largest deltaic fluvial system experienced a subtropical monsoon climate characterized by wide seasonal variations in rainfall, moderately warm temperatures, high humidity and decreasing trend of bright sunshine hours, solar radiation, wind speed & evaporation rate has been chosen for the study.

Two types of data sources have been used in this study. Those are BMD that means Bangladesh Meteorological Department and BARC means Bangladesh Agricultural Research Council. For rainfall and evaporation rate BMD data has been used. For rest of the climatic parameters, BARC data has been used.

31 stations data are available for temperature, where rainfall have 34 stations data, bright sunshine hours, wind speed and relative humidity have 33 stations data, evaporation have only 12 stations data and 10 stations data are available for solar radiation. That means total 186 numbers of data sets were available for analysis.

For better understanding of the spatial variation of the climatic factors the stations are grouped into different regions and for better understanding the climate change pattern, whole Bangladesh is divided into seven different regions. Those are North West, North East, North Central, South West, South East & Eastern Hills and Coastal Region. Table 1.1 present the list of regions for different meteorological stations and Figure 1.1 represent the location of the meteorological stations over Bangladesh.

Table 1.1: List of Regions for data stations

Regions	Districts
North West (NW)	Bogra, Dinajpur, Ishurdi, Rajshahi, Rangpur, Syedpur
North East (NE)	Sitakunda, Srimongol, Sylhet
North Central (NC)	Dhaka, Mymensing, Tangail
South West (SW)	Barisal, Chuadanga, Faridpur, Jessore, Khulna, Madaripur, Satkhira
South East and Eastern Hills (SE & EH)	Comilla, Chandpur, Chittagong, Feni, Kutubdia, Maizdicourt, Rangamati
Coastal Region (CR)	Bhola, Cox’s Bazar, Hatiya, Khepupara, Mongla, Patuakhali, Teknaf

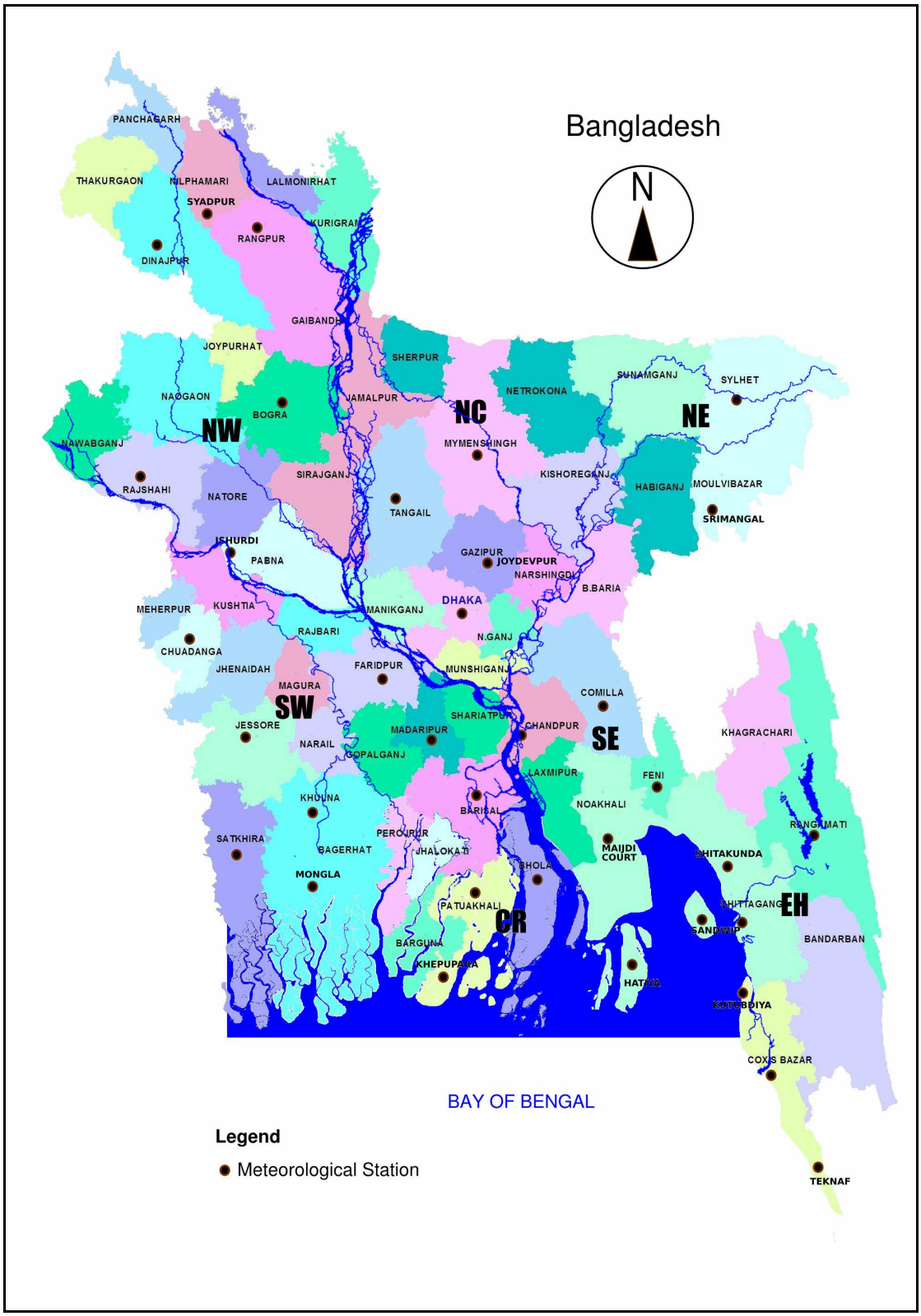


Figure 1.1 Locations of the Meteorological Stations (BMD) in the study area.

Availability of different meteorological stations for different climatologic parameters which nearly cover all part of Bangladesh as follows:

Table 1.2: Project Area

Sl no.	Station Name	Rainfall	Temperature	Solar Radiation	Wind Speed	Relative Humidity	Bright sunshine hour	Evaporation
1	Barisal	•	•	•	•	•	•	•
2	Bhola	•	•		•	•	•	
3	Bogra	•	•	•	•	•	•	•
4	Chandpur	•	•		•	•	•	
5	Chittagong	•	•		•	•	•	
6	Chuadanga	•						
7	Comilla	•	•	•	•	•	•	•
8	Cox's Bazar	•	•		•	•	•	
9	Dhaka	•	•	•	•	•	•	
10	Dinajpur	•	•		•	•	•	•
11	Faridpur	•	•	•	•	•	•	•
12	Feni	•	•		•	•	•	
13	Hatiya	•	•		•	•	•	
14	Ishurdi	•	•		•	•	•	
15	Jessore	•	•		•	•	•	
16	Khepupara	•	•		•	•	•	
17	Khulna	•	•	•	•	•	•	•
18	Kutubdia	•	•		•	•	•	
19	M.Court	•	•		•	•	•	
20	Madaripur	•	•		•	•	•	
21	Mongla	•	•		•	•	•	
22	Mymensingh	•	•	•	•	•	•	•
23	Patuakhali	•	•		•	•	•	
24	Rajshahi	•	•		•	•	•	•
25	Rangamati	•	•		•	•	•	•
26	Rangpur	•	•	•	•	•	•	•
27	Sandwip	•			•	•	•	
28	Satkhira	•	•		•	•	•	
29	Shitakunda	•	•		•	•	•	
30	Srimangal	•	•	•	•	•	•	•
31	Syadpur	•						
32	Sylhet	•	•		•	•	•	
33	Tangail	•	•		•	•	•	
34	Teknaf	•	•		•	•	•	
35	Joydevpur			•				•

1.4 SCOPE OF WORK

The study deals with different dimensions of data analysis and has the following limitations:

- Maximum number of stations was 34 for rainfall, and solar radiation has the minimum of 10 data stations.
- Data extends between the years 1980 and 2009, but all data did not cover the whole range. During similar analysis same number of years was included for each station.
- Extreme values were excluded in trend analysis.
- No Chi-square tests were done for solar radiation due to inadequate volume of data.

1.5 ORGANIZATION OF THE THESIS

The thesis is organized in the following sequence of chapters:

Chapter 1 Introduction- This chapter introduces the concepts of the study, study area and objectives.

Chapter 2 Literature Review- This chapter describes previous woks and experiments focused on the probability distribution and trends of various climatic parameters all over the world.

Chapter 3 Methodology- This chapter describes the study region, data acquisition and analysis methods.

Chapter 4 Results and Discussions- This chapter puts forward the results from the analysis and discussion on the results.

Chapter 5: Conclusions and Recommendations- This chapter consists of the conclusions and recommendations.

Chapter 2
LITERATURE REVIEW

2.1 GENERAL

In the past, a number of studies have been carried out on the probability distribution and trends of various climatic parameters in Bangladesh as well as all over the world. In this chapter some of the pioneering works of past researched have been summarized in order to gain some knowledge, so that the study objectives can be fulfilled having proper conception.

2.2 REVIEW OF PREVIOUS STUDIES

Literature review is organized in two different parts. First review international literature related both for trend analysis and probability distribution studies and second one is the summery of similar studies conducted in Bangladesh.

2.2.1 International studies

Trend analysis and probability distribution related different studies have been conducted in different countries.

2.2.1.1 *Trend studies*

A trend analysis was conducted (Haksan et. al. 2010) to investigate the trends in hydro meteorological parameters for five different climate regions of Turkey. Long term annual mean temperature, precipitation, and actual evapotranspiration estimations derived by Turc formula has been used to determine trends. The data has been analyzed by run test (swed-eisenhart) for homogeneity of time series and implemented mann-kendall non-parametric trend test and regression analysis. The results show that majority of stations shows upward trend on temperature and evapotranspiration. One except all stations shows no trend on precipitation. When are the observed trends in temperature for analyzed stations higher than $0{,}02^0$C per year, upward evapotranspiration trend is seen.

A research (Olusina and Odumade, 2012) was conducted for the determination of the future climatic variation parameters of Nigeria for the next fifty years (2000-2050).Due to the complex and multidimensional nature of the variables involved, the parameters considered in the work were limited to temperature and rainfall.

Statistical downscaling concept was adapted to the WORLDCLIM (Global Climate Data) past and future data for 50years to obtain climatic parameters for Nigeria. Past temperature and rainfall data were also obtained from the Nigeria Meteorological Agency (NIMET) to check the validity of the past WORLDCLIM data at the national level. DIVA-GIS and Arc-GIS were basically used in this research.

Climate patterns and trends in North Carolina are analyzed (Boyles and Raman 2003) for the period 1949–1998. Precipitation, minimum temperature and maximum temperature are analyzed on seasonal and annual time scales using data collected from the National Weather Service Cooperative Observer Network. Additionally, changes in patterns of occurrence of the last spring freeze and first fall freeze are investigated. Linear time series slopes are analyzed to investigate the spatial and temporal trends of climate variability in North Carolina. Spatial analysis of climate variability across North Carolina is performed using a geographic information system. While most trends are local in nature, there are general statewide patterns. Precipitation in North Carolina has increased over the past 50 years during the fall and winter seasons, but decreased during the summer. Temperatures during the last 10 years are warmer than average, but are not warmer than those experienced during the 1950s. The warm season has become longer, as measured by the dates of the last spring freeze and first fall freeze. Generally, the last 10 years were the wettest of the study period.

A trend analysis of rainfall has been carried out in Kerala (Pal and Al-Tabbaa, 2009), the south-western state of the Indian peninsula, comprising of a total of six gridded areas, was chosen for this study focusing on the variability and changes in rainfall extremes in the different seasons. The trends are determined over the period of 1954–2003, which are also tested for significance. The results show that there are large intra-regional differences in the trends in different seasons. Local changes were found different from the large spatial scale averages in Kerala. Winter and autumn extreme rainfall were found having an increasing tendency with statistically significant changes in some regions indicating more occurrences of winter and autumn floods. On the other hand the spring seasonal extreme rainfall showed decreasing trends, which together with increasing frequency of the dry days is mainly affecting the total seasonal precipitation, which mainly point towards the vulnerability of Kerala to increasing probability of water scarcity in the pre-monsoon time and a delaying monsoon onset.

Another study (Batisani and Yarnal 2010) examined the climatic phenomenon in semi-arid Botswana, to investigate the signs of climate change, and to explore the policy implications for climate adaptation. To reach these goals, the paper determines rainfall variability and monthly and annual trends in that variability. The results agree with earlier work showing gradients in rainfall and rainfall variability across Botswana. The results also identify a trend towards decreased rainfall throughout the

nation, which is associated with decreases in the number of rainy days. Both the drying trend and decrease in rainy days agree with climate change projections for southern Africa.

Investigations have been carried out by climatologists (Dhorde et. al. 2009) to find a possible link of climate change with anthropogenic activities by studying trends in different climatic parameters, particularly surface air temperature at India's four most populated cities - Delhi, Kolkata, Mumbai and Chennai, where trends in annual and seasonal temperature series were analyzed using linear trend and Mann-Kendall test. Most of the trends showed positive change in temperature with different rates in different seasons.

Another statistical approach (Rai et. al. 2010) was applied to investigate the spatial distribution pattern of the indicative hydro-climatic variables over the Yamuna River basin of India. Hydro-climatic time series used in the analysis were annual rainfall; Monsoon and Non-monsoon rainfall; annual, Monsoon and Non-monsoon rainy days; onset of effective monsoon and aridity index.

From the analysis (Mamtimin et. al. 2011) of recent trend of temperature change under hot and cold dessert climates in Sahara (Libya) and Central Asia (Xinjiang, China), increasing annual temperatures were detected over the period 1955-2005 corresponding with global temperature warming. From 1955-1978, negative (decreasing) temperature trends were, observed at all three hot desert stations and at two of the three cold desert stations. From 1979e2005, strikingly positive temperature trends were seen at all six stations. In seasonal respects, winter (December to February) and summer (June to August) show different temperature trends over the period 1955e2005: the hot desert experienced an increasing temperature trend at a greater extent in summer than in winter; vice-versa, in the cold desert positive trends were computed for winter and negative for summer. It can also be observed that mostly hot desert warming occurred in summer, opposite to cold desert warming in winter.

Temporal trends of annual and seasonal precipitation and temperature from 1951 to 2003 in the Hanjiang basin are analyzed (Chen et. al. 2007) using the Mann–Kendall and the linear regression methods where spatial distributions of precipitation and temperature are interpolated by the inverse distance weighted interpolation method. The results indicate that, at a = 0.05 significance level precipitation in the Hanjiang basin has no trend, but the temperature in the same region has significant upward trends in most parts of the Hanjiang basin. The mean annual, spring, and winter run-offs in the Danjiangkou reservoir basin have decreasing trends.

The non-parametric Mann–Kendall statistic was used to identify (Zhang et. al. 2011) change trends and points in the annual streamflow in the Hun–Tai River basin in

northeast China. The identifications were based on streamflow records from six hydrological stations during 1961–2006, and the purpose was to analyze the change characteristics of the hydrological processes. The results indicated that all hydrological stations presented downward trends in annual streamflows.

In an analysis (Bartholy and Pongracz, 2010) of the possible tendency of future precipitation conditions for the Carpathian Basin, several climate extreme indices have been analyzed. The result suggest that regional intensity and frequency of extreme precipitation increased in the Carpathian Basin during the second half of the 20th century, while the total precipitation decreased and the mean climate became slightly drier during the whole 20th century.

Trend analysis (Sivakumar et. al. 2012) of the climatic parameters from 2001 to 2007 in northeastern zone of Tamilnadu showed in general that rainfall increased during 2001 to 2005 and decreased during 2006 while temperature showed same trend. Temperature, rainfall, relative humidity and wind velocity had positive regression when compared with the years (2001-2007).

2.2.1.2 *Probability distribution studies*

Probability distribution of daily precipitation for Cambridge Botanic Gardens (1898 – 1999) shows that the precipitation greater than 10 mm/day fits better than gamma distribution to both the stretched exponential (long dashed line) and generalised Pareto (dotted line) distributions. (Wilson and Toumi, 2005)

An analysis of rainfall data of USA indicates that the Pearson Type-III (P3) distribution fits the full record of daily precipitation data remarkably well, while the Kappa (KAP) distribution best describes the observed distribution of wet-day daily rainfall. The analysis also finds that G2 distribution performs poorly in comparison to either the P3 or KAP distributions. (Hanson and Vogel, 2008)

Libyan monthly rainfall distributions (more than 20 years data) are found to abide by gamma probability distribution function which is confirmed on the basis of chi-square tests. (Sen and Eljadid, 1999)

An analysis of rainfall data from two different climatic regions of Japan (Tokushima and Niigata prefecture) fitted normal distributions on normal paper. To find the goodness of fit of the normal distribution, the chi-square test was executed. The test indicates that both the transformed storm peaks and amounts can be approximately represented by normal distributions. (Yue, 2000)

A study of statistical analysis of the time series of rainfall-recording stations in Cyprus (from 1917 to 2006) found that Gamma distribution fitted to the rainfall records. (Michaelides et. al. 2009)

The Gumbel and the lognormal distributions well fit to most of the annual maxima

series and to a very few partial duration series for eleven rainfall durations, from 5 to 240 min, at four stations of the Israel Meteorological Service. (Ben-Zvi, 2009)

An study of the probability estimates of temperature extremes (annual temperature maxima and heat waves) in the Czech Republic (1961 – 1998) concluded that, extreme value distributions should not be applied to maximum annual lengths of heat waves and periods of tropical days, but may be used to estimate the recurrence probabilities of one-day temperature extremes, after the GEV distribution has been shape-parameter tested. (Kyselý , 2002)

A method was developed using inside-outside (inside a building-ambient) temperature data to switch of mobile GPS devices when inside. Testing with five US cities temperature data they developed the model assuming that the probability distribution of temperature variation follows Gaussian distribution. (Krumm and Hariharan, 2004)

It is possible to fit different theoretical probability distributions to the observed data. Conventionally, sunshine data analysis have been based on the fitting a normal probability density function which is bell-shaped and thus symmetric to the observed data. Popular use of normal probability density function in sunshine data analysis is probably due to the fact that it enables the use of certain statistical techniques such as Analysis of Variance (ANOVA), regression analysis and certain types of hypotheses. But in practical situations sunshine duration does not fit very well into such a symmetric distribution and most of the time it represents a skewed distribution. (Punyawardena and Kulasiri, 1996)

Solar radiation data in the form of daily sunshine data from thirty three meteorological stations in Algeria for eleven years or more were collected and analyzed, which followed a beta probability distribution. (Ettoumi et. al. 2002)

A model was developed based on detailed studies of solar radiation data for Thailand and is expected to be applicable over the entire South-East Asian peninsula. Empirical formulae (binomial distributions) have been found to give satisfactory approximations to the probability distributions needed. (Exell, 1981)

In another research, it is assumed that the wind speed distribution in north Europe (Copenhagen) is well described using the two-parameter Weibull distribution. While this is generally true, it is not uniformly the case especially in locations that are characterized by mixed forcing of the flow. (Pryor et. al. 2005)

It was observed, in a research with the wind speed during typhoon in Japan (Naha and Chiba), that, the general mixed probability distribution function combining the Weibull and log-normal distributions improved the fitting of observation data. (Ishihara et. al. 2005)

Another research investigated the probability distribution of wind speed data recorded

in Faculty of Engineering, University Kebangsaan Malaysia. The wind speed data represented in the form of frequency curves show the shape of a potential model. The two-parameter Weibull distribution and lognormal distribution are adopted in this study to fit the wind speed data. The scale and shape parameters were estimated by using maximum likelihood method. The goodness-of-fit tests based on the empirical distribution function are conducted to show that the distribution adequately fits the data. It was found from the hypothesis test that, although the two distributions were all suitable for describing the probability distribution of wind speed data, the two-parameter Weibull distribution was more appropriate than the lognormal distribution. ([2]Zaharim et. al. 2009)

In another study, three types of probability distributions have been used to estimate the wind energy potential in Kuala Terengganu, the east coast Malaysia. A comparison is made on the ability to describe the experimental mean wind power density. The numerical and graphical results obtained from the specific statistical that Weibull and Gamma distribution, whose parameters are estimated using the maximum likelihood principle, provide the best fits for the year 2005 and 2006 respectively. There are three statistical distributions used to fit this data set. They are Weibull, Lognormal and Gamma distribution. The result of this study show that Weibull and gamma distribution seems to satisfy fit the wind speed data used. ([1]Zaharim et. al. 2009)

It is common practice to model short-term wind speeds with the Weibull distribution (Monahan , A. H., 2006)(Morgan et. al. 2009). Using 10-minute wind speed time series at 178 ocean buoy stations ranging from 1 month to 20 years in duration, it was shown that the widely-accepted Weibull distribution provides a poor fit to the distribution of wind speeds when compared with other models. The 2-parameter Lognormal distribution performs best for estimating extreme wind speeds, but still gives estimates with significant error. (Morgan et. al. 2009)

The statistical characteristics of the wind speed in La Ventosa, Oaxaca, Mexico, have been analyzed by using wind speed data recorded by Instituto de Investigaciones Electricas. By grouping the observations by annual, seasonal and wind direction, it was shown that the wind speed distribution is not represented by the typical two-parameter Weibull function. A mathematical formulation by using a bimodal Weibull&Weibull probability distribution function has been developed to analyze the wind speed frequency distribution in that region. (Jaramillo and Borja, 2004)

Observations suggest that the distribution of relative humidity over ice (RHI) in ice supersaturated regions follows an almost exponential decay, indicating that the underlying processes that cause this functional dependence act in a statistically independent manner (Gierens et al., 1999). Haag et. al. (2003) suggested that such distributions are primarily brought about by vertical air motions that cause a certain distribution of atmospheric temperatures T . Variability of H_2O also plays a role, but is

less influential. When distributions of T and H_2O concentrations are combined to derive RHI, the resulting distributions of RHI exhibit a quasi-exponential decrease towards high RHI values, in agreement with observations.

Tuck et al. (2003) assessed the importance of different near- tropopause mixing processes from two-point humidity correlation statistics. Previous investigators have found exponential distributions of humidity near the tropo- pause (Gierens et al. 1999; Spichtinger et al. 2002). Soden and Bretherton (1993) noted an approximately lognormal distribution of upper-tropospheric humidity (an average from about 200 to 500 hPa, though with a humidity-dependent weighting function). As yet no unequivocal explanation for these distributions has emerged. Complicating the picture, Zhang et al. (2003) reported bimodal distributions in some (but not all) available datasets. Previous studies agree, however, that water vapor mixing ratio and relative humidity distributions are very broad and look nothing like the Gaussian distribution often found for other geophysical quantities. This indicates that water vapor equilibria are not maintained by random additions and subtractions of water from air parcels, which should (by instituting a random walk of humidity) produce a Gaussian distribution. (Sherwood et. al. 2006)

2.2.2 National studies

There are several types of trend analysis and probability distribution related studies have been conducted in Bangladesh.

2.2.2.1 *Trend studies*

Ahmed (2009) has analyzed yearly temperature trend of BMD data from 1974 to 2004, where distribution is a straight line with a positive gradient that is gradually increasing.

Another project was done (Joya, 2010), where Temperature and radiation trend analysis was accomplished, where the overall average temperature is slightly decreased in dry period as well as in pre-monsoon. There is a major increase in average temperature trend in pre-monsoon and post-monsoon. The zone-wise trend of monthly mean temperature represents the nationwide trend fully that is first half of a year is having a decrease in average temperature where as the second half of the year is facing a high rise in average temperature. The analysis represents a mixed trend for both the cases of monthly maximum and minimum temperatures, there is no change overall. From the yearly trend of average temperature it is observed that most of the stations of north-east, north-west, north-central, south-east and eastern hilly region have an increasing phase. Few locations of south-east region have a decreasing trend. Dhaka, the capital of our country is one of those locations having extreme increase in average temperature. During the decade of 80's mean temperature shows a decreasing

trend. But from the 90's to recent years this trend is continuously increasing. A mixed trend is observed during 50's, 60's and 70's decade. The analysis is also reflects that the overall radiation trend is decreasing. A slight decrease is observed in pre-monsoon and dry period. In most of the locations of Bangladesh the sun radiates highly in the month of April and May and minimum radiation occurs in the month of December and January.

Trend analysis of climate change and investigation on it's Probable Impacts on Rice Production at Satkhira, Bangladesh was done by Rimi et.al.. This study aimed at statistical analysis of the recent trend of climate change and prediction of future climate change scenarios with Global Climate Models (GCMs) and most importantly investigation on the impacts of climate change on rice production. The Satkhira district was taken as the study area, which represented the coastal zone of Bangladesh. There was a statistically non-significant increasing trend of annual maximum and minimum temperature and annual total rainfall through the period of 1950-2006. The trend analysis of seasonal rainfall for the period 1981-2006 could reveal that, from the last two decades the seasonal normal rainfall pattern has been altered. Rainfall in pre-monsoon and winter season had a decreasing trend whereas it had an increasing trend during monsoon and post-monsoon seasons. (Rimi et. al., 2009)

Surface air temperature distribution over the Ganges Delta Region of southwest Bangladesh and its tendency of warming are discussed (Hassan and Okubo, 1998) through the analyses based upon the long-term temperature data from 1900-93. The data consist of two parts corresponding to the time-periods: 1973-93 and 1900-72. The study area is one of most affected places by the annual monsoon hydrological cycle and the present observation from these temperature data indicate that the surface air temperature gradient in the north-south direction is significant in the rainy season and that the temperature of the region is at an increasing tendency; the warming rate during the data periods (1900-93) on the long-term mean annual basis is estimated as0.77°C at Satkhira of the Khulna division and 0.29°C as an aerial average including the Barisal division, for the time difference of about half a century between the data periods before and after 1972.

The past, present and future climatic pattern (temperature and rainfall) of northwestern and southwestern part of Bangladesh was assessed (Rouf, et. al., 2011) based on the High Resolution Atmospheric-Ocean General Circulation Model (AOGCM) using the present rainfall and temperature data of the Bangladesh Meteorological Department (BMD). From overall analysis it has been observed that, the present mean temperature for Bangladesh was found to rise from the past, rises slightly, but in near future and future the rate of mean temperature rise is projected to be much more than the present rate (increase up to 4.34 °C/100 years), the rate is projected to be 5.39 °C/100 years in case of Shapahar and Porsha a while

4.37 °C/100 years in case of Kalapara and Amtoli. The present, near future and future average rainfall of Bangladesh appeared to fluctuate, but have shown a decreasing trend (decreases up to 1.96 mm/100 years). The mean average rainfall of Shapahar and Porsha presently decreases very slowly (not significant), but in near future and future will decrease slowly (0.66mm/100 years). In case of Kalapara, the average rainfall appears to decrease presently, near future and future will decrease up to 3.62 mm/100 years. The average rainfall of Amtoli appears to decrease @ 1.92mm/100 years but in near future appears to increase slightly and again decrease at the rate of 3.27mm/100years in future.

A research was conducted (CCC, 2009) where long-term changes and trends in climatic variables, such as rainfall, temperatures, sunshine duration and evaporation, have been investigated. BMD and BWDB data are used for this research for eight selected stations.

In this research it has been observed that the rainfall, during the summer (March-May) and critical period (11 March-10 May) are found to have increased at all the eight stations. The rainfall during the winter (November-February) has also increased except at Sylhet. The statistics about the monsoon (June-October) rainfall are mixed rainfalls have decreased at 5 stations and increased at 3 stations. For entire Bangladesh, the trends in seasonal rainfall totals are about 9 mm, 38 mm, 10 mm and 18 mm per decade (10 years) in the winter, summer, monsoon and critical period, respectively. It thus appears that the seasonal rainfalls have in general increasing trends except at monsoon.

Annual and seasonal mean temperatures are found to have in general increasing trends in Bangladesh. Other than the mean temperature, the maximum and minimum temperatures were also analyzed and the results are reported in the main text. Both maximum and minimum temperatures, and hence the mean temperature, have decreasing trends in the month of January, which is the peak winter month. This indicates that the peak winter is becoming cooler day by day.

The analysis of sunshine duration data reveals that the winter, dry season, summer and monsoon, sunshine are declining at a rate of 5.7%, 5.0%, 3.9% and 3.8% respectively in every 10 years for the entire Bangladesh. The overall annual decrease for the entire Bangladesh is about 0.36 hours a day in every 10 years. This rate of decline in annual sunshine hour is equal to 4.7% a decade.

In this study, the crop evapotranspiration (Etc) during the dry season is found to be decreasing. This is mainly due to the decreasing sunshine duration, though temperatures have rising trends. The net irrigation requirement during the dry season is also decreasing due to decreasing ETc and increasing rainfall trends.

Another study was accomplished (Sanderson and Ahmed, 1979) through trend surface

mapping technique to explain the regional trends and local effects on the distribution of pre-monsoon rainfall in Bangladesh.

A trend analysis (Farhana and Rahman, 2011) was done to characterize rainfall trend in Bangladesh by temporal statistics analysis to focus towards examining any discernable trends in a particular time series. With respect to year from 1950-1999, the standard deviation of annual rainfall is significantly decreasing at 388.1 mm/year at Patuakhali, and increasing at 164.7 mm/year at Sandip. The mean of annual rainfall is significantly decreasing at 42.7 mm/year at Comilla, and increasing at 257.8 mm/year at Rangamati. The coefficient of variation of annual rainfall is significantly decreasing at 157.7x10-3 mm/year at Patuakhali, and increasing at 31.5x10-3 mm/year at Sandip. With respect to year from 1950-1999, in monsoon the countrywide standard deviation of rainfall is significantly increasing at 238.2x10-1 mm/year and countrywide mean rainfall is significantly increasing at 74.9 mm/year.

Long term changes of near surface air temperature over Bangladesh have been studied (Islam, 2009) using the available historical data collected by the Bangladesh Meteorological Department (BMD). Maximum and minimum daily temperature data of last sixty years (1948-2007) collected from 34 stations of BMD located all over the Bangladesh have been used in this study. It has been found that daily maximum temperature shows a positive trend of increase at a rate of 0.621 ± 0.491 0C per 100 year. The maximum increase occurred during November at a rate of 2.7 0C per 100 year. However, daily minimum temperature shows more significant trend of increase at a rate of 1.536 ± 0.461 0C per 100 year. The maximum increase occurred during February at a rate of 3.4 0C per 100 year. Daily mean temperature shows positive trend of increase at a rate of 1.026 ± 0.403 0C per 100 year. It has been clearly found that temperature of winter season (December to February) has been raised much higher rate than that of summer season (June to August). This study also reveals that temperature has been increase predominantly over the last 30 years (1978-2007) than last 60 years (1948-2007).

The Agro-Climatic Survey of Bangladesh (Manalo 1976) described the characteristics features of the climatic regimes of the country. The appendix contains 25 tables dealing with meteorological and hydrological data, the histograms of monthly rainfall, statistical measures of a number of meteorological parameters have been tabulated. Rainfall variables are emphasized; measures of its central tendency, of its dispersion, of its extreme values and its medians are among the statistics presented. Some statistical characteristics of evaporation and relative humidity have been evaluated; vapor pressure, bright sunshine hour and cloudiness. Temperature and its extremes are tabulated, as well as the water balance regime. Wind speed in different units and time intervals, information on cyclones, the frequency distribution of cyclonic disturbances and remarkable cyclones which have struck Bangladesh.

2.2.2.2 *Probability distribution studies*

A study was conducted (Hossain et. al 2009) on the wind power potential of five selected meteorological stations of Rajshahi division, in the northwest of Bangladesh. From the available observed raw wind data, long term averages on monthly and annual basis have been obtained, from which probability distribution of wind speed, velocity duration curves and distribution of power in the wind are plotted. Wind roses have also been plotted for the stations. The results indicate that out of the five stations Ishwardi has higher wind potential than the others.

Modeling of short duration Rainfall intensity duration frequency (SDR- IDF) equation for Sylhet city in Bangladesh was done by Rashid et al. (2012). Daily rainfall data for year 1962 - 2005 from Bangladesh Water Development Board (BWDB) and Bangladesh Meteorological Department (BMD) was used in this study. Indian Meteorological Department (IMD) empirical reduction formula was used to estimate the short duration rainfall intensity from daily rainfall data. Various distribution functions were used for analysis and chi-square goodness to fit test were used to identify the best statistical distribution among them. Study showed that Person Type III is the best probability distribution.

A project work was done by (Saleque 1991) where several commonly used probability distributions were applied to the available peak flows of the Jamuna at Bahadurabad. The distributions considered included normal, Lognormal, Log pearson type III and Extreme Value Type I distribution. Significance tests of serial correlation indicated that annual peak flows of Jamuna is random and fitting of probability distribution is appropriate. The distributions were fitted by computer programmes developed for this study. For each method, the goodness of fit was investigated by a number of methods such as visual inspection of the probability plots, quantitative statistical tests and comparison of deviations between observed and computed peak flows at different return periods. Based on the results of this study, it was not possible to choose one method as the best among several alternative methods of frequency analysis. So an attempt was made to suggest a ranking of the distributions on the basis of various comparisons the order was Log Pearson Type III, Lognormal, Extreme Value Type I.

Large-scale planning for improved land and water management and expanding water resources development has made it increasingly important that a consistent approach be adopted for estimating the magnitude-frequency relationships for point rainfall extremes (EP) (Akhter 1992). The aim of frequency analysis is to select or fit probability distributions to observed data and then values needed by hydrologist and engineers may be extrapolated beyond the range of recorded observations. In this study five distributions viz, normal, log-normal, Gumbel, Pearson Type III and log-

Pearson Type III were compared for their ability to fit maximum rainfall values of durations one to three days for the south eastern part of the country. Daily rainfall amounts from 35 stations varying from 27 to 29 years in length provided the basic data for the study. Statistical tests indicated that EV1, log-normal and normal distributions fitted data better than others. EV1 distribution seems to be slightly better, but it did not show any marked superiority over the other two.

2.3 SUMMERY

From different studies of climatic parameters it is evident that climate is changing throughout the world including Bangladesh. Bangladesh is already experiencing climate related hazards like floods, draughts and cyclones. Different climatic parameters like rainfall, temperature, solar radiation, bright sunshine hours, evaporation, wind speed and relative humidity are very important for agricultural aspects. Different studies show that climatic parameters follow different probability distribution and trend in different areas. The outcome of these studies will be helpful for further study and analysis.

Chapter 3
THEORY AND METHODOLOGY

3.1 GENERAL

In this chapter a brief description about the data source, processing and analysis of data used in the study are discussed. Goodness of fit test, estimation and tabulation of chi-square value and compare with critical chi-square value techniques are also thoroughly presented here.

3.2 THEORY

3.2.1 Probability Distribution

The definition of "probability" has been labored over for many years. One definition that is easy to grasp is the classical or a priori definition:

If a random event can occur in n equally likely and mutually exclusive ways, and if n_a of these ways have an attribute A, then the probability of the occurrence of the event having attribute A is n_a/n written as

$$Prob(A) = n_a/n \quad \text{.....(1)}$$

This definition is an a priori definition because it assumes that one can determine before the fact all of the equally likely and mutually exclusive ways that an event can occur and all of the ways that an event with attribute A can occur.

The classical definition of probability takes on more utility in hydrology in terms of relative frequencies and limit.

If a random event occurs a large number of times n and the event has attribute A in n_a of these occurrences, then the probability of the occurrence of the event having attribute A is (Hann, C. T., 1977)

$$Prob(A) = \lim_{n \to \infty} n_a/n \quad \text{.....(2)}$$

3.2.2 Trend analysis

Definition of trend analysis –Trend analysis is based on the idea that what has happened in the past gives traders an idea of what will happen in the future. More relevant theories and terminologies are presented in Appendix C.

3.3 DATA SOURCE

Standard set of monthly, annual and seasonal data of different climatologic parameters of different meteorological stations in Bangladesh are analyzed in this study have been collected from BMD (Bangladesh Meteorological Department) and BARC (Bangladesh Agricultural Research Council) as described bellow:

3.3.1 Temperature

Temperature data have been collected for thirty one stations for the time period of 1980 to 2008. The data are available in the form of year wise monthly average maximum temperature & year wise monthly average minimum temperature in degree centigrade.

3.3.2 Rainfall

Rainfall is collected and measured in a rain gauge such as pluviometer; ombrometer and hyetometer are also sometimes used to designate a raingauge (Subramanya, 2003). Rainfall data is measured by Manual gauge and Self Recording Rain Gauge by BMD. Rainfall data is available for thirty four stations of Bangladesh for the time period of 1980 to 2008.

3.3.3 Solar radiation

BMD measures solar radiation by using Eply Pyranometer which is installed at a height of two meter from the ground surface. The solar radiation data are available only for ten stations for the period of 2001 to 2007. These are the daily data in $cal/cm^2/day$.

3.3.4 Wind speed

An anemometer is a device which is used for measuring wind speed. A simple type of anemometer is the cup anemometer is used by BMD. BMD installed anemometer at different height from the ground surface. For agronomy purpose wind speed is measured at a height of two meter from the ground surface.

Wind speed data have been collected for 32 stations for the time period of 1980 to 2008. The wind speed measures in two times in a day at interval of twelve hours at 12.00 noon and 12.00 midnight. The unit of wind speed is km/hour. In the web site of BARC (Bangladesh Agricultural Research Council) the wind speed data are available in year wise monthly average form.

3.3.5 Relative humidity

Hygrometers are instruments used for measuring relative humidity Relative humidity data are available for 32 stations for the time period of 1980 to 2008. Relative humidity is also measured eight times in a day at an interval of three hours and data

measurement starts from 12.00 midnight. In the web site of BARC (Bangladesh Agricultural Research Council) the wind speed data are available in year wise monthly average form.

3.3.6 Bright sunshine hour

BMD measures sunshine hour by using Sunshine Recorder. Bright sunshine hour data are available for 32 stations for the time period of 1980 to 2008. In the web site of BARC (Bangladesh Agricultural Research Council) the bright sunshine hour data are available in year wise monthly average form.

3.3.7 Evaporation rate

Bangladesh Meteorological Department measures evaporation rate by using “Class A” evaporation pan. BMD measures evaporation rate two times in a day at a interval of 6 hours at 06.00 a.m. and 12.00 noon and the measured unit is millimeter. The evaporation rate data have been collected for twelve meteorological stations for the time period of 1983 to 2008. In the web site of BARC (Bangladesh Agricultural Research Council) the evaporation rate data are available in year wise monthly average form.

3.4 DATA PROCESSING

The collected climatic data are in complex format which were not suitable for analysis. At first the data were processed by tools Microsoft Office Access 2003 to convert data into monthly total data series for rainfall and evaporation; monthly average data series for solar radiation, relative humidity, bright sunshine hours and wind speed; monthly average maximum and monthly average minimum data series for temperature. All the climatic data are checked thoroughly. From the visual observation the wrong data (abrupt values) have been discarded from the data set. Some common error were found in data set like negative, starry (**) sign instead of real value. May be it was due to punching error. These types of error were also deleted from data set.

3.5 DATA ANALYSIS

The collected and processed data series are analyze mainly in three steps those are following

- Preliminary analysis
- Trend analysis
- Probability distribution studies

3.5.1 Preliminary analysis

To get the data more systematically the data set was arranged for each climatologic parameter considering various variables. For rainfall and evaporation the considerable variables are annual, yearly maximum monthly, yearly minimum monthly, yearly maximum daily, yearly minimum daily, total pre-monsoon, total monsoon, total post-monsoon. For solar radiation, bright sunshine hour, wind speed & relative humidity following variables are considered – yearly average, yearly maximum monthly, yearly minimum monthly, average pre-monsoon, average monsoon and average post-monsoon. For maximum temperature the considerable variables are yearly maximum monthly of monthly average maximum, yearly minimum monthly of monthly average maximum, yearly average monthly of monthly average maximum, maximum monthly average maximum temperature of total pre-monsoon, maximum monthly average maximum temperature of total monsoon, maximum monthly average maximum temperature of total post-monsoon. Again for minimum temperature the considerable variables are yearly maximum monthly of monthly average minimum, yearly minimum monthly of monthly average minimum, yearly average monthly of monthly average minimum, minimum monthly average minimum temperature of total pre-monsoon, minimum monthly average minimum temperature of total monsoon, minimum monthly average minimum temperature of total post-monsoon. Definitions of different variables have been presented in Appendix C.

3.5.2 Trend analysis

Trend analysis of each variable including twelve months of each climatologic parameter has been carried out over time i.e. year. Trend analysis has done by using a spreadsheet program and presented with different graph with suitable format.

The slopes of linear trend lines have been listed in a table where the regional variation of the trend of different climatic parameters can be observed. A negative slope indicates decreasing trend, where higher numerical value indicates larger change in trend and vice versa. The list of trend line slopes have been presented in Appendix A.

3.5.3 Probability distribution study

There are many continuous probability distribution in addition to the normal distribution (Hann, C.T., 1977).Several probability distribution functions has been considered in this research, those are,

a) Normal distribution

b) Uniform distribution

c) Exponential distribution

d) Log normal distribution

e) Poisson distribution

f) EV-1 distribution

For the data series of each variable of each climatologic parameter, above six distributions are carried out. The probability distribution studies have been carried out by the Microsoft Office Excel tool.

3.5.4 Goodness of fit test and estimation and tabulation of Chi-square value

To test the goodness of fit of data series to probability distributions, “Chi-Square Goodness of Fit Test” method have been carried out. For every six distribution, for the data series of each variable of each climatologic parameter, chi-square value has estimated. A sample calculation has been presented in Appendix D.

After the estimation of chi-square value, the summery of chi-square value of six probably distribution of each variable of every station of each climatologic parameter has been presented in tabular form. Where ranking and scaling of chi-square values of every station were performed to find out the best fitted distribution. The detailed tabulation of chi-square value has been presented in Appendix B.

3.5.5 Comparison of Chi-square value with critical Chi-square value

Chi-square value of selected best fitted distribution for each variable of every station of each climatic parameter has been compared with critical chi-square value for 95% confidence level. The data set fits the selected best fitted distribution adequately when computed chi-square value smaller than the critical value. Comparison of Chi-square value with critical Chi-square value in tabular form has been presented in Appendix B.

Chapter 4
RESULTS AND DISCUSSIONS

4.1 GENERAL

To execute the objective of the study detailed analysis of seven climatic parameters-rainfall, temperature, solar radiation, bright sunshine hours, wind speed, evaporation, relative humidity for different stations of Bangladesh have been performed. Following outcome are obtained i) Trend of various variables of different climatologic parameters ii) Probability distribution study of different climatologic parameters iii) Interpretation of climate change in different parts of Bangladesh, which are described in this chapter.

4.2 TREND ANALYSIS

4.2.1 Trend of different Rainfall Variables

Maximum number of increasing trend of rainfall occurs in the month of September & October and minimum number of increasing trend of rainfall occurs from November to February. Annual rainfall has a decreasing trend among 14 of the 34 stations, rest of the stations (20 nos.) have increasing trend. The slopes of increasing trend lines are more predominant than those of the decreasing trends. But there is no uniform regional pattern of change. Though, it seems that the annual rainfall has an increasing trend in most of the central region of Bangladesh.

Only 10 of the 34 stations showed an increase in pre-monsoon rainfall (Mar-May), while 28 stations showed increase in monsoon rainfall (Jun-Oct). Ten (out of 34) stations showed increased rainfall in the post-monsoon period (Nov-Feb). Therefore it may be concluded that the rainfall concentration increases during a shorter period leading to drainage and flood problems. The list of trend line slopes are presented in Appendix-A, Table A1 .

4.2.2 Trend of different Evaporation Rate Variables

Maximum number of increasing trend of evaporation rate occurs in the month of August and September and minimum number of increasing trend of evaporation rate occurs in the month of December. Annual evaporation rate has a decreasing trend in 8 out of 12 stations. Again 8 out 12 stations have decreasing trend of evaporation rate in pre-monsoon period (Mar-May). In monsoon (Jun-Oct) period 6 out of 12 stations

have decreasing trend of evaporation rate. On the other hand, 9 out of 12 stations have decreasing trend of evaporation rate during post-monsoon (Nov-Feb). It is not sufficient to draw any generalized conclusion from only 12 stations. The list of trend line slopes are presented in Appendix-A, Table A2 .

4.2.3 Trend of different Temperature Variables

Trend analysis has been carried out both for maximum and minimum temperature for 31 stations of Bangladesh.

4.2.3.1 *Trend of different Maximum Temperature Variables*

Maximum number of increasing trend of monthly average maximum temperature occurs from the month of May to September and minimum number of increasing trend of monthly average maximum temperature occurs in the month of January. Data of 31 temperature stations represent that the yearly average maximum temperature data have increasing trend. Only 4 stations among 31 stations have decreasing trend. In pre-monsoon period (Mar-May) north-west region have decreasing trend. Central region have increasing trend except Hatiya, north-central region have mixed trend, north-east region have slightly increasing trend except Srimongol, south-east & eastern hills and south-west region have increasing trend except Madaripur. In monsoon period (Jun-Oct) there is over all increasing trend of temperature except Madaripur. In post-monsoon period (Nov-Feb) there is increasing trend of temperature except slightly decreasing trend in Comilla, Mymensing, Satkhira and Feni. The list of trend line slopes are presented in Appendix-A, Table A3. Joya. R.I (2010) has discussed this matter in details.

4.2.3.2 *Trend of different Minimum Temperature Variables*

Maximum number of increasing trend of monthly average minimum temperature occurs in the month of May and minimum number of increasing trend of monthly average minimum temperature occur in the month of January. Data of 31 temperature stations represent that the yearly average minimum temperature data mostly have increasing trend. 5 stations among 31 stations have decreasing trend. In pre-monsoon period (Mar-May) central region have mixed trend, north-central and north-west region have increasing trend, north-east, south-east and eastern hill where south-west region have mixed trend. In monsoon period (Jun-Oct) there is almost increasing trend of temperature except 4 stations. In post-monsoon period central region have decreasing trend except Cox's Bazar, north-central, north-east, north-west and south-west region have mixed trend. South-east and eastern hill region have increasing trend of temperature except Rangamati. The list of trend line slopes are presented in Appendix-A, Table A4. Joya. R.I (2010) has discussed this matter in details.

4.2.4 Trend of different Solar Radiation Variables

Maximum number of increasing trend of monthly average solar radiation occurs in the month of May and minimum number of increasing trend of monthly average solar radiation occurs in the month of August and September. Data from the 10 available stations represents an overall decreasing trend except Barisal, Dhaka and Rangpur. The list of trend line slopes are presented in Appendix-A, Table A5. Joya, R.I (2010) has discussed this matter elaborately.

4.2.5 Trend of different wind Speed Variables

Trend of various variables including monthly data of average wind speed of 32 stations of Bangladesh have slightly decreased. The list of trend line slopes are presented in Appendix-A, Table A6.

4.2.6 Trend of different Bright Sunshine Hour Variables

Maximum number of increasing trend of monthly average bright sunshine hours occurs in the month of July and minimum number of increasing trend of monthly average bright sunshine hours occurs in the month of December and January. From overall analysis of data series of various variables, average bright sunshine hour have a slightly decreasing trend all over 32 stations in Bangladesh. The list of trend line slopes are presented in Appendix-A, Table A7.

4.2.7 Trend of different Relative Humidity Variables

Maximum number of increasing trend of monthly average relative humidity occurs in the month of November and minimum number of increasing trend of monthly average relative humidity occurs from the month of July to September. Over all yearly average relative humidity of Bangladesh having slightly increasing trend. Only 2 out of 32 stations have slightly decreasing trend. Similarly average pre-monsoon and average monsoon have slightly increasing trend. 9 out of 32 stations have slightly decreasing trend of average pre-monsoon. Again 8 out of 32 stations have slightly decreasing trend of average monsoon. On the other hand, in average post-monsoon there is all through slightly decreasing trend of relative humidity. The list of trend line slopes are presented in Appendix-A, Table A8.

4.3 PROBABILITY DISTRIBUTION STUDY

4.3.1 Probability Distribution of different Rainfall Variables

Most of the monthly rainfall data series follow EV-1 and lognormal distribution except July, which follows normal distribution. Annual, yearly average monthly, yearly average daily & monsoon data series follows normal distribution. Yearly maximum monthly, yearly maximum daily data series follows log-normal

distribution. Pre-monsoon and post-monsoon data series follows EV-1 distribution. Summery of best fit distribution of data series of different rainfall variables has presented in Appendix-B, Table B1 to B20.

4.3.2 Probability Distribution of different Evaporation Rate Variables

Most of the monthly evaporation data series follow log-normal and normal distribution except October month, which follows uniform distribution. Annual evaporation data series follows uniform distribution. Yearly maximum monthly data series follows log-normal distribution. Yearly maximum daily data series follows EV-1 distribution, Yearly average monthly, yearly average daily, pre-monsoon, monsoon and post monsoon data series follows normal distribution. Summery of best fit distribution of data series of different evaporation variables has presented in Appendix –B, Table B21 to B40.

4.3.3 Probability Distribution of different Temperature Variables

Probability distribution study has been executed both for maximum and minimum temperature for 31 stations of Bangladesh.

4.3.3.1 *Probability Distribution of different Maximum Temperature Variables*

Monthly average maximum temperature data series follow normal distribution except May, which follows uniform distribution and June, which follows EV-1 distribution. Yearly maximum monthly and maximum of total pre-monsoon of monthly average maximum data series follow log normal distribution. Data series of yearly minimum monthly, yearly average monthly and maximum of total post monsoon of monthly average maximum temperature follow normal distribution. Data series of maximum of total monsoon of monthly average maximum temperature follow EV-1 distribution. Summery of best fit distribution of data series of different maximum temperature variables has presented in Appendix –B, Table B41 to B58.

4.3.3.2 *Probability Distribution of different Minimum Temperature Variables*

Monthly average minimum temperature data series follow normal and log-normal distribution except March, which follows uniform distribution. Yearly maximum monthly, yearly minimum monthly, minimum of total monsoon and minimum of total post monsoon of monthly average minimum data series follow log normal distribution. Data series of yearly average monthly of monthly average minimum temperature follow normal distribution. Data series of minimum of total pre-monsoon of monthly average minimum temperature follows uniform distribution. Summery of best fit distribution of data series of different minimum temperature variables has presented in Appendix –B, Table 59 to B76.

4.3.4 Probability Distribution of different Solar Radiation Variables

There is no goodness of fit test has been executed for solar radiation because of insufficient data series (2001-2007).

4.3.5 Probability Distribution of different Wind Speed Variables

Most of the monthly average wind speed data series follows EV-1 distribution except January and March, which follows log normal distribution. All other data series of wind speed variables follow EV-1 distribution except average post-monsoon which follows log normal distribution. Summery of best fit distribution of data series of different wind speed variables has presented in Appendix –B, Table B77 to B94.

4.3.6 Probability Distribution of different Bright Sunshine Hours Variables

Most of all different bright sunshine hour variables including monthly average data series follow normal distribution except February and yearly maximum monthly data series, which follow log normal distribution. Summery of best fit distribution of data series of different bright sunshine hour variables has presented in Appendix –B, Table B95 to B112.

4.3.7 Probability Distribution of different Relative Humidity Variables

Most of the different relative humidity variables including monthly average data series follow normal distribution except August and yearly maximum monthly data series follow log normal distribution and yearly average and average post-monsoon data series follow uniform distribution. Summery of best fit distribution of data series of different relative humidity variables has presented in Appendix –B, Table B113 to B130.

4.4 COMPARISON OF CHI-SQUARE VALUE WITH CRITICAL CHI-SQUARE VALUE

4.4.1 Comparison of Chi-square value with critical Chi-square value of different Rainfall Variables

For different rainfall variable, it has been seen that the chi-square value for the best fitted distribution for each variable are within in the range of critical chi-square value in most cases with 95% confidence level. Summery of comparison of chi-square value with critical chi-square value of different rainfall variables has presented in Appendix-B, Table B1-B20.

4.4.2 Comparison of Chi-square value with critical Chi-square value of different Evaporation Rate Variables

For different evaporation rate variable, it has been seen that, most of the chi-square value of the best fitted distribution for each variable could not satisfied critical chi-square value other than February and April. Summery of comparison of chi-square value with critical chi-square value of different evaporation rate variables has presented in Appendix-B, Table B21-B40.

4.4.3 Comparison of Chi-square value with critical Chi-square value of different Temperature Variables

4.4.3.1 *Comparison of Chi-square value with critical Chi-square value of different Maximum Temperature Variables*

For different maximum temperature variable, it has been seen that the chi-square value for the best fitted distribution for each variable are within in the range of critical chi-square value in most cases with 95% confidence level except for September and yearly minimum monthly. Summery of comparison of chi-square value with critical chi-square value of different maximum temperature variables has presented in Appendix-B, Table B41-B58.

4.4.3.2 *Comparison of Chi-square value with critical Chi-square value of different Minimum Temperature Variables*

For different minimum temperature variable, it has been seen that most of the chi-square value for the best fitted distribution for each variable are within in the range of critical chi-square value with 95% confidence level not including March, July, August, yearly minimum monthly of monthly average minimum temperature and pre-monsoon. Summery of comparison of chi-square value with critical chi-square value of different minimum temperature variables has presented in Appendix-B, Table B59-B76.

4.4.4 Comparison of Chi-square value with critical Chi-square value of different Wind Speed Variables

For different wind speed variable, it has been seen that most of the chi-square value for the best fitted distribution for each variable are within in the range of critical chi-square value with 95% confidence level, not including January, March, yearly minimum monthly and post-monsoon. Summery of comparison of chi-square value with critical chi-square value of different wind speed variables has presented in Appendix-B, Table B77-B94.

4.4.5 Comparison of Chi-square value with critical Chi-square value of different Bright Sunshine Hours Variables

For different Bright sunshine hour variable, it has been seen that, chi-square value of the best fitted distribution for 50% variables are within in the range of critical chi-square value with 95% confidence level. Summery of comparison of chi-square value with critical chi-square value of different bright sunshine hour variables has presented in Appendix-B, Table B95-B112.

4.4.6 Comparison of Chi-square value with critical Chi-square value of different Relative Humidity Variables

For different relative humidity variable, it has been seen that most of the chi-square value for the best fitted distribution for each variable are within in the range of critical chi-square value with 95% confidence level, not including October, November, yearly average and seasonal variation. Summery of comparison of chi-square value with critical chi-square value of different wind speed variables has presented in Appendix-B, Table B113-B130.

Table 4.1: Calculation of degrees of freedom

Name of the distribution	k	l	ν =k-l-1	Corresponding chi-square value for 95% confidence level
Normal distribution	5	2	2	5.99
Uniform distribution	5	2	2	5.99
Exponential distribution	5	1	3	7.81
Log-normal distribution	5	2	2	5.99
Poisson distribution	5	1	3	7.81
EV-1 distribution	5	2	2	5.99

K = number of class intervals
l = number of parameter

4.5 INTERPRETATION OF CLIMATE PARAMETERS

It is evident from the trends that there is a gradual change of climatic phenomenon in Bangladesh over the last three decades. Overall temperature is increasing; only 4 out of 31 stations showed decreasing trend in the maximum average monthly temperature while only 5 station showed decreasing trend in the minimum average monthly. Interestingly, stations from north-west region showed a dominant pattern of decreasing trend in the pre-monsoon period which is in contrast with the trend of annual average maximum monthly temperature. The rise of overall temperature throughout the country is a supporting evidence of global warming.

The annual average relative humidity is increasing, but this variable is decreasing in post monsoon (Nov-Feb) in all the 32 stations. 24 out of 34 stations showed

decreasing rainfall during this post monsoon period; this 24 includes all stations of NC & NW region. This indicates a drier winter, especially in the NC and NW region. Annual rainfall increases 20 out of 34 stations, which means that the climate is shifting towards drier winter and wetter summer.

The rise of temperature along with the decreasing wind speed trend might be the cause of increasing humidity trends. Besides, more evaporation due to higher temperature produces more clouds resulting in an increase in precipitation and decrease in bright sunshine hours and solar radiation.

Chapter 5
CONCLUSIONS AND RECOMMENDATIONS

5.1 GENERAL

This study is based on the probability distribution and trends of various climatic parameters such as rainfall, temperature, wind speed, solar radiation, relative humidity, bright sunshine hour and evaporation of different stations in Bangladesh. Spread sheet program has been used for the data processing and analysis of the seasonal and monthly trend of various climatologic parameters in different weather stations of Bangladesh. To check the Goodness of fit of various climatologic parameter data series, several probability distribution functions has considered in this research such as Normal distribution, Uniform distribution, Exponential distribution, Log normal distribution, Poisson distribution and EV-1 distribution. To test the goodness of fit of data series to probability distributions, “Chi-Square Goodness of Fit Test” method have been carried out.

5.2 CONCLUSIONS

This study supports the following conclusions:

1. From the trend analysis of different climatic parameters in Bangladesh, it can be understood that there is a particular pattern of climate change that is, increasing trend of temperature and relative humidity cause decreasing trend in wind speed. Also increasing tendency of evaporation rate due to higher temperature cause increasing trend in rainfall and decreasing trend of bright sunshine hour and solar radiation.
    - Maximum increasing trend of rainfall occurs in the month of September and October and minimum increasing trend of rainfall occurs from November to February.
    - Maximum increasing trend of evaporation rate occurs in the month of August and September and minimum increasing trend of evaporation rate occurs in the month of December.
    - Maximum increasing trend of monthly average maximum temperature occurs from the month of May to September and minimum increasing trend of monthly average maximum temperature occurs in the month of

January.

- Maximum increasing trend of monthly average minimum temperature occurs in the month of May and minimum increasing trend of monthly average minimum temperature occur in the month of January.
- Maximum increasing trend of monthly average solar radiation occurs in the month of May and minimum increasing trend of monthly average solar radiation occurs in the month of August and September.
- Trend of various variables including monthly data of average wind speed of 32 stations of Bangladesh have slightly decreased.
- Maximum increasing trend of monthly average bright sunshine hours occurs in the month of July and minimum increasing trend of monthly average bright sunshine hours occurs in the month of December & January.
- Maximum increasing trend of monthly average relative humidity occurs in the month of November and minimum increasing trend of monthly average relative humidity occurs from the month of July to September.

2. From the probability distribution study of different climatic parameters, it can be understood that, particular variable follows particular probability distribution. From the analysis of weighted average method, best fitted distribution has been fixed for a particular variable of a particular climatic parameter.
   - Most of the monthly rainfall data series follow EV-1 and lognormal distribution except July, which follows normal distribution.
   - Most of the monthly evaporation data series follow log-normal and normal distribution except October month, which follows uniform distribution.
   - Monthly average maximum temperature data series follow normal distribution except May, which follows uniform distribution and June, which follows EV-1 distribution.
   - Monthly average minimum temperature data series follow normal and log-normal distribution except March, which follows uniform distribution.
   - Most of the monthly average wind speed data series follows EV-1 distribution except January and March, which follows log normal distribution.
   - Most of the different bright sunshine hour variables including monthly average data series follow normal distribution except February, which follow log normal distribution.

- Most of the different relative humidity variables including monthly average data series follow normal distribution except August, which follows log-normal distribution.

3. Comparison of chi-square value with critical chi-square value, it can be concluded that most of the chi-square value for the best fitted distribution for each climatologic parameters are within in the range of critical chi-square value with 95% confidence level, not including evaporation rate and bright sunshine hours.
4. From increase in overall temperature, it can be concluded that Bangladesh is in the risk of climate change i.e. global warming. Again, increasing tendency of relative humidity along with increasing rate of rainfall in summer predominating wetter summer and decreasing tendency of relative humidity along with decreasing rate of rainfall in winter indicates drier winter.

5.3 RECOMMENDATIONS

- In this study, for maximum monthly average temperature data, maximum value of maximum temperature data series has considered for different type of temperature variables. Minimum value of maximum temperature data series could be considered for further analysis.
- Similarly, for minimum monthly average temperature data, minimum value of minimum temperature data series has considered for different type of temperature variables. Maximum value of minimum temperature data series could be considered for further analysis.
- In probability distribution study, only six probability distribution functions have considered. Other probability distribution functions can be considered for further study.

REFERENCES

Adamgbe, E., M. and Ujoh, F. (2012). Variations in Climatic Parameters and Food Crop Yields: Implications on Food Security in Benue State, Nigeria. Adamgbe & Ujoh. Con. J. Envtal Stds, Vol. 7, pp.59-67

Ahmed, T. (2009), Study on spatial and temporal variation of evaporation and related climatic parameters, MSc. Project report, Bangladesh University of Engineering and Technology.

Akhter, S. (1992). "Selection of statistical distribution for extremes of preceitation in south east region." MSc. Thesis, Bangladesh University of Engineering and Technology.

Bartholy, J. and Pongracz, R. (2010). Analysis of precipitation conditions for the Carpathian Basin based on extreme indices in the 20th century and climate simulations for 2050 and 2100. Physics and Chemistry of the Earth. Vol. 35, pp. 43–51.

Batisani, N. and Yarnal, B. (2010). Rainfall variability and trends in semi-arid Botswana: Implications for climate change adaptation policy. Applied Geography, Vol. 30, pp. 483–489

Ben-Zvi, A. (2009). *Rainfall intensity–duration–frequency relationships derived from large partial duration series.* Journal of Hydrology, Vol. 367, Issues 1-2, pp. 104-114.

Boyles, R., P. and Raman, S. (2003). Analysis of climate trends in North Carolina (1949–1998). Environment International, Vol. 29, pp. 263– 275.

CCC, (2009). Characterizing Long-term Changes of Bangladesh Climate in Context of Agriculture and Irrigation. Climate Change Cell, DoE, MoEF; Component 4b, CDMP, MoFDM. Month 2009, Dhaka.

Chen, H., Guo, S., Xu, C. and Singh, B., P. (2007). Historical temporal trends of hydro-climatic variables and runoff response to climate variability and their relevance in water resource management in the Hanjiang basin. Journal of Hydrology, Vol. 344, pp. 171– 184.

Chow, V. T., Maidment, D.R., and Mays, L. W. (1988). *Applied Hydrology,* McGraw-

Hill International Editions. Civil Engineering Series.

Daugherty, R. L., Franzini, J. B. and Finnemore, E.J. (1989). *Fluid Mechanics with Engineering Applications*. SI Metric Edition, McGraw-Hill Book Company.

Dhorde, A., Dhorde, A. and Gadgil, A., S. (2009). Long-term Temperature Trends at Four Largest Cities of India during the Twentieth Century. J. Ind. Geophys. Union. Vol.13, Issue 2, pp.85-97.

Ettoumi, F. Y., Mefti, A., Adane, A. and Bouroubi, M. Y. (2002). *Statistical analysis of solar measurements in Algeria using beta distributions*. Renewable Energy, Vol. 26, Issue 1, pp. 47-67.

Everitt, B.S. (2006) The Cambridge Dictionary of Statistics, 3rd Edn. pp. 313–314. Cambridge University Press, Cambridge. ISBN 0521690277.

Exell, R. H. B. (1981). *A mathematical model for solar radiation in South-East Asia (Thailand)*. Solar Energy, Vol. 26, Issue 2, pp. 161-168.

Farhana, S. (2011). Characterizing rainfall trend in Bangladesh by temporal statistics analysis. Proceeding of: 4th Annual Paper Meet and 1st Civil Engineering Congress, December 22-24, 2011, Dhaka, Bangladesh. Noor, Amin, Bhuiyan, Chowdhury and Kakoli (eds), pp. 86-94

Gierens, K. M., Schumann, U., Helten, M., Smit, H., and Marenco, A. (1999). *A distribution law for relative humidity in the upper troposphere and lower stratosphere derived from three years of MOZAIC measurements.* Ann. Geophys., Vol. 17, pp. 1218–1226.

Global Cooling (2009)
URL: http://ecological-problems.blogspot.com/2009/10/what-is-global-cooling-definition-and.html (Last accessed on 08-Sep-2012)

Haag, W., Kärcher, B., Ström, J., Minikin, A., Lohmann, U., Ovarlez, J., and Stohl, A. (2003). *Freezing thresholds and cirrus cloud formation mechanisms inferred from in situ measurements of relative humidity* . Atmos. Chem. Phys., Vol. 3, pp. 1791–1806.

Haider, S. F. and Hussain, M. Y. (1989). *Statistical Distribution of Rainfall Data and Probabilisties of the Number of Rainy Days.* Journal of Islamic Academy of Sciences. Vol. 2 Issue 4, pp. 299-302

Haksan, A., Savas, K. and Osman, S. (2010). Trend Analysis of Hydrometeorological Parameters in Climate Regions of Turkey. Proceedings of: BALWOIS 2010 – Ohrid, Republic of Macedonia ,25-29 May 2010.

Hann, C. T. (1977). *Statistical methods in hydrology.* IOWA state university press. ISBN: 0-8138-1510-X.

Hanson, L. and Vogel, R. M. (2008). *The Probability Distribution of Daily Rainfall in the United States.* ASCE-EWRI, World Water & Environmental Resources Congress 2008, Hawaii.

Hassan, M. Q. and Okubo, K. (1998). Surface Air Temperature Distribution: A Study from Southwest Bangladesh. Journal of the Faculty of Environmental Science and Technology, Okayama University, Vol. 3 (1), pp.97-104

Hergerl, G..C, Zwiers, F. W, Braconnot, P, Gillett, N.P, Luo, Y, Marengo Orsini, J.A, Nicholls, N and Penner, J.E, 2007, Chapter 9,Understanding and Attributing Climate Change – Section 9.2.2 Spatial and Temporal Patterns of the Response to Different Forcings and their Uncertainties.

Hossain, M. A., Hossain, M. Z. and Islam, A.K.M.S. (2002). Wind Resource Assessment of the North-West Division of Bangladesh. Proceeding of: ICECE 2002, 26-28 December 2002, Dhaka, Bangladesh, pp. 204-207.

Investopedia
URL: http://www.investopedia.com/terms/t/trendanalysis.asp#axzz22luGp2XW

IPCC, 2007, Summery for Policymakers, Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

Ishihara, T., Siang, K. K., Leong, C. C. and Fujino, Y. (2005). *Wind Field Model and Mixed Probability Distribution Function for Typhoon Simulation* . The Sixth Asia-Pacific Conference on Wind Engineering (APCWE-VI), Seoul, Korea, September 12-14, 2005.

Islam, A.K.M.S. (2009) Analyzing changes of temperature over Bangladesh due to Global warming using historic data. Proceedings of the Young Scientists of Asia Conclave: Pressing Problems of Humankind: Energy & Climate. Held at Bangalore, India, organized by TWAS-ROCASA, 15-17 January, 2009.

Jaramillo, O. A., and Borja, M. A. (2004). *Wind speed analysis in La Ventosa, Mexico: a bimodal probability distribution case* . Renewable Energy, Vol. 29, pp. 1613–1630.

Joya, R. I., “Effects of Global Warming and Global Dimming in Different Parts of Bangladesh”, MSc. Project report, Bangladesh University of Engineering and Technology, 2010.

Krumm, J. and Hariharan, R. (2004). *TempIO: Inside/Outside Classification with Temperature* . The Second International Workshop on Man-Machine Symbiotic Systems, November 23-24, 2004, Kyoto, Japan, pp. 241-250.

Kyselý, J. (2002). *Probability estimates of extreme temperature events: stochastic*

modelling approach vs. extreme value distributions . Stud. geophys. geod., Vol. 46, pp. 93−112.

Mamtimin, B., Et-Tantawi, A., M., M., Schaefer, D., Meixner, F., X. and Domroes, M. (2011). Recent trends of temperature change under hot and cold desert climates: Comparing the Sahara (Libya) and Central Asia (Xinjiang, China). Journal of Arid Environments, Vol. 75, pp.1105-1113.

Manalo, E., B. (1976): Agro-Climatic Survey of Bangladesh. Bangladesh Rice Research Institute and International Rice Research Institute.

McCutcheon, S. C., Martin, J. L. and Barnwell, T.O. Jr. (1993). *Water Quality in Maidment, D.R. (Editor).* Handbook of Hydrology, McGraw-Hill, New York, NY. Article: 11.3.

Michaelides, S. C., Tymvios, F. S., and Michaelidou, T. (2009). *Spatial and temporal characteristics of the annual rainfall frequency distribution in Cyprus.* Atmospheric Research, Vol. 94, Issue 4, pp. 606-615.

[1]Monahan , A. H. (2006). *The Probability Distribution of Sea Surface Wind Speeds. Part I: Theory and SeaWinds Observations* . Journal of Climate, Vol. 19, pp. 497-520.

[2]Monahan , A. H. (2006). *The Probability Distribution of Sea Surface Wind Speeds. Part II: Dataset Intercomparison and Seasonal Variability.* Journal of Climate, Vol. 19, pp. 521-534.

Morgan, E. C., Lackner, M., Vogel, R. M. and Baise, L.G. (2009). *Probability distributions for offshore wind speeds* . Preprint submitted to Energy Conversion and Management.

Newbold, P., Carlson, W. L., and Thorne, B. M., (2008), Statistics for business and economics, 6th Edn., Pearson education. ISBN: 0-13-188090-X.

Pal, I., Al-Tabbaa, A. (2009). Trends in seasonal precipitation extremes – An indicator of 'climate change' in Kerala, India. Journal of Hydrology, Vol. 367, pp. 62–69.

Olusina, J., O. and Odumade O., M., (2012). Modeling Climatic Variation Parameters of Nigeria Using the Statistical Downscaling Approach. FIG Working Week 2012, pp. 1-17.

Probability: Concepts and Applications, 2008
URL: http://www.scribd.com/doc/4594827/Probability-Concepts-and-Applications, last accessed on 08-Sep-2012

Pryor, S. C., Schoof, J. T. and Barthelmie , R. J. (2005). *Empirical downscaling of wind speed probability distributions* . Journal of geophysical research, Vol. 110, D19109, doi:10.1029/2005JD005899.

Punyawardena, B.V.R. and Kulasiri , D. (1996). *Stochastic Simulation of Solar Radiation from Sunshine Duration in Sri Lanka* . Research Report No: 96/06, Centre for Computing and Biometrics , Lincoln University , Canterbury, NEW ZEALAND.

Rai, R., K., Upadhyay, A. and Ojha, C., S., P. (2010). Temporal Variability of Climatic Parameters of Yamuna River Basin: Spatial Analysis of Persistence, Trend and Periodicity. The Open Hydrology Journal, Vol. 4, pp.184-210.

Rashid, M. M., Faruque, S. B. and Alam, J. B. (2012). Modeling of Short Duration Rainfall Intensity Duration Frequency (SDR- IDF) Equation for Sylhet City in Bangladesh. ARPN Journal of Science and Technology. Vol. 2, Issue 2, pp. 92-95.

Rimi, R. H., Rahman, S. H., Karmakar, S. And Hussain, G. (2009).Trend Analysis of Climate Change and Investigation on Its Probable Impacts on Rice Production at Satkhira, Bangladesh, Pakistan J. Meteorology, Vol. 6 (11), pp. 37-50

Rouf, M. A., Uddin, M. K., Debsarma, S. K. and Rahman, M. M. (2011). Climate of Bangladesh: An Analysis of Northwestern and Southwestern Part Using High Resolution Atmosphere-Ocean General Circulation Model (AOGCM), The Agriculturists, Vol. 9 (1&2), pp.143-154.

Saleque, M., G.. (1991). “Flood flows of the Jamua: A study of magnitudes and frequencies." MSc. Project report, Bangladesh University of Engineering and Technology.

Sanderson, M. and Ahmed, R. (1979). Pre-monsoon rainfall and its variability in Bangladesh: a trend surface analysis. Hydrological Sciences-Bulletin-des Sciences Hydrologiques, Vol. 24 (3), pp. 277-287

Sarker, M. A. R., Alam, K. and Gow, J. (2012). Exploring the relationship between climate change and rice yield in Bangladesh: An analysis of time series data. Agricultural Systems, Vol. 112, pp.11-16

Sen, Z. and Eljadid, A. G. (1999). *Rainfall distribution function for Libya and rainfall prediction* . Journal des Sciences Hydrologiques, Vol. 44, Issue 5, pp. 665-680.

Sherwood, S. C., Kursinski, E. R., and Read, W. G. (2006). *A Distribution Law for Free-Tropospheric Relative Humidity* . J. Climate, Vol. 19, pp. 6267-6277.

Sivakumar, T., Thennarasu, A. and Rajkumar, J., S., I. (2012). Trend analysis of the climatic parameters (2001-2007) for the northeastern zone of Tamilnadu. International Journal of Research in Environmental Science and Technology, Vol. 2(3), pp. 83-86.

Soden, B. J. , and Bretherton, F. P. (1993). *Upper-tropospheric relative- humidity from the GOES 6.7 μm channel—Method and climatology for July 1987*. J. Geophys.

Res., Vol. 98, pp. 16669 – 16688.

Spichtinger, P., Gierens, K., and Read, W., (2002). *The statistical distribution law of relative humidity in the global tropopause region*. Meteor. Z., Vol. 11, pp. 83–88.

Subramanya, K. (2003). *Engineering Hydrology,* 2nd Edn., Tata McGraw-Hill, New Delhi.

Tebakari, T., Yoshitani, J. and Suvanpimot, C. (2005). *Time-Space Trend Analysis in Pan Evaporation over Kingdom of Thailand.* Journal of Hydrologic Engineering. Vol. 10 Issue 3, pp. 205-215.

Tuck, A. F., Hovde, S. J., Kelly, K. K., Mahoney, M. J., Proffitt, M. H., Richard, E. C., and Thompson, T. L. (2003) *Exchange between the upper tropical troposphere and the lower stratosphere studied with aircraft observations*. J. Geophys. Res., Vol. 108, pp. 4734, doi:10.1029/2003JD003399.

Wilson, P. S., and R. Toumi (2005). *A fundamental probability distribution for heavy rainfall.* Geophys. Res. Lett., 32, L14812, doi:10.1029/2005GL022465.

Wikipedia: Evaporation, (2009).
URL: http://en.wikipedia.org/wiki/Evaporation, Last visited on 12-Nov-2010.

Wikipedia: Global cooling,
URL: http://en.wikipedia.org/wiki/Global_cooling, Last accessed on 08-Sep-2012

Wikipedia: Probability_distribution, (2010).
URL: http://en.wikipedia.org/wiki/Probability_distribution, Last visited on 12-Nov-2010.

Wikipedia: Application of probability distribution
URL: http://en.wikipedia.org/wiki/Probability_distribution#Applications

Yue, S. (2000). *Joint probability distribution of annual maximum storm peaks and amounts as represented by daily rainfalls* . Journal des Sciences Hydrologiques, Vol. 45, Issue 2, pp. 315-326.

[1]Zaharim, A., Najid, S. K., Razali, A. M., and Sopian, K. (2009). *Wind Speed Analysis in the East Coast of Malaysia* . European Journal of Scientific Research ISSN 1450-216X Vol. 32 No.2, pp. 208-215.

[2]Zaharim, A., Razali, A. M., Abidin, R. Z., and Sopian, K. (2009). *Fitting of Statistical Distributions to Wind Speed Data in Malaysia* . European Journal of Scientific Research , ISSN 1450-216X Vol. 26 Issue 1, pp. 6-12.

Zhang, C., Mapes, B. E., and Soden, B. (2003). *Bimodality of tropical upper tropospheric humidity*. Quart. J. Roy. Meteor. Soc., Vol. 129, pp. 2847–2866.

Zhang, Y., Guan, D., Jin, C., Wang, A., Wu, J. and Yuan, F. (2011). Analysis of

impacts of climate variability and human activity on streamflow for a river basin in northeast China. Journal of Hydrology. Vol. 410. pp. 239–247.

APPENDIX-A

Trend analysis graphs & charts

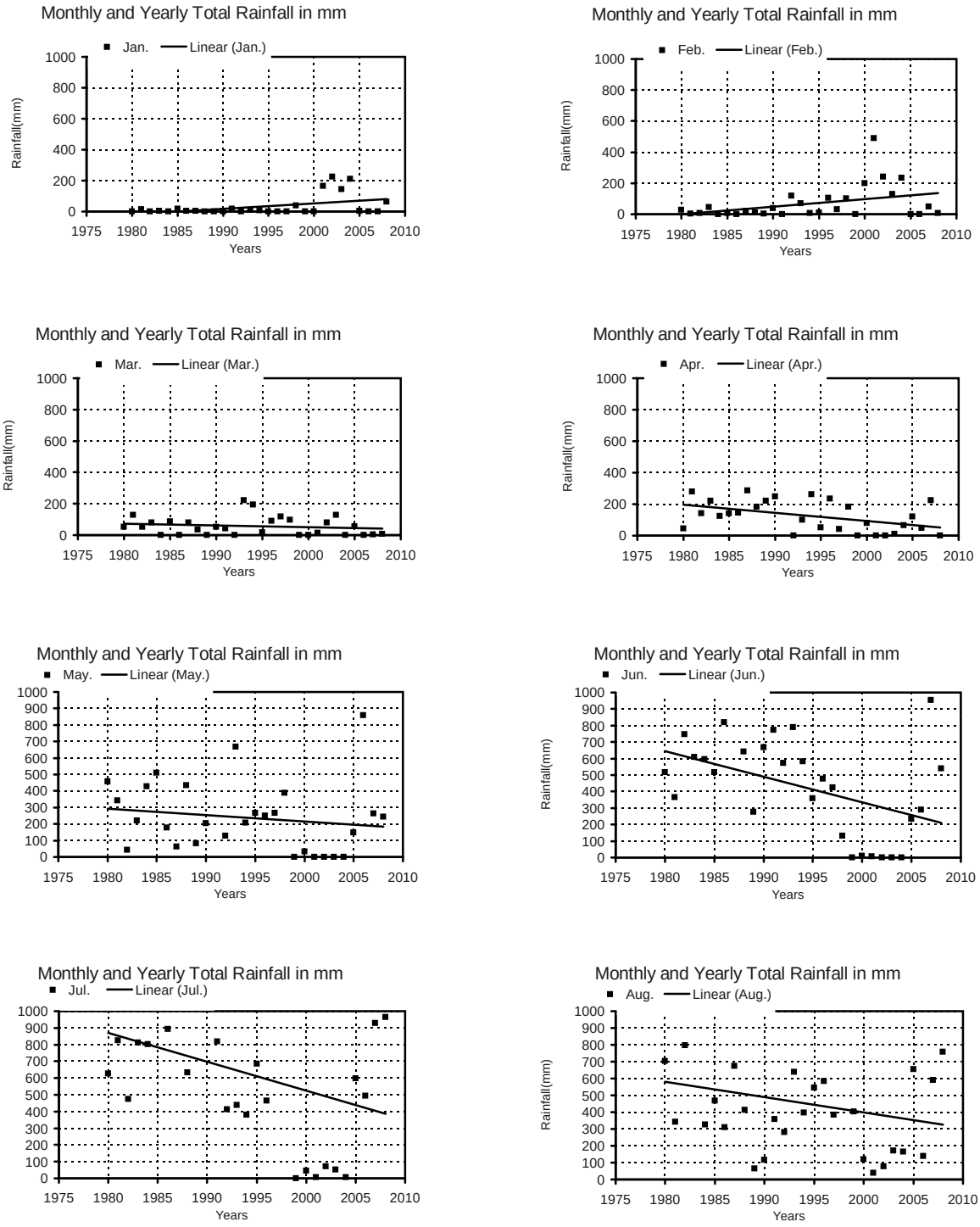
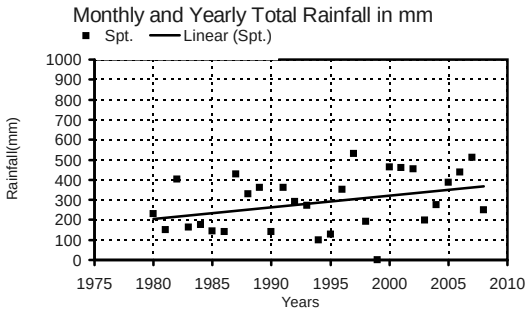
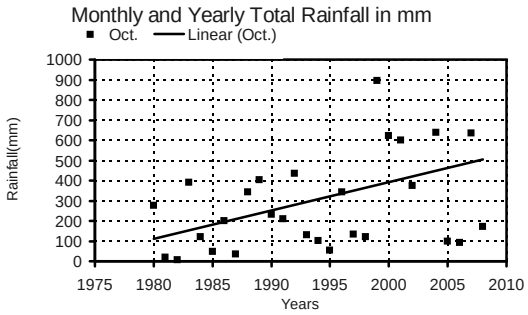
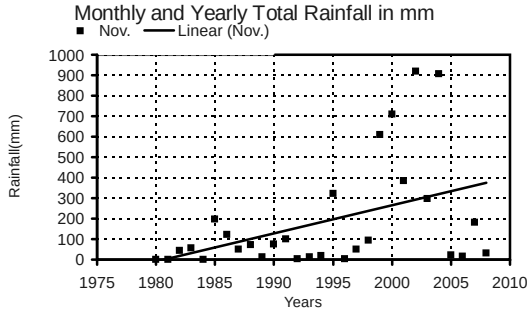
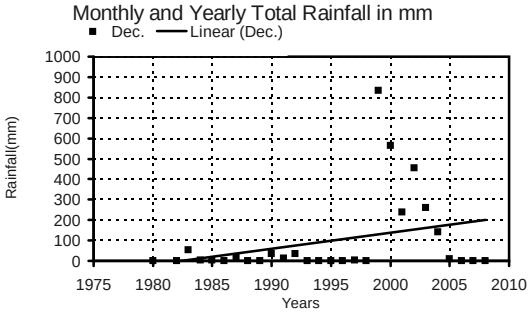


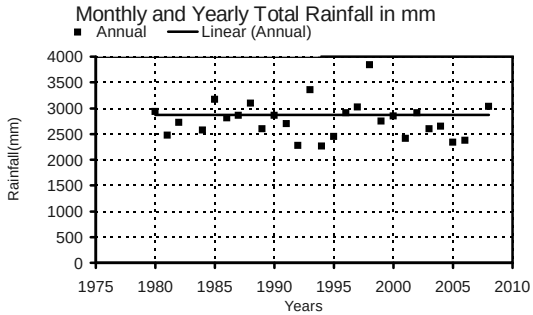
Figure A1: Output of trend analysis for rainfall variables (Chittagong)

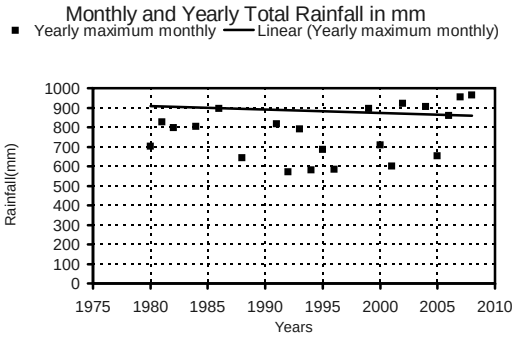


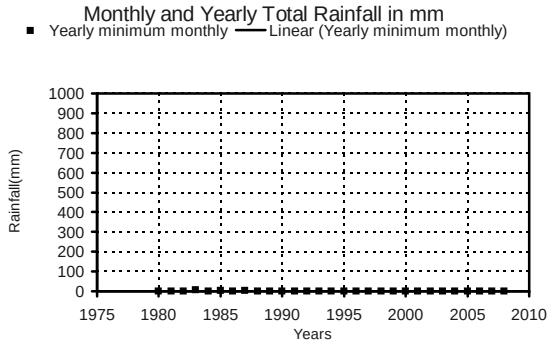












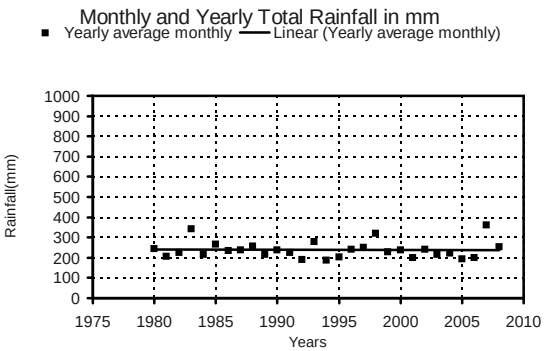


Figure A2: Output of trend analysis for rainfall variables (Chittagong)

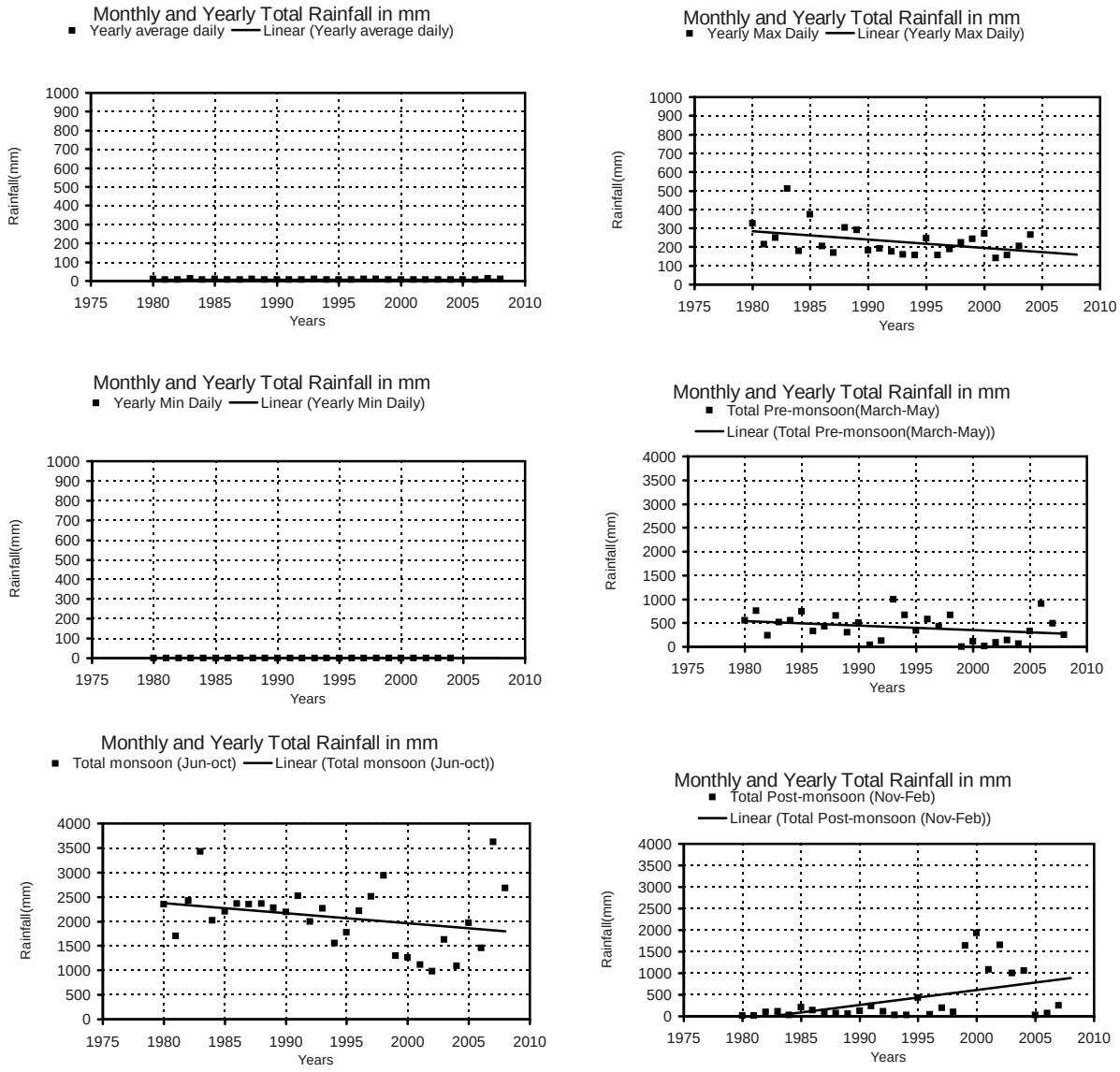


Figure A3: Output of trend analysis for rainfall variables (Chittagong)

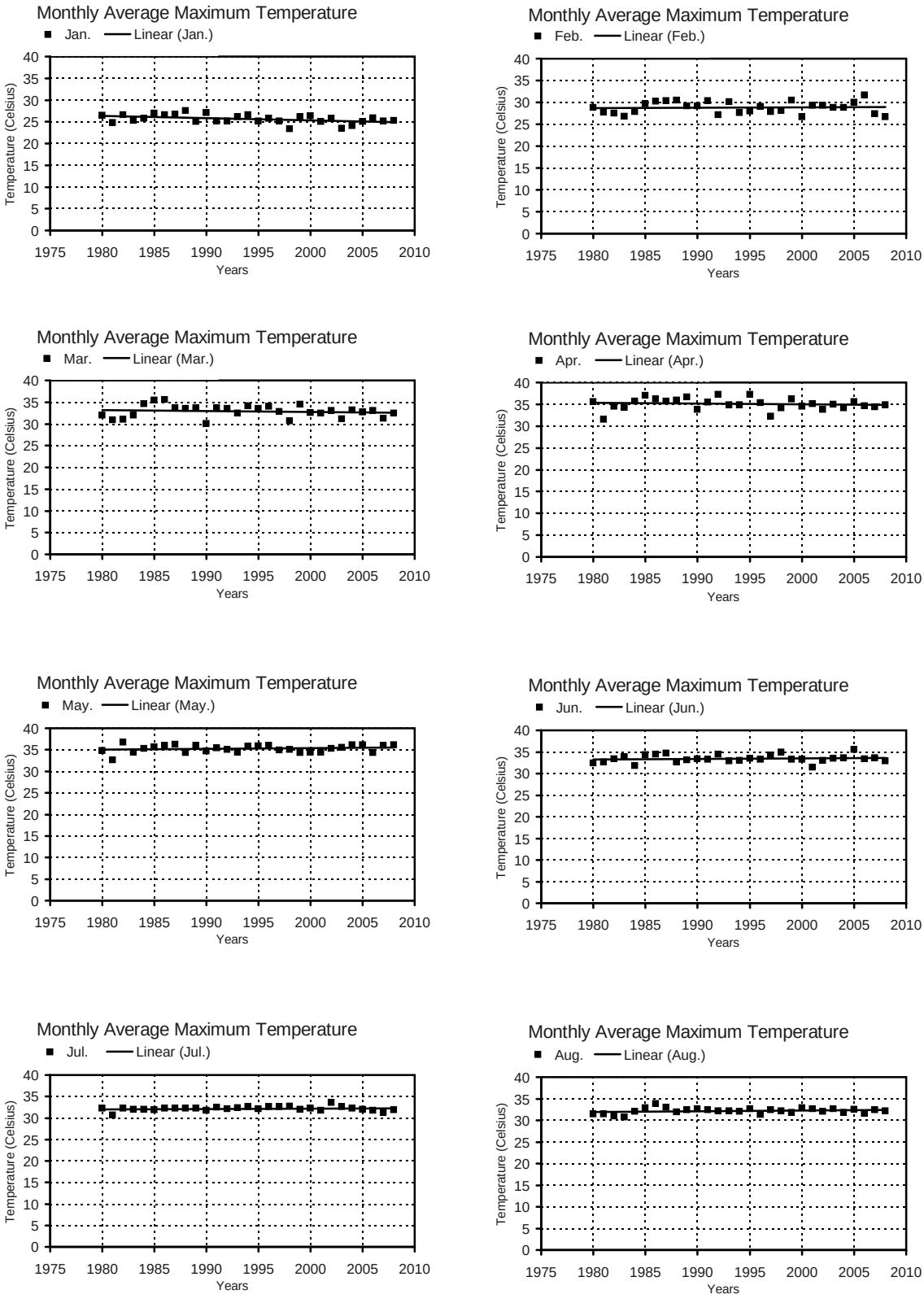


Figure A4: Output of trend analysis for temperature (Maximum) variables (Satkhira)

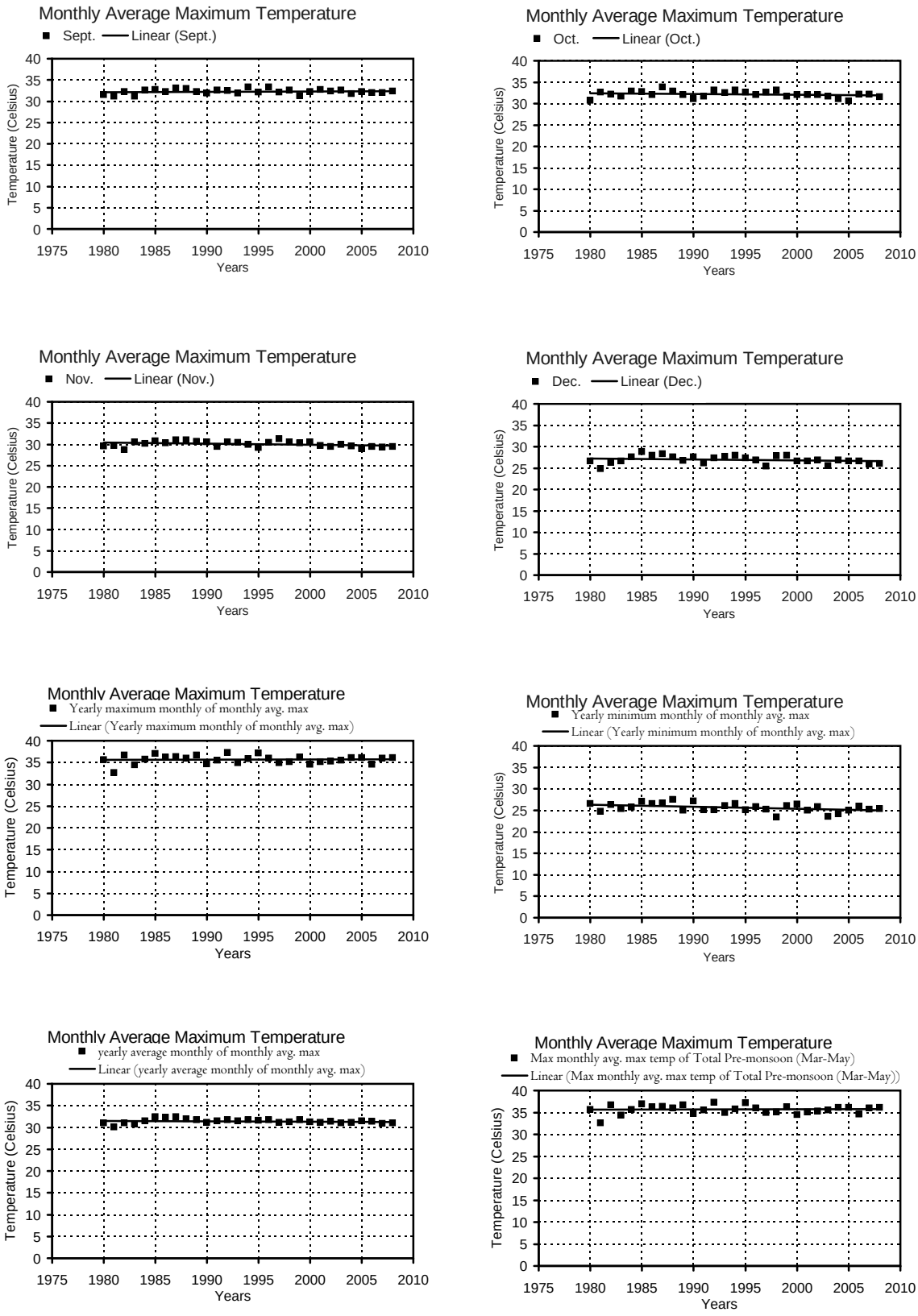


Figure A5: Output of trend analysis for temperature (Maximum) variables (Satkhira)

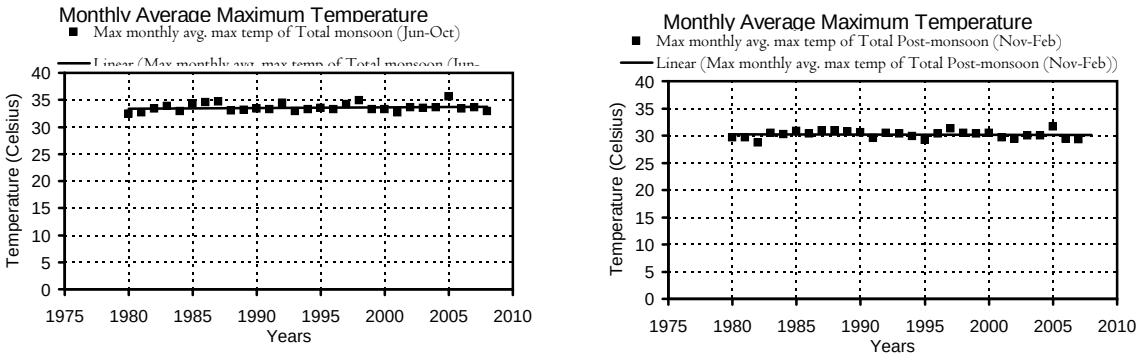


Figure A6: Output of trend analysis for temperature (Maximum) variables (Satkhira)

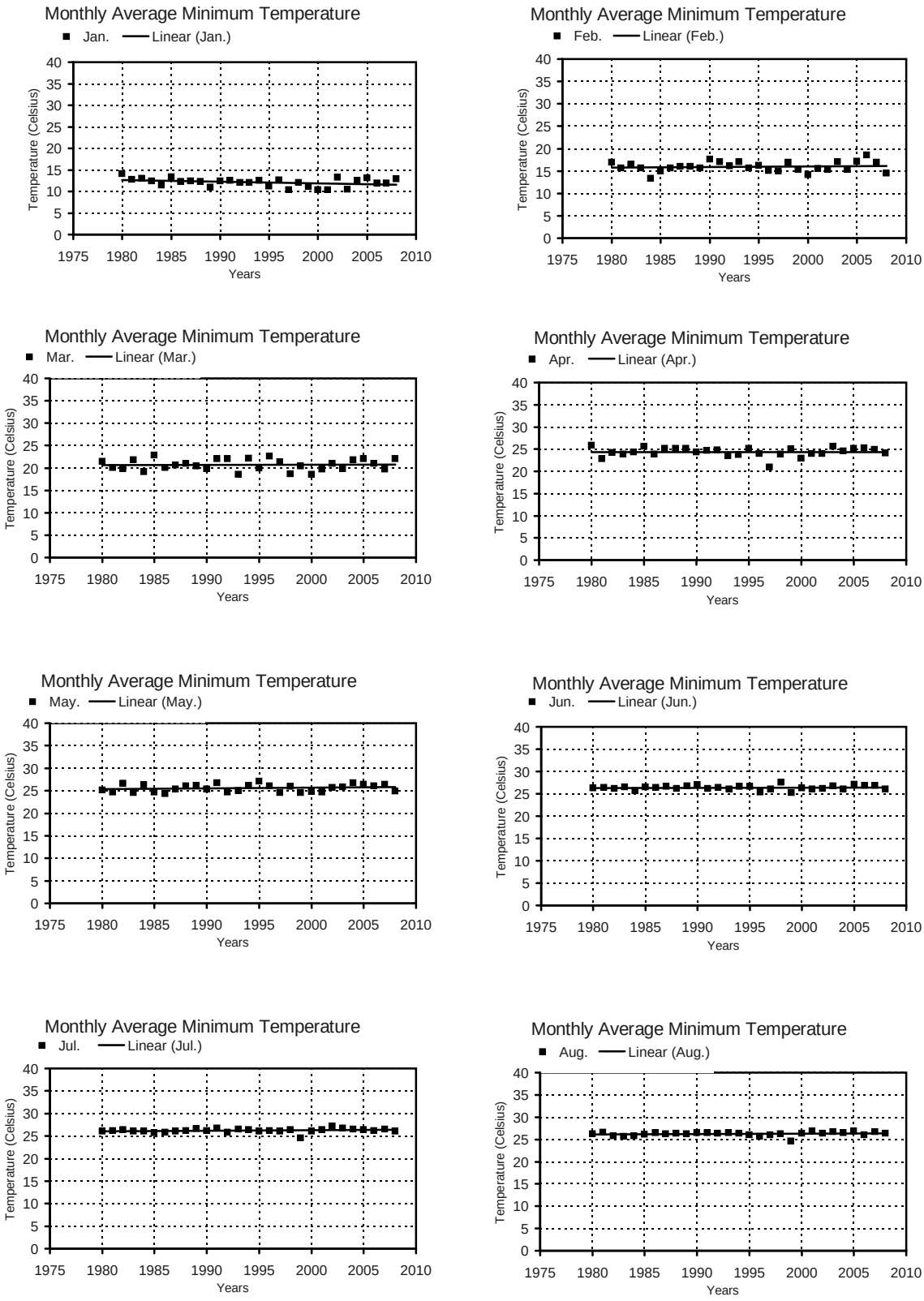


Figure A7: Output of trend analysis for temperature (Minimum) variables (Satkhira)

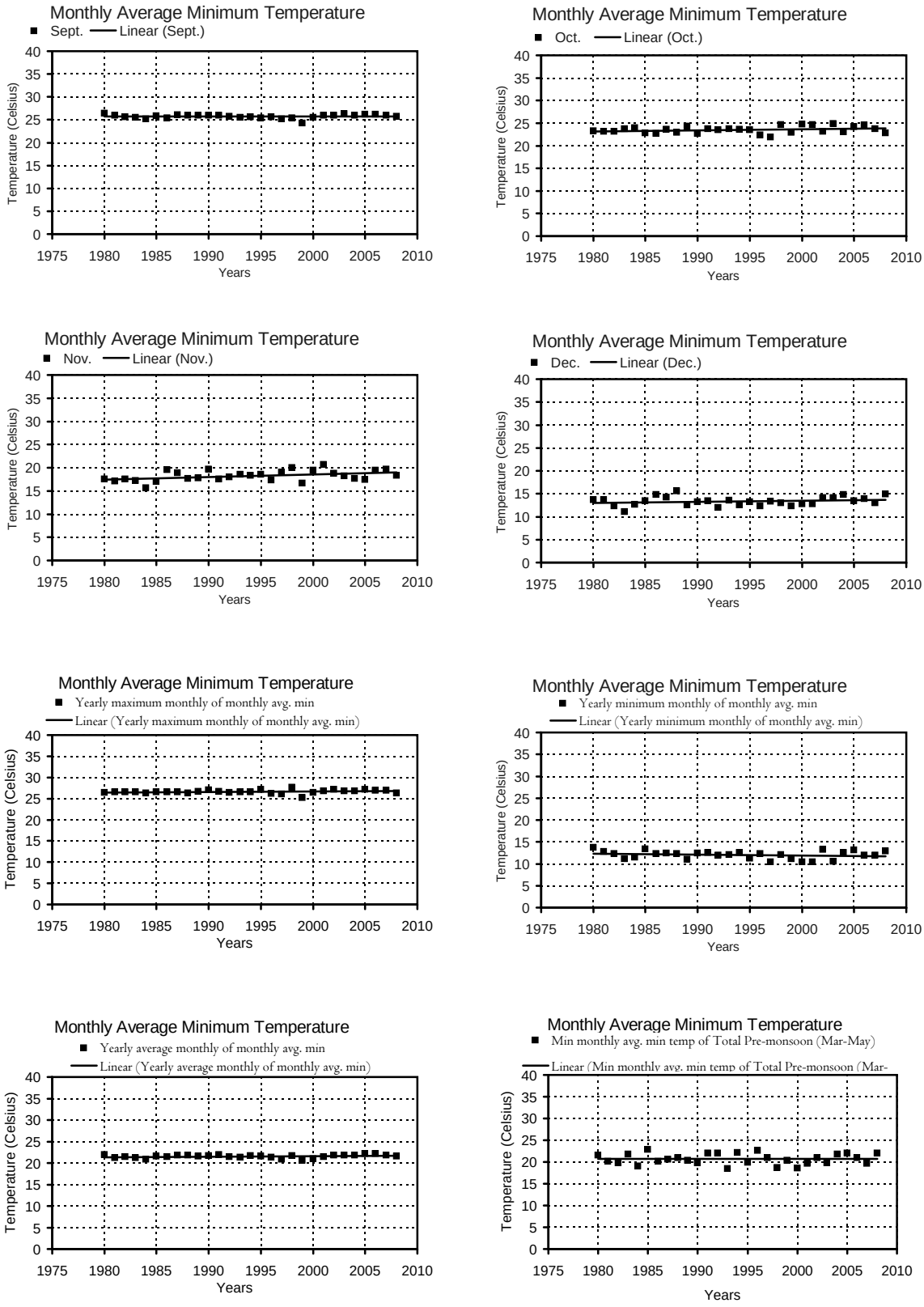


Figure A8: Output of trend analysis for temperature (Minimum) variables (Satkhira)

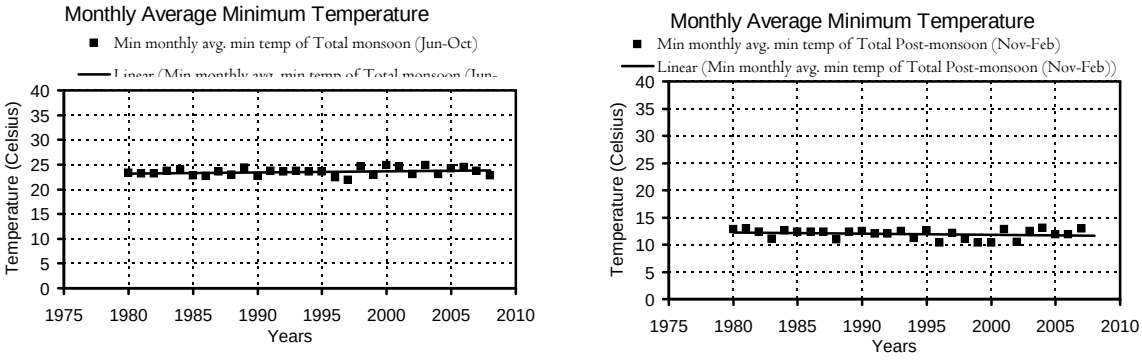


Figure A9: Output of trend analysis for temperature (Minimum) variables (Satkhira)

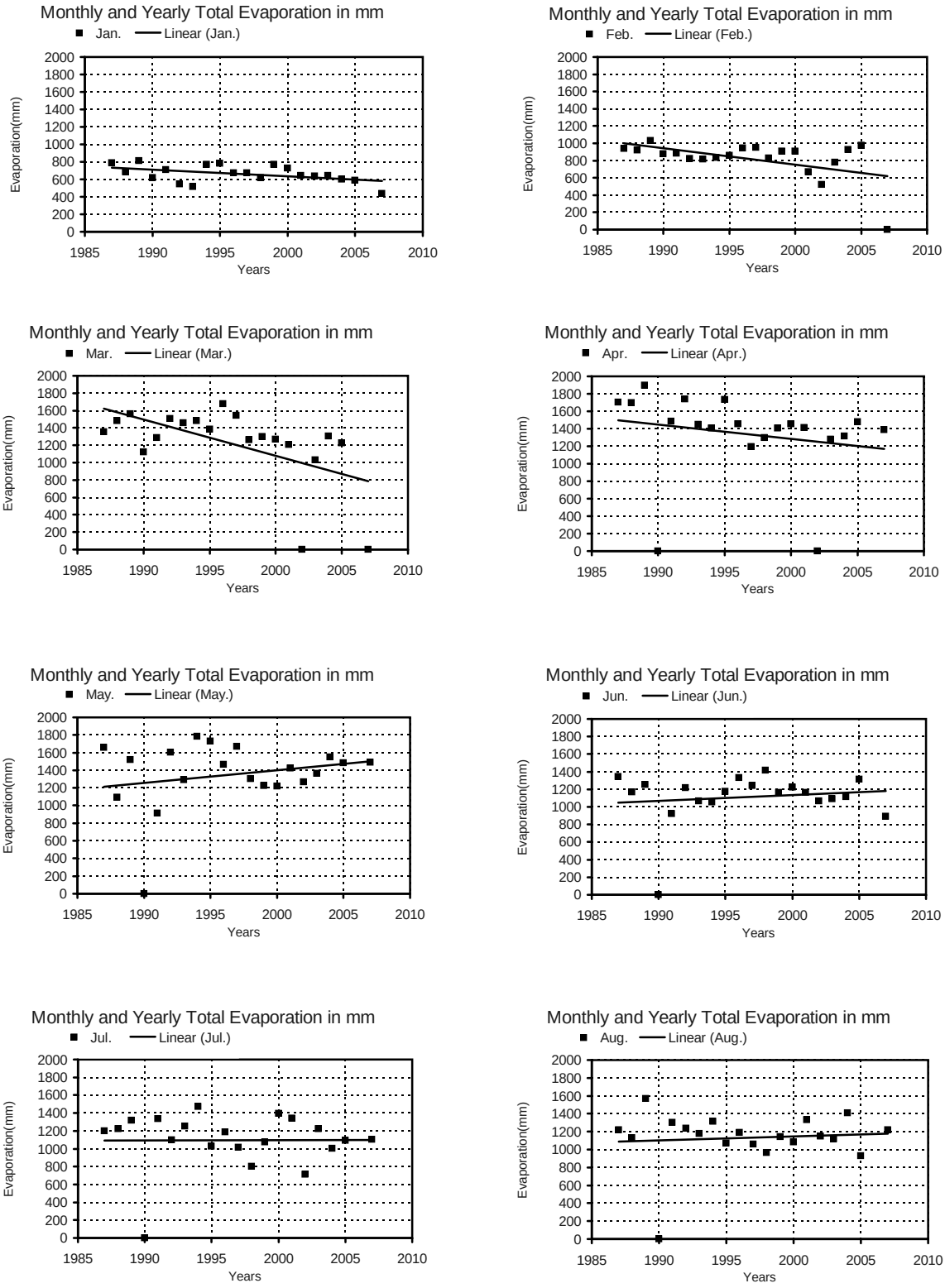


Figure A10: Output of trend analysis for evaporation variables (Mymensingh)

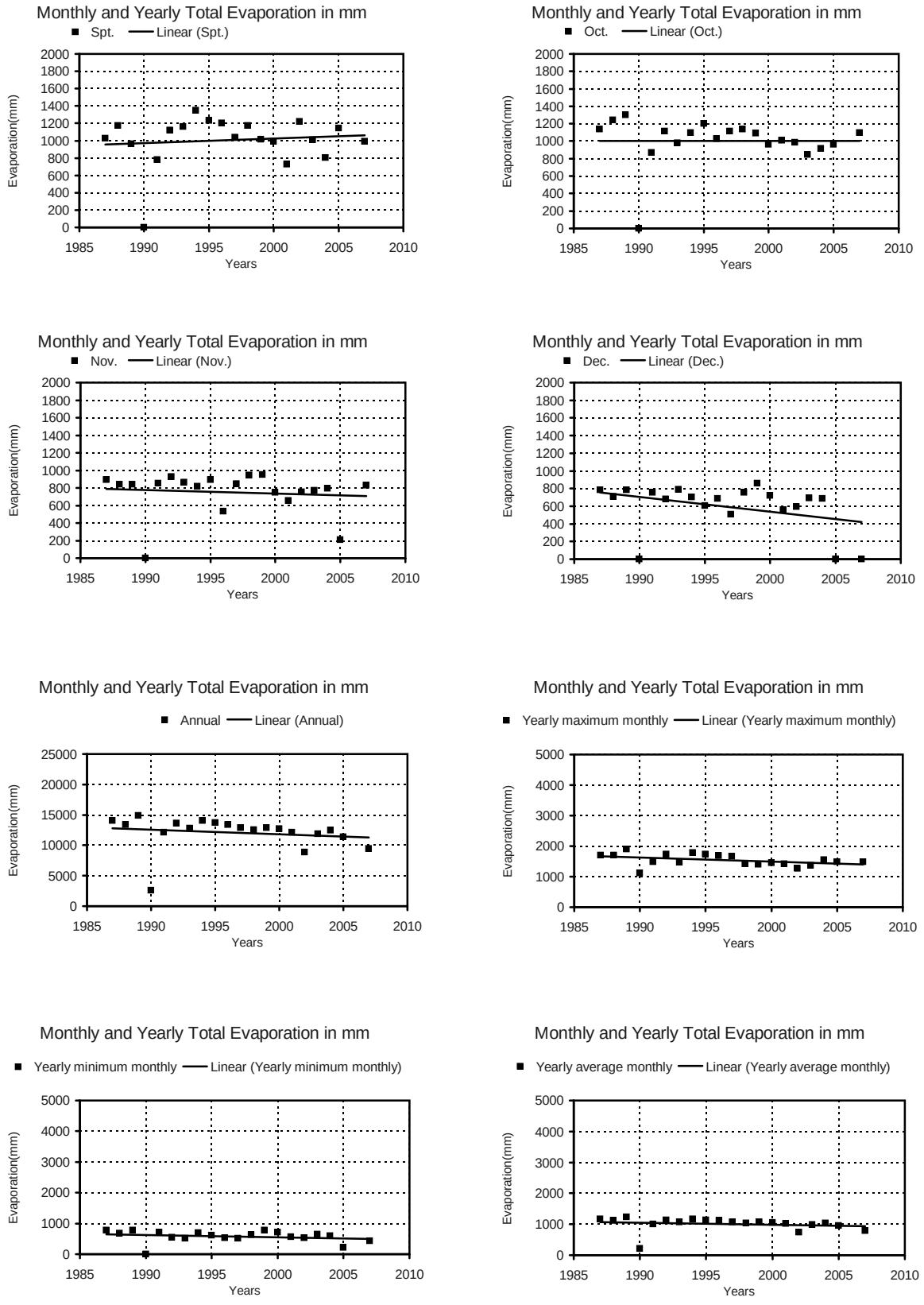


Figure A11: Output of trend analysis for evaporation variables (Mymensingh)

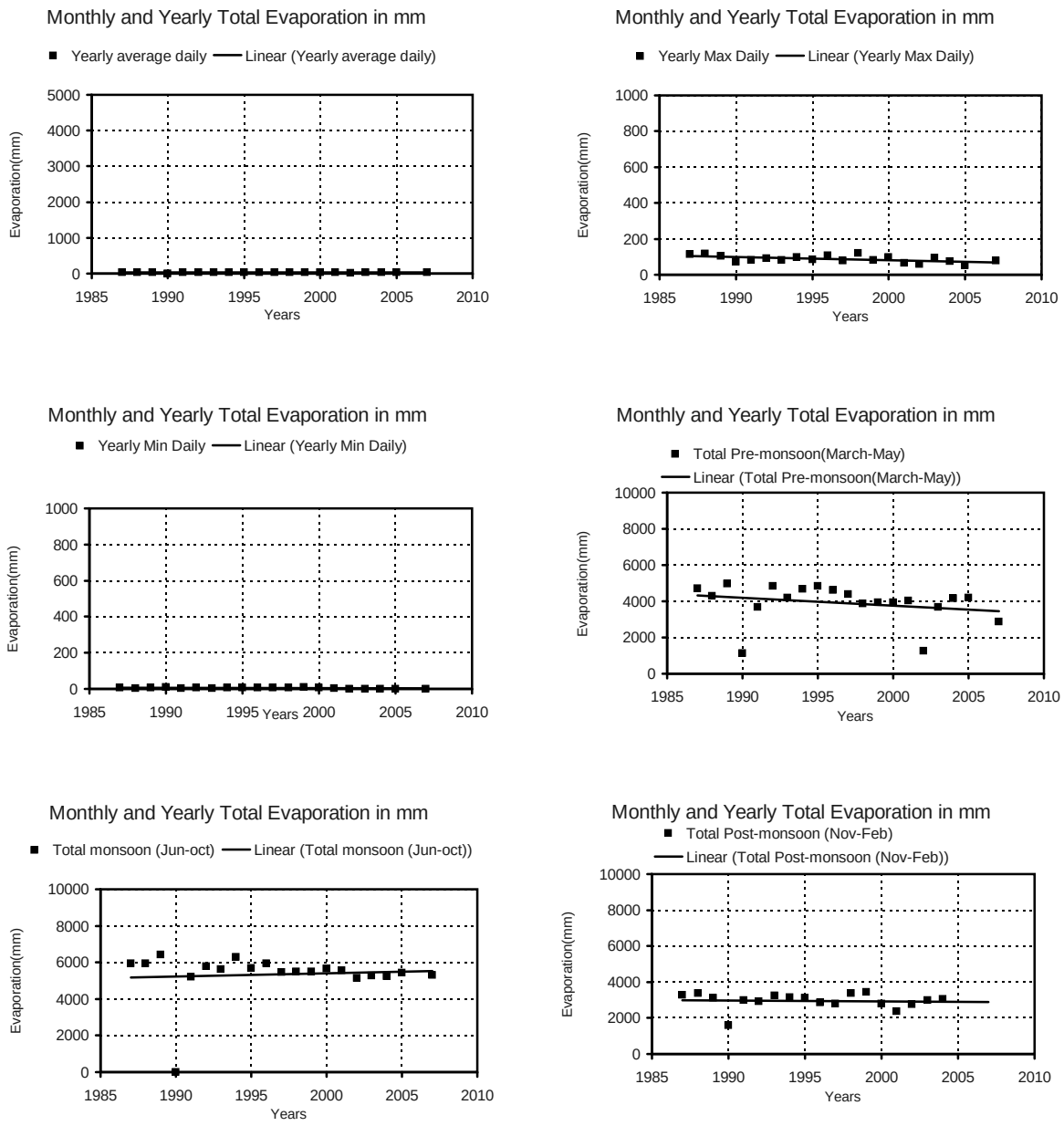
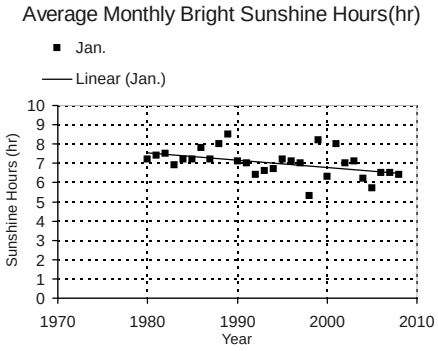
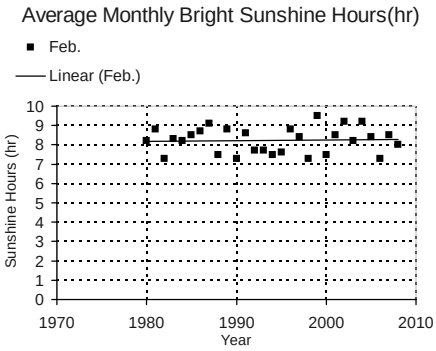
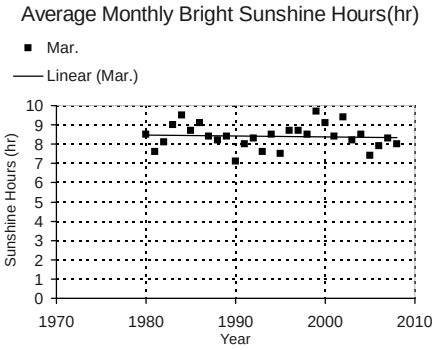
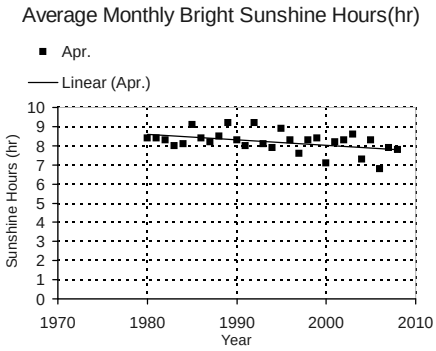


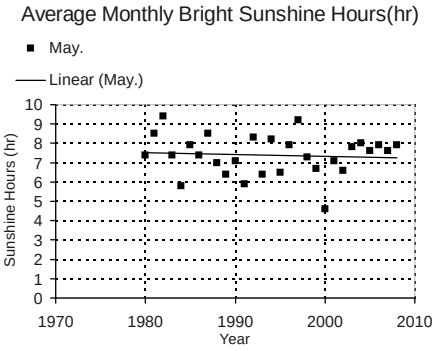
Figure A12: Output of trend analysis for evaporation variables (Mymensingh)

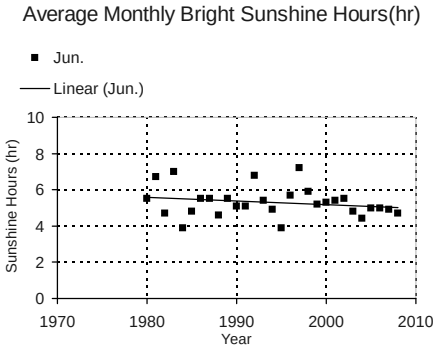


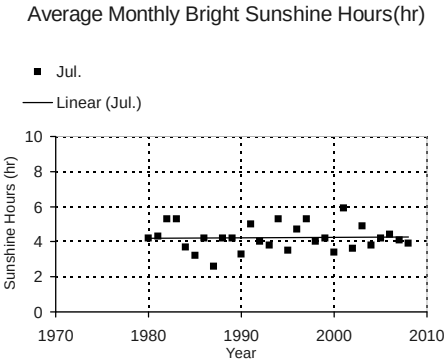












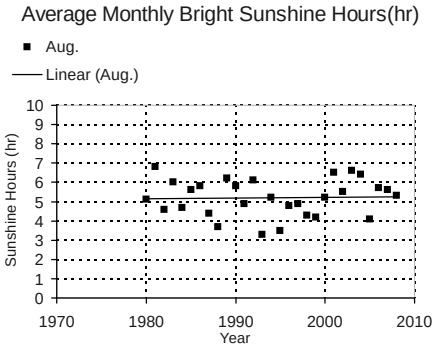
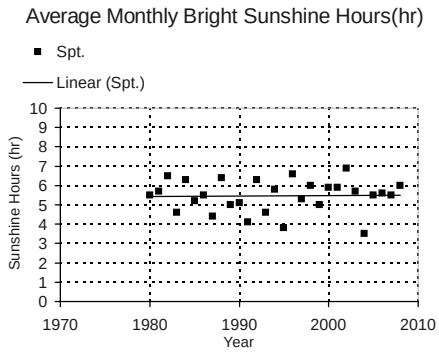
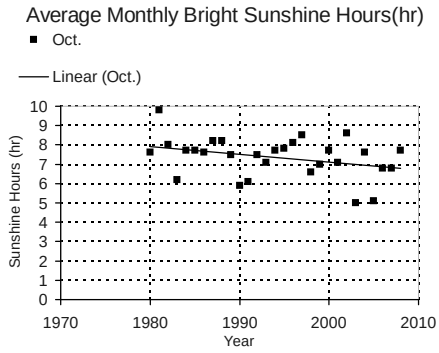
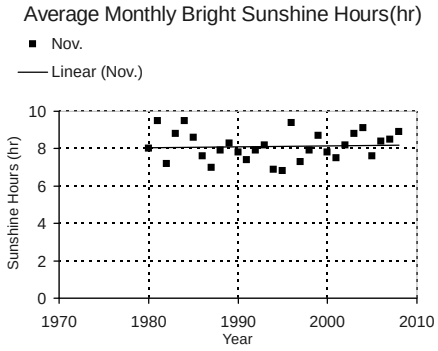
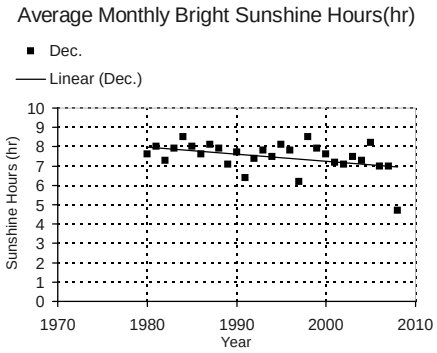


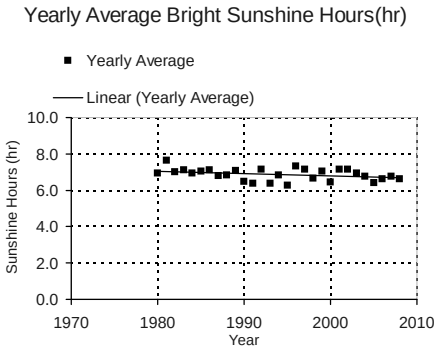
Figure 13: Output of trend analysis for bright sunshine hours variable(Rajshahi)

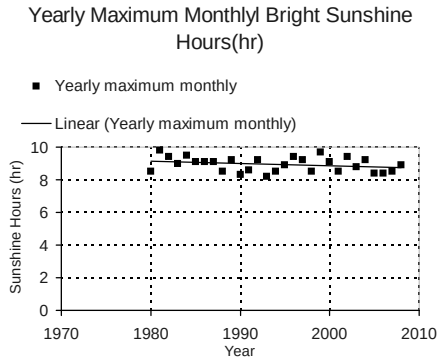


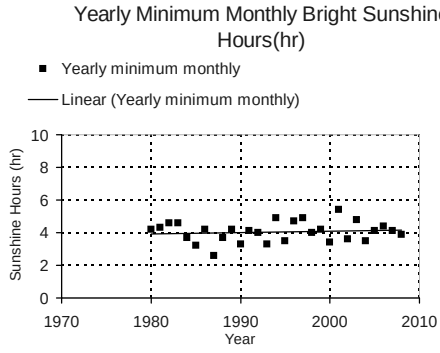












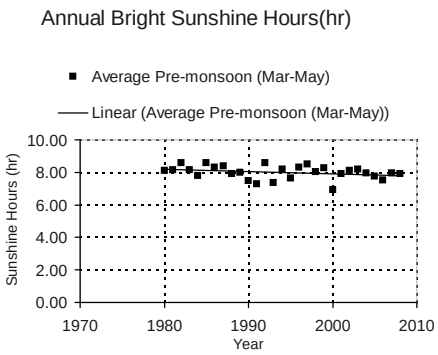


Figure 14: Output of trend analysis for bright sunshine hours variable(Rajshahi)

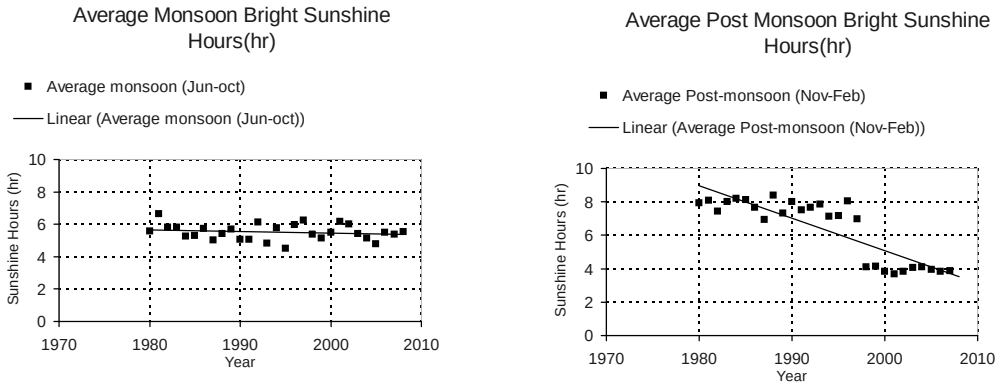


Figure 15: Output of trend analysis for bright sunshine hours variable(Rajshahi)

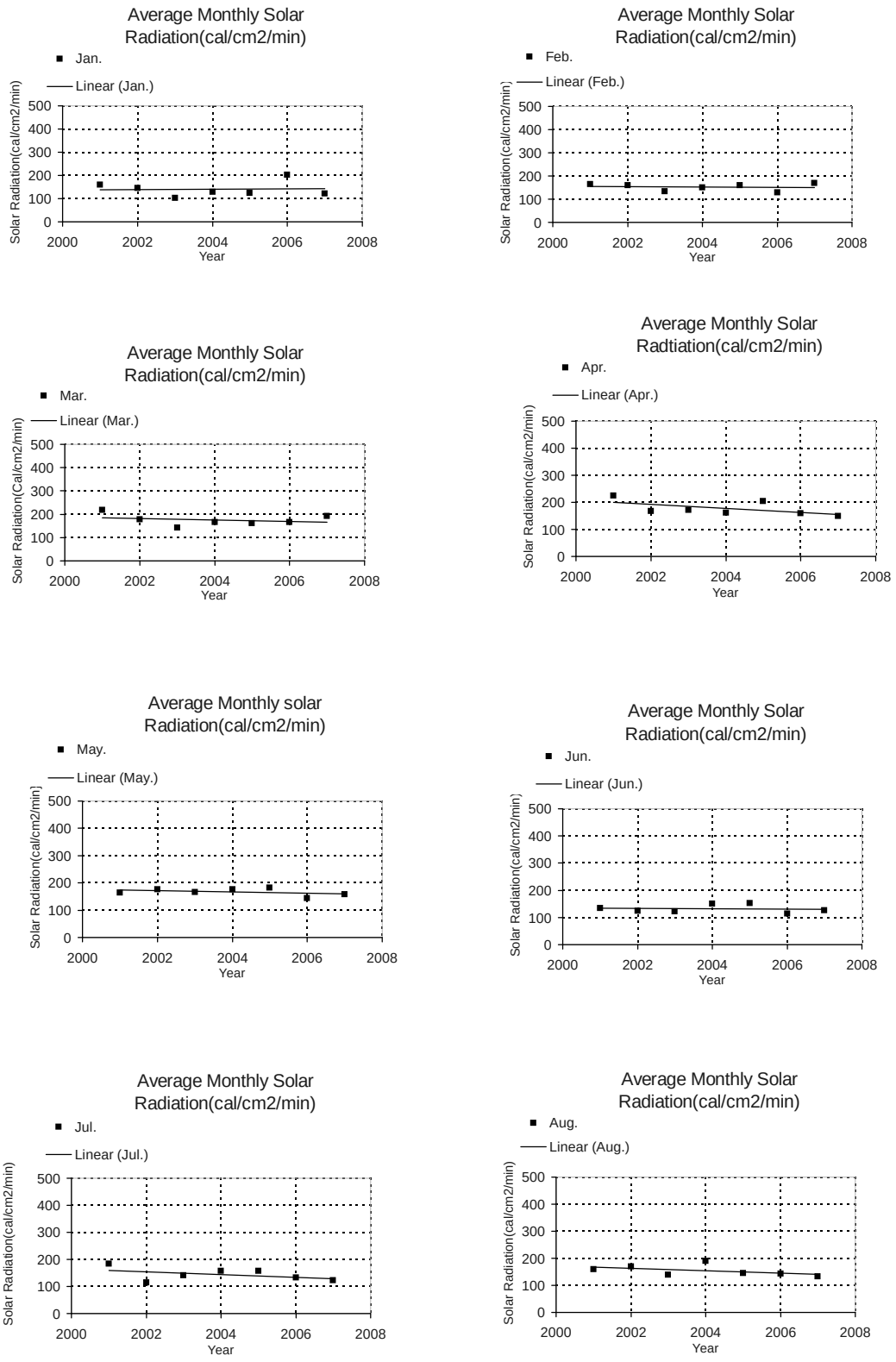


Figure 16: Output of trend analysis for solar radiation variables (Joydevpur)

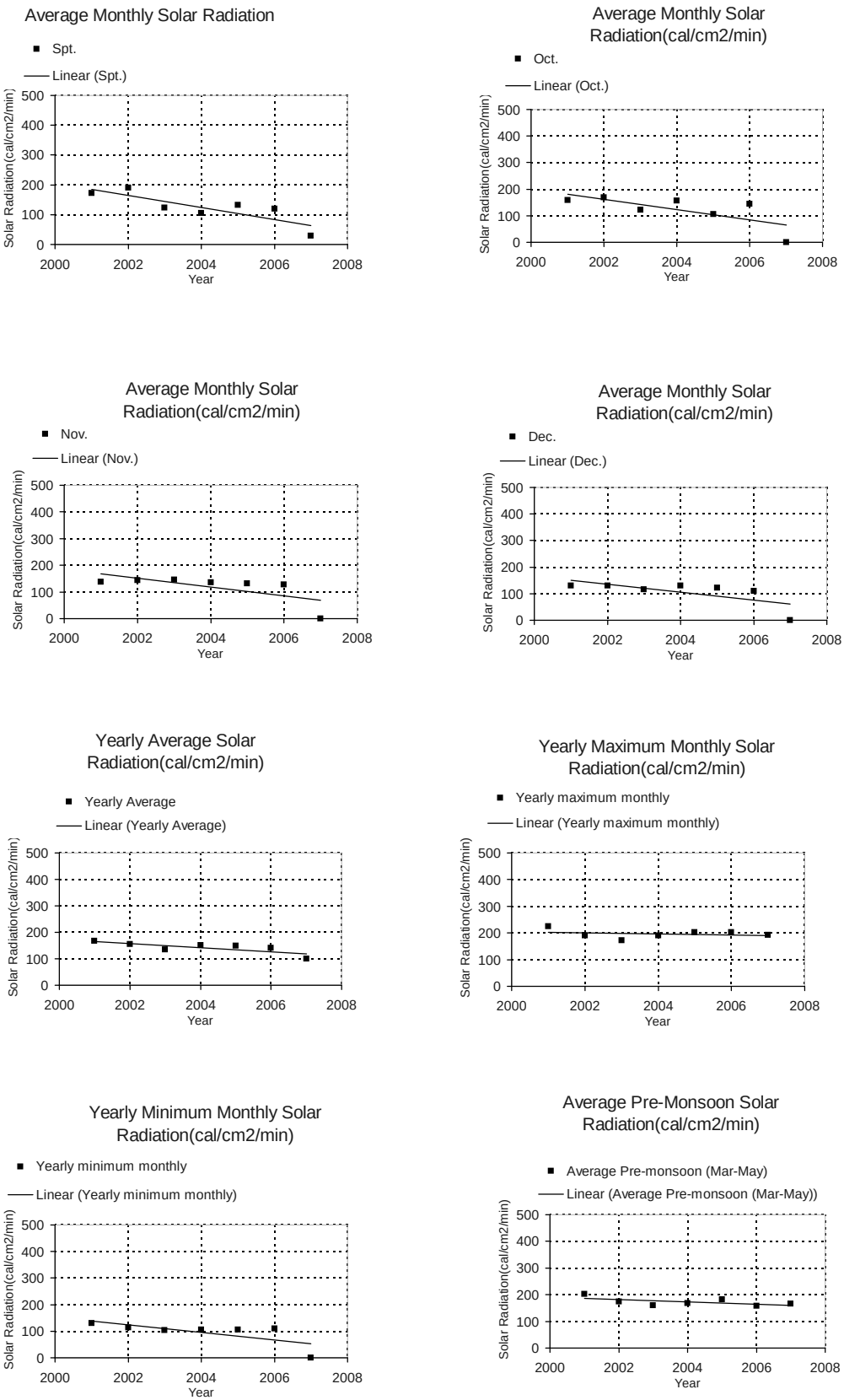


Figure 17: Output of trend analysis for solar radiation variables (Joydevpur)

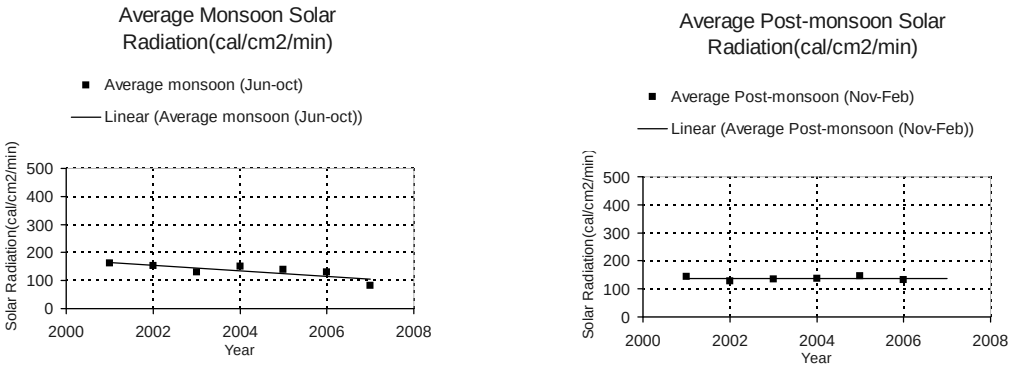
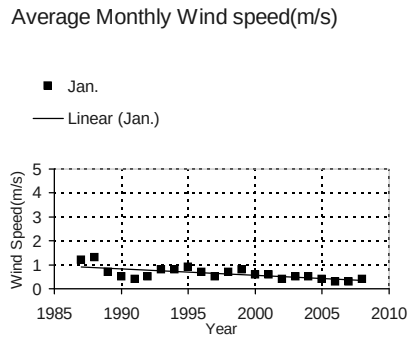
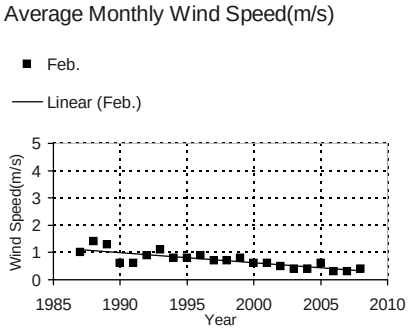
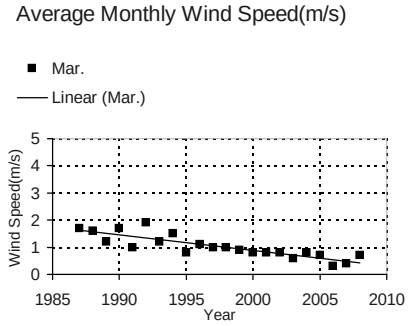
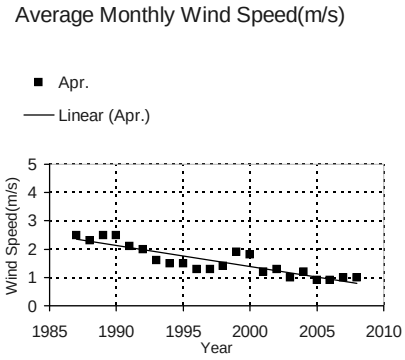


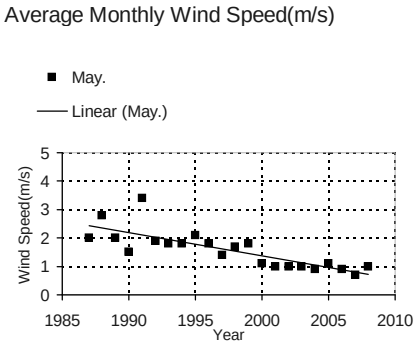
Figure 18: Output of trend analysis for solar radiation variables (Joydevpur)

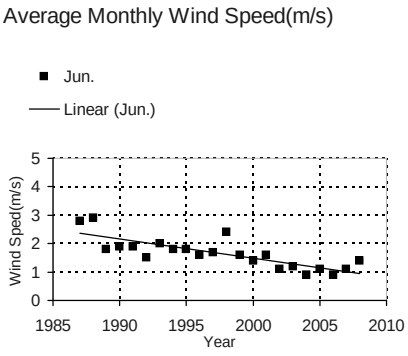


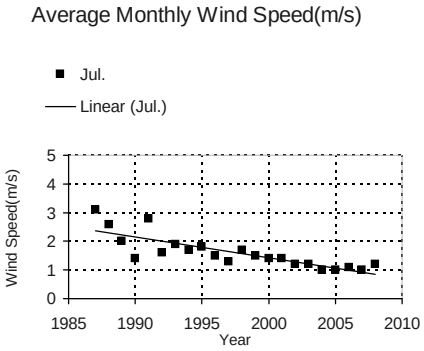












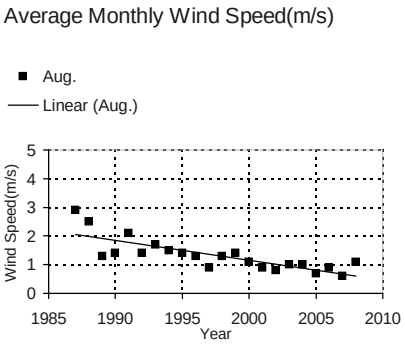
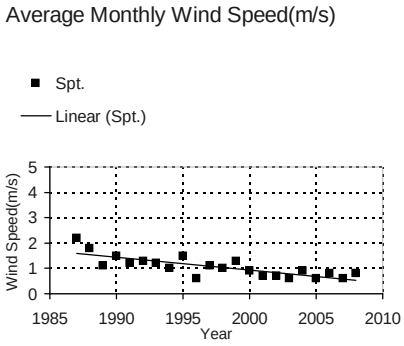
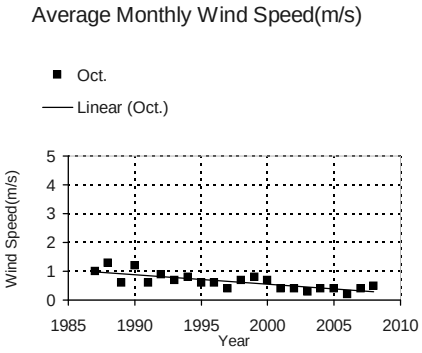
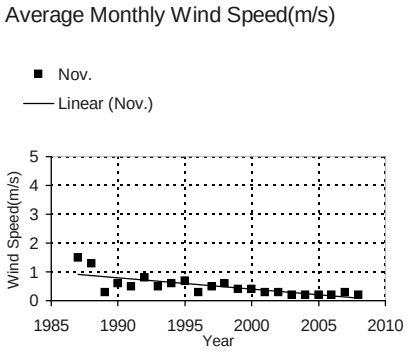
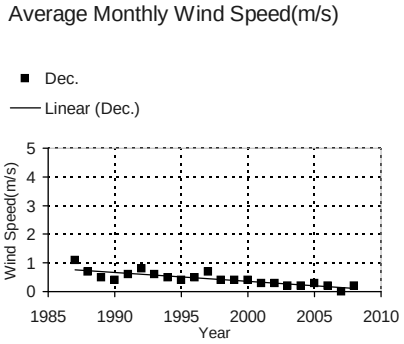


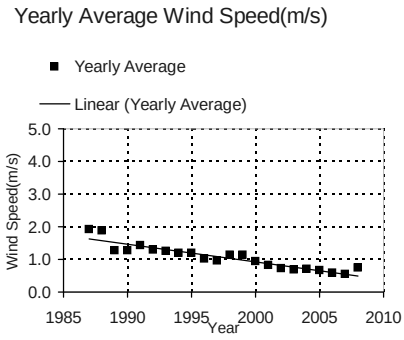
Figure 19: Output of trend anlysis for wind speed variables (Tangail)

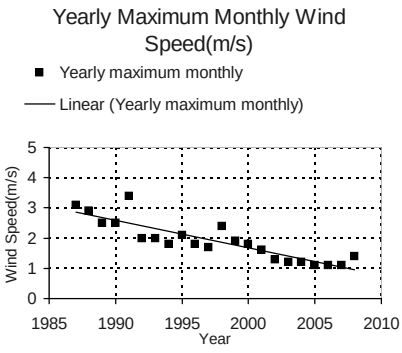


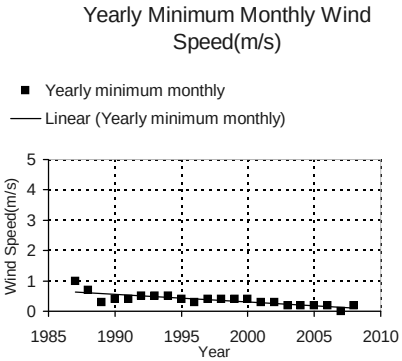












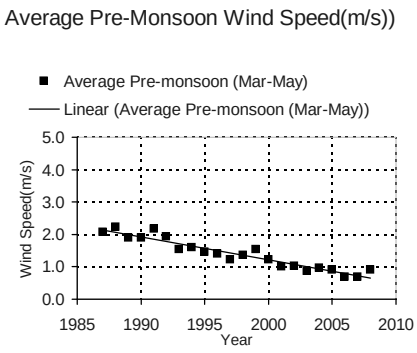


Figure 20: Output of trend anlysis for wind speed variables (Tangail)

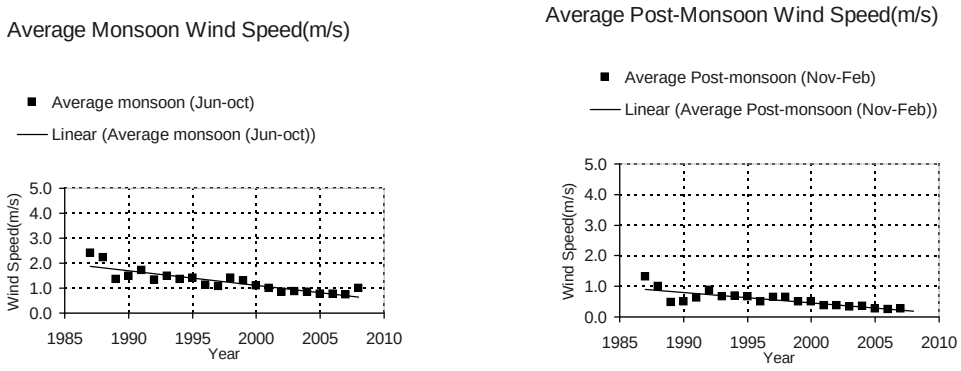


Figure 21: Output of trend anlysis for wind speed variables (Tangail)

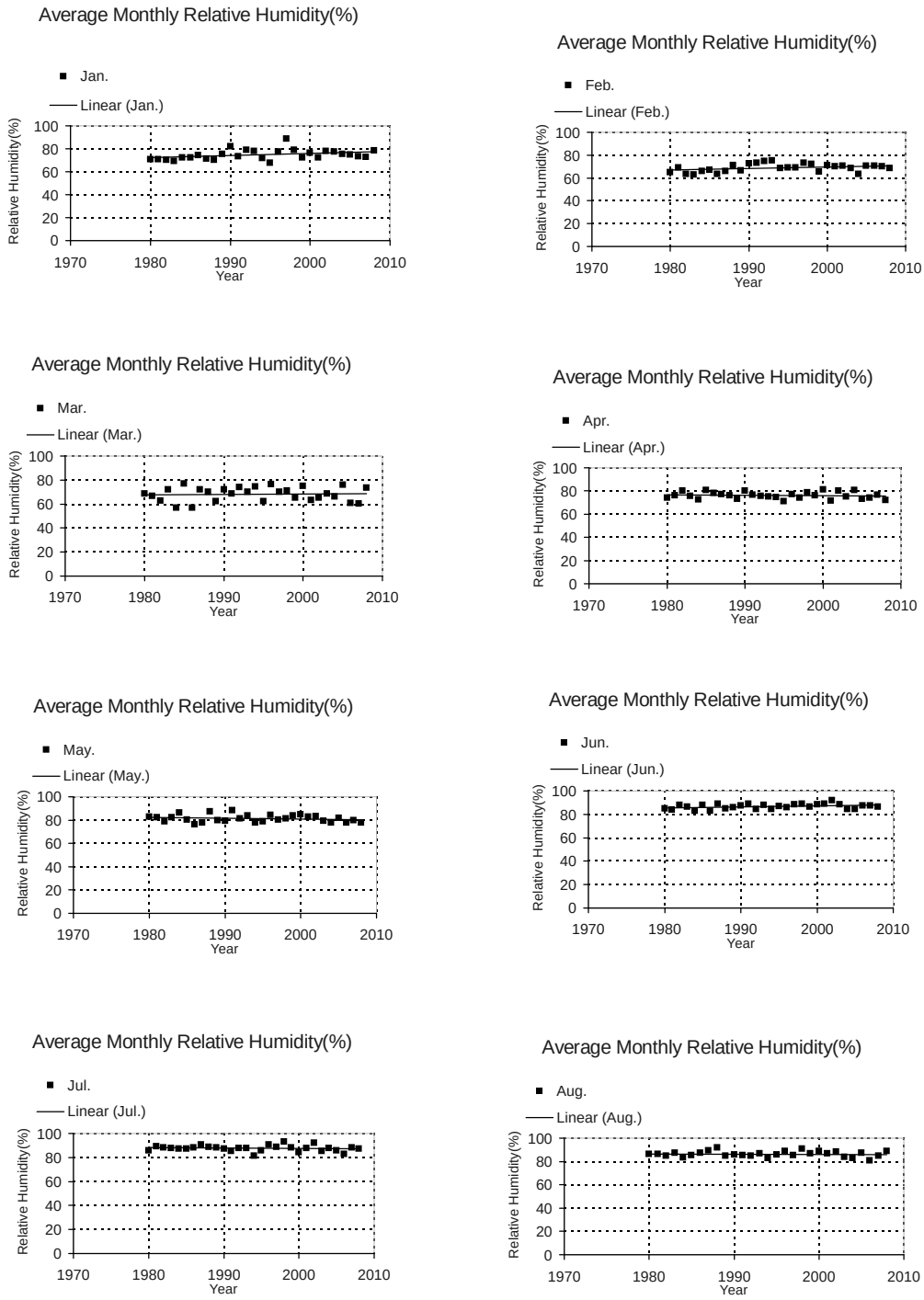


Figure 22: Output of trend analysis for relative humidity variables (Sylhet)

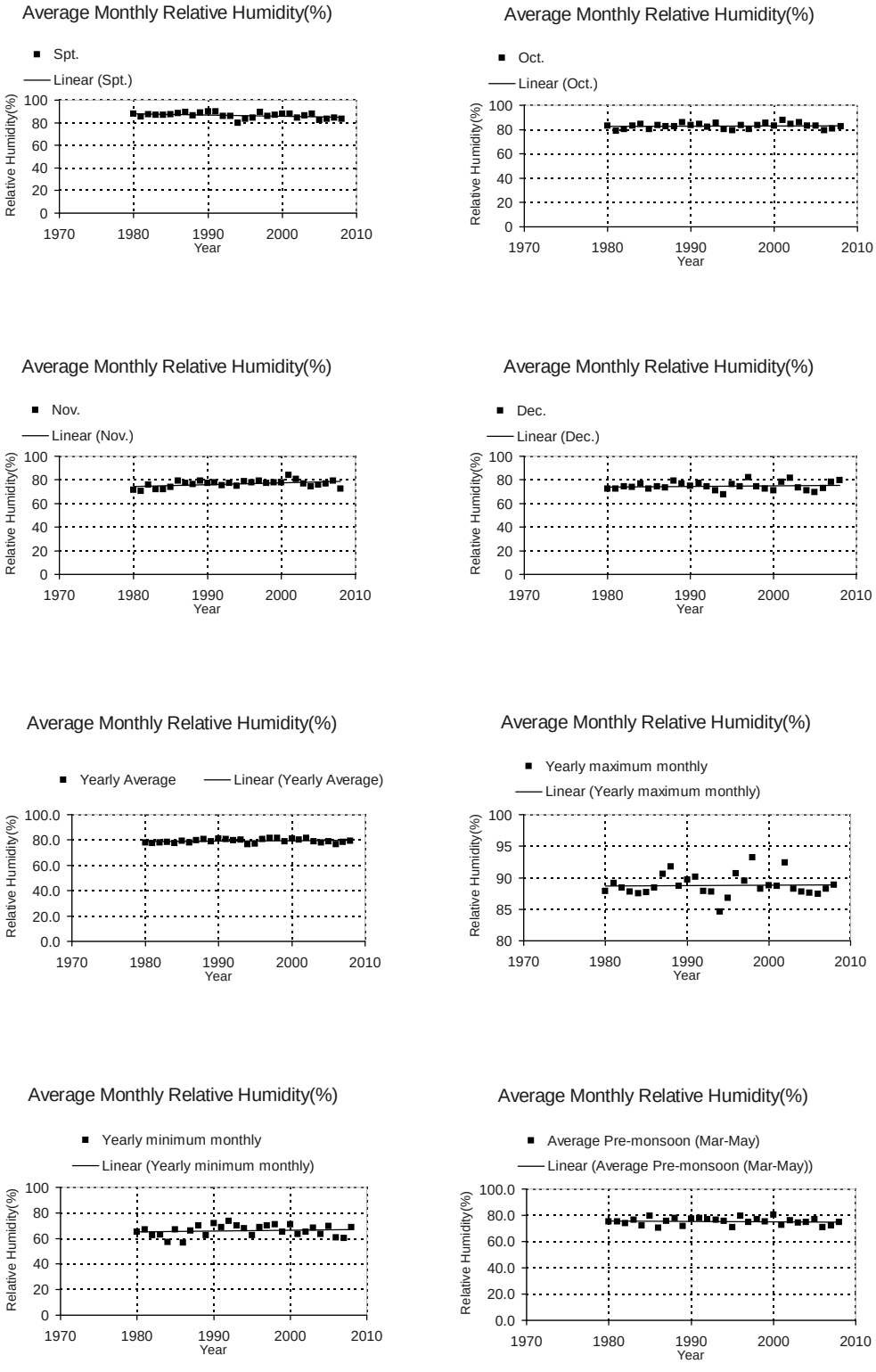


Figure 23: Output of trend analysis for relative humidity variables (Sylhet)

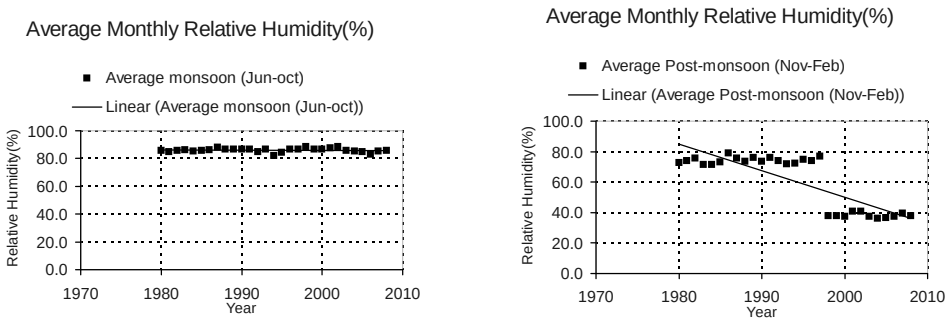


Figure 24: Output of trend analysis for relative humidity variables (Sylhet)

Table A1. Summary of Trend Analysis of Rainfall

Slope of Trend lines of historic data

	Station	Region	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Spt.	Oct.	Nov.	Dec.	Annual	Total Pre-monsoon (March-May)	Total monsoon (Jun-oct)	Total Post-monsoon (Nov-Feb)
1	Barisal	SW	0.43	-0.6616	0.4675	-3.4123	-3.0581	-1.7266	2.3044	-4.4635	5.2685	3.8438	-0.3961	-0.3069	-1.7108	-6.003	5.2266	-0.4822
2	Bhola	CR	0.03	-0.8768	-0.9049	-3.469	-3.9537	-3.5995	2.77	-4.5232	4.7227	4.7227	-0.1049	-0.3601	-6.3517	-8.3276	3.2877	-0.2217
3	Bogra	NW	-0.0517	0.0542	0.6217	0.6158	-4.4222	3.7754	-1.4222	1.5665	-2.3084	2.6778	-0.2138	-0.8271	-0.4119	-3.1847	4.2892	-1.0629
4	Chandpur	SE & EH	0.3326	-0.1451	-1.6625	-10.475	-7.4655	-7.7106	0.7872	-9.9987	-0.1879	2.9483	-0.8282	-0.5817	-36.03	-19.603	-15.205	-1.1177
5	Chittagong	SE & EH	3.4241	4.8167	-1.1951	-5.1033	-3.9004	-15.544	-17.329	-9.1281	5.832	14.068	13.683	7.8105	-0.1985	-9.6217	-20.247	34.335
6	Chuadanga	SW	-0.1029	-0.4882	1.6029	4.0618	4.8294	4.7897	-3.5147	3.2941	7.2036	5.6107	-0.425	-2.0429	33.796	10.494	14.411	-5.1802
7	Comilla	SE & EH	0.2852	-0.1675	0.5005	-2.9074	-0.9103	4.331	2.5719	-5.0163	2.5108	2.6384	0.0034	-0.5	3.3399	-3.3172	7.036	-0.0019
8	Cox's Bazar	CR	-0.0365	0.1744	-0.4547	-1.9749	10.817	-0.5642	8.8165	2.7769	2.6979	4.2473	-1.7961	-0.4273	43.869	9.2793	36.058	-1.1122
9	Dhaka	NC	-0.0089	-0.3729	-1.1665	-3.1734	-4.0094	1.9527	3.965	1.0379	1.1857	1.933	-0.2202	-0.466	0.6571	-8.3493	10.074	-0.795
10	Dinajpur	NW	-0.2985	-0.0626	0.0743	0.8053	-1.319	8.0158	-6.298	-2.8315	-1.33	5.269	0.0025	-0.4404	0.8404	-1.1857	2.8251	-0.3336
11	Faridpur	SW	0.3956	-0.3547	-1.9069	-4.0167	-5.6246	-1.1493	3.2911	-4.8591	1.6498	0.2921	-0.4719	-0.9552	-13.71	-11.548	-0.7754	-0.6596
12	Feni	SE & EH	0.1177	-0.7458	0.3715	-4.6945	-3.5793	4.6724	-4.1039	-0.23	2.9596	2.6635	0.3926	-0.0961	-3.034	-8.664	5.9616	0.2151
13	Hatiya	CR	0.2616	0.5322	-1.8084	-2.4861	3.9995	5.4044	6.9236	-2.2263	8.7505	5.9361	0.1538	-0.0675	25.373	-0.2951	24.788	1.9079
14	Ishurdi	NW	0.0064	-0.6059	-0.4768	-1.7788	-4.7793	1.47	-0.2315	-0.703	0.797	3.2596	-0.1507	-0.5365	-3.7296	-7.035	4.5921	-1.3196
15	Jessore	SW	0.1261	-1.1192	-0.169	-1.8552	-1.5389	-1.5626	9.3291	-4.433	6.0675	3.9532	0.3034	-1.1054	7.9961	-3.5631	13.354	-1.4466
16	Khepupara	CR	0.6128	-0.3374	-0.6872	-1.1507	2.5567	-1.0298	6.7138	-3.7911	7.6867	9.8823	0.0626	-0.2636	26.789	0.7187	25.926	0.5419
17	Khulna	SW	0.0325	-0.8744	-0.9665	-3.0335	-1.3892	-2.702	3.8271	-4.1207	8.1951	3.4921	0.0197	-0.4808	1.9995	-5.3892	8.6916	-0.7318
18	Kutubdia	SE & EH	0.1956	0.2414	-0.6069	0.2941	6.3182	-0.4887	5.1463	8.6074	4.9015	3.1153	-1.3586	0.0039	26.369	6.0054	21.282	-0.7739
19	M.Court	SE & EH	-0.4951	-0.5606	-0.0913	-3.2621	-2.2911	0.9512	-12.226	-13.587	5.0197	8.0163	0.7266	-0.2039	-18.076	-5.7182	-11.825	0.0164
20	Madaripur	SW	0.0429	-0.4325	-1.2616	-2.7443	-2.3389	-1.5089	3.8118	4.1931	1.524	3.5517	0.903	0.0335	-2.6123	-6.3448	3.1857	0.8459
21	Mongla	CR	0.3736	-2.1992	-1.419	-2.4035	1.2972	-0.3756	11.68	-4.3024	7.9298	6.1507	-1.0939	0.1063	15.744	-2.5253	21.083	-3.2343
22	Mymensingh	NC	0.0424	-0.1714	0.4118	0.8251	-6.3355	6.6877	-3.3	-2.9069	-0.9719	1.9512	0.1251	-0.6522	-4.2946	-6.3049	1.4601	-0.624
23	Patuakhali	CR	-0.2332	0.1234	-0.5739	-4.9819	-4.8281	-6.6719	9.3079	-6.4373	3.5257	8.3073	-2.0375	-0.3738	-4.8733	-10.384	16.862	-2.6866
24	Rajshahi	NW	-0.4443	-0.2754	0.064	-1.9293	0.2631	1.2383	1.5522	-2.7097	2.001	0.6158	-0.3655	-0.8975	1.0788	-1.2729	4.3345	-1.896
25	Rangamati	SE & EH	0.3767	-1.1749	-0.5725	-2.9325	3.5192	6.2559	0.0813	-4.1409	3.4547	1.2655	-0.7207	0.164	13.204	2.4985	11.788	-0.4351
26	Rangpur	NW	0.033	-0.1207	0.436	2.0261	-1.7512	3.031	-5.3227	-5.4714	-5.1414	7.2236	-0.0138	-0.4419	-5.5133	0.7108	-5.6808	-0.5101
27	Sandwip	CR	0.3058	-0.0288	-0.1105	-7.3824	8.8	9.4385	6.2409	-1.8903	10.827	7.3116	0.3878	-0.3052	26.816	1.3072	25.408	0.7357
28	Satkhira	SW	0.233	-0.9936	-0.1291	-0.8626	0.4818	-0.7468	2.7833	-2.4522	4.7094	4.9232	0.2118	-0.5202	7.6379	-0.5099	9.2167	0.046
29	Shitakunda	NE	0.3438	0.1182	-1.3803	-4.1069	8.1315	6.3108	5.5252	5.9764	5.5556	0.8671	-1.0795	-0.0601	21.791	2.6443	19.952	-0.4228
30	Srimangal	NE	0.3498	0.2934	-1.1012	0.5256	-2.5111	6.2648	5.8271	-1.0889	-2.6558	1.2909	-0.0968	-0.4306	6.667	-3.0867	9.6379	0.0684
31	Syadpur	NW	-1.4989	-0.1275	5.6308	17.281	14.108	15.837	32.09	1.3121	-21.33	19.701	-1.3231	-0.4835	81.198	37.02	47.611	-3.9011
32	Sylhet	NE	0.0552	0.2118	-0.7103	-5.4478	-4.5153	4.8458	-2.8547	-0.798	-8.831	-2.7788	0.6611	-0.8409	-21.003	-14.271	-10.417	0.3454
33	Tangail	NC	0.3461	-1.3281	1.4879	-4.5737	-2.4833	-0.139	1.1739	0.2868	5.9215	4.9492	-0.5788	-1.4653	7.4822	-5.5692	16.077	-3.1636
34	Teknaf	CR	-0.0719	0.4995	-0.0946	-0.7995	12.553	-2.3314	4.0458	-1.1015	3.2281	6.0379	-2.4438	-0.391	28.272	11.659	18.941	-2.0662

Table A3. Trend Analysis of maximum Temperature

Slope of Trend line of historic data

	Station	Region	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	yearly average monthly of monthly avg. max	Max monthly avg. max temp of Total Pre-monsoon (Mar-May)	Max monthly avg. max temp of Total monsoon (Jun-Oct)	Max monthly avg. max temp of Total Post-monsoon (Nov-Feb)
1	Bogra	NW	-0.0699	0.0053	-0.0415	-0.0670	0.0615	0.0096	0.0279	0.0311	0.0326	0.0079	0.0023	-0.0022	-0.0002	-0.0371	0.0196	0.0063
2	Chittagong	SE & EH	0.0470	0.0838	0.0747	0.0537	0.0233	0.0160	0.0069	0.0161	0.0168	0.0494	0.0644	0.0745	0.0439	0.0405	0.0210	0.0821
3	Cox's Bazar	CR	0.0298	0.0650	0.0738	0.0765	0.0447	0.0756	0.0582	0.0673	0.0518	0.0463	0.0582	0.0648	0.0593	0.0616	0.0489	0.0582
4	Dinajpur	NW	-0.0693	-0.0132	-0.0279	-0.0808	0.0250	0.0047	0.0365	0.0402	0.0483	0.0120	0.0246	0.0160	0.0014	-0.0471	0.0324	0.0242
5	Faridpur	SW	-0.0209	0.0249	0.0015	0.0008	0.0506	0.0251	0.0242	0.0350	0.0287	0.0070	0.0274	0.0383	0.0202	0.0023	0.0212	0.0417
6	Feni	SE & EH	-0.0396	0.0059	0.0015	0.0197	0.0244	0.0081	0.0124	0.0121	0.0112	-0.0035	-0.0069	0.0030	0.0040	0.0093	0.0088	-0.0037
7	Hatiya	CR	0.0096	0.0388	0.0147	-0.0025	0.0159	0.0100	0.0089	0.0080	0.0144	0.0203	0.0257	0.0390	0.0169	-0.0015	0.0154	0.0284
8	Ishurdi	NW	-0.0385	0.0283	-0.0027	-0.0422	0.0389	0.0184	0.0208	0.0392	0.0214	0.0141	0.0195	0.0130	0.0108	-0.0376	0.0256	0.0314
9	Khepupara	CR	0.0036	0.0340	0.0320	0.0311	0.0377	0.0288	0.0192	0.0226	0.0183	0.0180	0.0204	0.0351	0.0251	0.0348	0.0294	0.0374
10	Kutubdia	SE & EH	0.0244	0.0359	0.0373	0.0470	0.0159	0.0415	0.0304	0.0221	0.0237	0.0407	0.0477	0.0670	0.0362	0.0281	0.0333	0.0503
11	Maijdicourt	SE & EH	-0.0181	0.0342	0.0331	0.0848	0.0733	0.0652	0.0677	0.0756	0.0606	0.0289	0.0132	0.0071	0.0438	0.0756	0.0616	0.0232
12	Madaripur	SW	-0.0399	0.0122	-0.0117	-0.0166	0.0253	0.0049	0.0036	0.0169	-0.0057	-0.0162	-0.0072	0.0005	-0.0028	-0.0107	-0.0008	0.0034
13	Mongla	CR	-0.0117	-0.0255	-0.0423	-0.0052	0.0617	0.0102	-0.0053	0.0525	0.0466	0.0116	0.0386	-0.0165	0.0095	0.0169	0.0193	0.0672
14	Mymensingh	NC	-0.0618	-0.0113	-0.0419	-0.0454	0.0456	-0.0099	0.0044	0.0124	0.0265	-0.0018	-0.0049	0.0092	-0.0066	-0.0151	0.0111	-0.0077
15	Patuakhali	CR	0.0062	0.0513	0.0447	0.0635	0.0619	0.0375	0.0361	0.0504	0.0329	0.0170	0.0168	0.0294	0.0373	0.0623	0.0360	0.0412
16	Rajshahi	NW	-0.0325	0.0062	-0.0469	-0.0352	0.0390	0.0111	0.0104	0.0414	0.0167	0.0099	0.0065	0.0013	0.0023	-0.0145	0.0039	0.0208
17	Rangamati	SE & EH	0.0344	0.0759	0.0592	0.0767	0.0440	0.0484	0.0470	0.0533	0.0515	0.0447	0.0531	0.0707	0.0549	0.0601	0.0531	0.0830
18	Rangpur	NW	-0.0390	0.0035	-0.0296	-0.0579	0.0547	-0.0111	0.0222	0.0307	0.0434	0.0045	0.0183	0.0312	0.0059	-0.0133	0.0279	0.0193
19	Shitakunda	NE	0.0515	0.0734	0.0843	0.0814	0.0564	0.0479	0.0520	0.0593	0.0580	0.0686	0.0666	0.0747	0.0645	0.0653	0.0573	0.0665
20	Srimongol	NE	-0.0265	0.0239	-0.0081	-0.0213	0.0060	-0.0145	0.0007	0.0099	0.0246	0.0000	0.0453	0.0200	0.0050	-0.0083	0.0153	0.0289
21	Sylhet	NE	0.0136	0.0575	0.0473	0.0378	0.0620	0.0032	0.0521	0.0412	0.0671	0.0393	0.0163	0.0543	0.0410	0.0352	0.0490	0.0196
22	Tangail	NC	-0.0251	0.0210	0.0176	-0.0427	0.0633	0.0339	0.0391	0.0626	0.0563	0.0234	0.0271	0.0198	0.0247	-0.0208	0.0425	0.0430
23	Teknaf	CR	0.0171	0.0302	0.0323	0.0204	0.0038	0.0476	0.0195	0.0194	0.0133	0.0233	0.0286	0.0264	0.0235	0.0082	0.0250	0.0241
24	Comilla	SE & EH	-0.0409	0.0189	0.0000	0.0428	0.0534	0.0288	0.0360	0.0376	0.0374	0.0100	-0.0089	0.0097	0.0187	0.0381	0.0439	-0.0056
25	Dhaka	NC	-0.0540	0.0103	-0.0075	0.0078	0.0488	0.0072	0.0229	0.0235	0.0169	-0.0048	-0.0080	-0.0036	0.0050	0.0040	0.0074	0.0025
26	Chandpur	SE & EH	-0.0303	0.0286	0.0113	0.0455	0.0397	0.0208	0.0198	0.0258	0.0197	0.0000	0.0218	0.0238	0.0189	0.0397	0.0200	0.0261
27	Jessore	SW	-0.0083	0.0398	0.0228	0.0088	0.0718	0.0557	0.0392	0.0512	0.0303	0.0172	0.0357	0.0407	0.0337	0.0281	0.0542	0.0459
28	Khulna	SW	-0.0138	0.0435	0.0008	0.0110	0.0556	0.0280	0.0294	0.0392	0.0285	0.0196	0.0300	0.0404	0.0260	0.0233	0.0253	0.0515
29	Satkhira	SW	-0.0514	0.0068	-0.0185	-0.0177	0.0178	0.0132	0.0080	0.0141	0.0087	-0.0211	-0.0225	-0.0241	-0.0072	0.0037	0.0132	-0.0017
30	Barisal	SW	-0.0080	0.0381	0.0140	0.0177	0.0398	0.0276	0.0213	0.0307	0.0141	0.0105	0.0182	0.0345	0.0216	0.0230	0.0219	0.0352
31	Bhola	CR	-0.0269	0.0205	-0.0025	0.0102	0.0192	0.0126	0.0127	0.0171	-0.0029	-0.0087	-0.0065	0.0061	0.0042	0.0072	0.0053	0.0085

Table A4. Trend Analysis of minimum Temperature

Slope of Trend lines for historic data

	Station	Region	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	yearly average monthly of monthly avg. min	Min monthly avg. min temp of Total Pre-monsoon (Mar-May)	Min monthly avg. min temp of Total monsoon (Jun-Oct)	Min monthly avg. min temp of Total Post-monsoon (Nov-Feb)
1	Bogra	NW	-0.0151	0.0637	0.0371	0.0215	0.0430	-0.0001	0.0185	0.0185	0.0220	0.0225	0.0503	0.0408	0.0269	0.0371	0.0225	-0.0182
2	Chittagong	SE & EH	0.0106	0.0524	0.0402	0.0455	0.0322	0.0349	0.0255	0.0295	0.0207	0.0285	0.0148	0.0417	0.0314	0.0402	0.0285	0.0106
3	Cox's Bazar	CR	0.0272	0.0341	0.0458	0.0233	0.0174	0.0248	0.0104	0.0177	0.0078	0.0302	0.0289	0.0489	0.0264	0.0458	0.0268	0.0290
4	Dinajpur	NW	0.0052	0.0444	0.0465	0.0226	0.0263	0.0048	0.0245	0.0269	0.0276	0.0300	0.0500	0.0595	0.0307	0.0465	0.0300	0.0077
5	Faridpur	SW	-0.0181	0.0509	0.0227	0.0423	0.0554	0.0025	0.0091	0.0054	-0.0018	0.0086	0.0183	0.0346	0.0192	0.0227	0.0086	-0.0154
6	Feni	SE & EH	-0.0011	0.0130	-0.0117	-0.0076	0.0201	0.0081	0.0213	0.0155	0.0089	0.0269	0.0261	0.0439	0.0136	-0.0122	0.0269	0.0070
7	Hatiya	CR	-0.0671	-0.0300	-0.0387	-0.0168	0.0055	-0.0051	0.0106	0.0068	-0.0032	-0.0063	-0.0467	-0.0317	-0.0186	-0.0387	-0.0085	-0.0650
8	Ishurdi	NW	-0.0141	0.0756	0.0543	0.0299	0.0440	0.0040	0.0172	0.0130	0.0082	0.0234	0.0437	0.0433	0.0285	0.0543	0.0234	-0.0158
9	Khepupara	CR	-0.0375	0.0084	-0.0017	0.0060	0.0205	0.0306	0.0270	0.0241	0.0079	0.0023	0.0010	-0.0070	0.0068	-0.0024	0.0048	-0.0327
10	Kutubdia	SE & EH	0.0201	0.0117	0.0013	0.0053	0.0179	0.0227	0.0287	0.0053	0.0191	0.0429	0.0214	0.0787	0.0229	0.0013	0.0387	0.0281
11	Maijdicourt	SE & EH	0.0502	0.0730	0.0498	0.0251	0.0368	0.0118	0.0252	0.0324	0.0170	0.0274	0.0680	0.0877	0.0420	0.0495	0.0261	0.0537
12	Madaripur	SW	0.0276	0.0819	0.0377	0.0346	0.0606	0.0249	0.0404	0.0404	0.0281	0.0289	0.0357	0.0489	0.0408	0.0377	0.0289	0.0299
13	Mongla	CR	-0.0049	-0.0202	0.0040	0.0202	0.0068	0.0046	-0.0012	0.0078	0.0091	0.0076	-0.0017	0.0517	0.0070	0.0047	0.0076	-0.0195
14	Mymensingh	NC	-0.0049	0.0507	0.0280	0.0061	0.0289	-0.0029	0.0147	0.0136	0.0252	0.0072	0.0013	0.0275	0.0163	0.0280	0.0072	-0.0048
15	Patuakhali	CR	-0.0441	-0.0172	-0.0126	-0.0121	0.0046	-0.0023	0.0085	0.0057	-0.0007	-0.0009	-0.0109	-0.0067	-0.0074	-0.0132	-0.0004	-0.0496
16	Rajshahi	NW	-0.0147	0.0681	0.0585	0.0359	0.0354	0.0034	0.0145	0.0259	0.0013	0.0209	0.0251	0.0482	0.0269	0.0585	0.0209	-0.0074
17	Rangamati	SE & EH	-0.0921	-0.0570	-0.0480	-0.0132	0.0101	0.0039	0.0005	-0.0033	-0.0205	-0.0273	-0.0652	-0.0690	-0.0318	-0.0480	-0.0226	-0.0825
18	Rangpur	NW	0.0191	0.0814	0.0587	0.0205	0.0398	-0.0140	0.0025	0.0015	0.0131	0.0211	0.0651	0.0568	0.0305	0.0587	0.0211	0.0169
19	Shitakunda	NE	-0.0515	-0.0234	-0.0438	-0.0306	0.0051	-0.0043	0.0099	0.0033	-0.0088	0.0123	-0.0143	-0.0007	-0.0122	-0.0438	0.0123	-0.1250
20	Srimongol	NE	-0.0083	0.0155	-0.0091	-0.0008	0.0116	-0.0106	0.0071	-0.0076	0.0074	0.0051	0.0189	0.0085	0.0032	-0.0082	0.0051	0.0014
21	Sylhet	NE	0.0338	0.0732	0.0376	0.0420	0.0497	0.0080	0.0359	0.0295	0.0474	0.0516	0.0627	0.0802	0.0460	0.0376	0.0516	0.0315
22	Tangail	NC	-0.0091	0.0302	0.0350	0.0228	0.0268	0.0045	0.0000	0.0010	-0.0084	-0.0200	-0.0343	0.0018	-0.0091	0.0350	-0.0200	-0.0104
23	Teknaf	CR	-0.0294	-0.0159	0.0043	-0.0030	0.0093	0.0388	0.0289	0.0310	0.0298	0.0474	0.0125	0.0001	0.0128	0.0043	0.0431	-0.0304
24	Comilla	SE & EH	-0.0027	0.0201	0.0012	-0.0029	0.0190	-0.0022	0.0082	0.0100	0.0021	0.0217	0.0276	0.0422	0.0120	0.0008	0.0217	0.0025
25	Dhaka	NC	0.0204	0.0622	0.0240	0.0159	0.0384	-0.0127	-0.0111	-0.0058	-0.0126	0.0052	0.0341	0.0578	0.0180	0.0240	0.0057	0.0161
26	Chandpur	SE & EH	0.0321	0.0685	0.0392	0.0386	0.0488	0.0125	0.0196	0.0194	0.0200	0.0467	0.0536	0.0826	0.0401	0.0386	0.0467	0.0355
27	Jessore	SW	-0.0516	0.0118	-0.0079	0.0052	0.0184	0.0071	0.0137	0.0100	0.0047	0.0121	0.0193	0.0050	0.0040	-0.0079	0.0121	-0.0470
28	Khulna	SW	0.0112	0.0601	0.0332	0.0304	0.0338	0.0078	0.0132	0.0089	0.0052	0.0219	0.0587	0.0761	0.0300	0.0332	0.0219	0.0339
29	Satkhira	SW	-0.0366	0.0155	0.0005	0.0000	0.0182	0.0053	0.0098	0.0104	0.0033	0.0221	0.0572	0.0230	0.0107	-0.0001	0.0221	-0.0196
30	Barisal	SW	0.0005	0.0314	0.0121	0.0074	0.0288	0.0097	0.0100	0.0148	0.0069	0.0247	0.0541	0.0461	0.0205	0.0115	0.0247	0.0002
31	Bhola	CR	-0.0127	0.0171	-0.0080	0.0039	0.0228	-0.0013	-0.0038	0.0014	0.0033	0.0251	0.0358	0.0320	0.0096	-0.0083	0.0251	-0.0131

Table A2. Summary of Trend Analysis of Evaporation

Slope of Trend lines of historic data

	Station	Region	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Spt.	Oct.	Nov.	Dec.	Annual	Total Pre-monsoon (Mar-May)	Total monsoon (Jun-oct)	Total Post-monsoon (Nov-Feb)
1	Barisal	SW	1.7422	-5.1316	-7.5754	-10.265	-5.4026	6.1885	2.4477	8.8195	-2.8903	-4.5645	-7.6171	-12.843	-37.091	-23.242	10.001	-9.8696
2	Bogra	NW	-1.4438	-7.0284	-26.275	-31.721	-15.126	-5.0496	-4.6029	-15.074	-9.2046	-15.142	-16.676	-6.2945	-153.64	-73.123	-49.074	-17.43
3	Comilla	SE & EH	14.207	7.7732	17.17	-2.0281	-7.7053	-0.1772	-39.475	22.898	24.221	17.216	-28.393	-22.358	13.061	7.4368	24.682	25.16
4	Dinajpur	NW	3.318	-8.1272	-9.9717	-30.37	6.2461	-8.3082	13.199	10.931	9.3552	-6.8764	-17.259	-9.3678	-47.231	-34.096	18.3	-21.911
5	Faridpur	SW	-11.384	-15.352	-20.752	-39.912	-10.868	-18.445	-6.9959	-24.921	-21.548	-29.579	-22.177	-18.163	-240.1	-71.532	-101.49	-49.475
6	Joydevpur	NC	11.933	21.109	27.836	21.996	37.82	-5.6152	-16.155	-15.819	-13.223	-2.1981	0.0807	-18.088	49.675	87.651	-53.011	-3.7745
7	Khulna	SW	-14.48	-15.517	-33.576	-19.217	-7.0066	-7.7083	-21.12	-8.5591	-18.846	-18.011	-35.854	-33.84	-233.73	-59.799	-74.245	-26.94
8	Mymensingh	NC	-4.031	-10.289	-30.146	-27.215	14.744	10.488	0.4138	8.2405	5.4283	-1.3612	2.8308	2.0372	-28.859	-42.616	23.209	-5.2415
9	Rajshahi	NW	20.764	35.392	35.915	43.507	47.132	40.172	-11.149	13.521	6.8496	-10.626	-24.5	-20.564	176.41	126.55	38.768	17.553
10	Rangamati	SE & EH	36.732	33.834	28.956	33.866	25.687	24.987	30.438	33.57	36.253	40.1	22.681	27.961	375.06	88.509	165.35	147.14
11	Rangpur	NW	-9.2372	-26.093	-31.483	-36.668	4.7946	5.4106	-7.4297	2.6982	14.128	-18.306	-17.553	-10.454	-130.19	-63.356	-3.499	-16.661
12	Srimongol	NE	19.058	19.452	-13.933	-13.502	-13.514	-7.5272	-8.509	-11.619	-0.0081	-9.6861	-32.82	-32.519	-105.13	-77.009	-37.35	-72.546

Table A7. Summary of Trend Analysis of Bright SunShine Hours

Slope of Trend lines of historic data

	Station	Region	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Spt.	Oct.	Nov.	Dec.	Yearly Average	Average Pre-monsoon (Mar-May)	Average monsoon (Jun-oct)	Average Post-monsoon (Nov-Feb)
1	Barisal	SW	-0.0434	-0.0125	-0.0319	-0.0373	-0.0463	-0.0559	-0.0176	-0.0088	-0.0562	-0.0437	-0.0252	-0.0403	-0.0349	-0.0385	-0.0364	-0.0210
2	Bhola	CR	-0.0196	0.0169	-0.0188	0.0240	0.0214	-0.0117	0.0047	0.0219	-0.0227	-0.0389	0.0265	-0.0103	-0.0005	0.0089	-0.0093	0.0154
3	Bogra	NW	-0.1178	-0.0716	-0.0423	-0.0464	-0.0146	-0.0435	0.0122	-0.0104	-0.0295	-0.0605	-0.0465	-0.0732	-0.0453	-0.0344	-0.0264	-0.0686
4	Chandpur	SE & EH	-0.0129	0.0071	0.0143	0.0386	0.0237	0.0067	0.0143	0.0204	-0.0075	-0.0388	-0.0127	-0.0303	0.0019	0.0255	-0.0010	-0.0011
5	Chittagong	SE & EH	-0.0492	-0.0435	-0.0308	0.0017	-0.0231	0.0260	-0.0077	0.0080	-0.0361	-0.0300	-0.0122	-0.0345	-0.0193	-0.0174	-0.0080	-0.0608
6	Comilla	SE & EH	-0.0667	-0.0130	-0.0201	0.0289	-0.0038	-0.0110	0.0294	0.0210	-0.0017	-0.0439	0.0021	-0.0027	-0.0068	0.0017	-0.0012	-0.0237
7	Cox's Bazar	CR	-0.0345	0.0173	-0.0067	0.0683	-0.0278	0.0859	0.0203	0.0144	-0.0159	-0.0186	0.0100	-0.0043	0.0090	0.0112	0.0172	-0.0033
8	Dhaka	NC	-0.0963	-0.0602	-0.0240	-0.0060	-0.0252	-0.0733	-0.0189	-0.0387	-0.0570	-0.0918	-0.0651	-0.0831	-0.0533	-0.0184	-0.0559	-0.0552
9	Dinajpur	NW	-0.0247	-0.0238	-0.0179	-0.0743	0.0436	-0.0456	0.0113	-0.0171	0.0196	-0.0228	-0.0123	-0.0477	-0.0176	-0.0162	-0.0109	-0.0231
10	Faridpur	SW	-0.0783	-0.0418	-0.0035	0.0259	0.0148	-0.0221	0.0089	0.0242	-0.0090	-0.0701	0.0016	-0.0620	-0.0176	0.0124	-0.0136	-0.0686
11	Feni	SE & EH	-0.0619	-0.0087	0.0076	0.0330	-0.0018	0.0064	0.0024	0.0264	-0.0230	-0.0534	0.0097	-0.0427	-0.0088	0.0129	-0.0082	-0.0251
12	Hatiya	CR	-0.0553	0.0010	-0.0316	0.0220	0.0067	-0.0197	-0.0102	0.0309	0.0081	-0.0117	0.0192	-0.0631	-0.0086	-0.0010	-0.0005	-0.0476
13	Ishurdi	NW	-0.0578	-0.0288	0.0111	-0.0120	0.0103	-0.0108	0.0135	0.0112	0.0078	-0.0444	0.0109	-0.0555	-0.0120	0.0031	-0.0045	-0.0471
14	Jessore	SW	-0.0313	-0.0116	0.0048	0.0037	0.0061	-0.0140	0.0091	-0.0002	-0.0141	-0.0480	-0.0247	-0.0412	-0.0135	0.0049	-0.0134	-0.0250
15	Khepupara	CR	0.0122	0.0469	0.0288	0.0391	0.0532	-0.0205	0.0264	-0.0147	0.0065	0.0560	0.0432	-0.0178	0.0216	0.0404	0.0107	-0.0499
16	Khulna	SW	-0.0611	-0.0141	-0.0277	-0.0033	0.0256	-0.0108	-0.0187	0.0114	0.0076	-0.0621	-0.0034	-0.0635	-0.0183	-0.0018	-0.0145	-0.0343
17	Kutubdia	SE & EH	-0.0296	0.0005	-0.0291	0.0280	-0.0315	0.0056	0.0102	0.0020	-0.0443	-0.0016	0.0338	-0.0799	-0.0113	-0.0109	-0.0056	-0.0412
18	Madaripur	SW	0.0104	0.0423	0.0373	0.0516	0.0981	0.0108	0.0239	0.0890	0.0205	0.0258	0.0895	0.0464	0.0455	0.0623	0.0340	-0.0162
19	M.Court	SE & EH	-0.0623	-0.0023	0.0041	0.0276	-0.0150	0.0196	0.0333	0.0183	0.0093	-0.0470	0.0217	-0.0795	-0.0060	0.0056	0.0067	-0.0573
20	Mongla	CR	-0.3060	-0.3452	-0.2321	-0.0512	-0.0929	0.1024	-0.1214	-0.1738	-0.0821	0.0560	-0.0560	-0.3095	-0.1343	-0.1254	-0.0438	-1.0161
21	Mymensingh	NC	-0.0797	-0.0232	-0.0267	-0.0049	0.0258	-0.0410	0.0113	0.0067	0.0259	-0.0366	-0.0133	-0.0483	-0.0170	-0.0020	-0.0067	-0.0317
22	Patuakhali	CR	0.0187	0.0740	0.0297	0.0767	0.0672	0.0266	0.0421	0.0543	0.0518	0.0676	0.0957	0.0013	0.0505	0.0579	0.0485	0.0301
23	Rajshahi	NW	-0.0378	0.0032	-0.0048	-0.0283	-0.0091	-0.0198	0.0024	0.0041	0.0028	-0.0407	0.0049	-0.0368	-0.0133	-0.0141	-0.0102	-0.1946
24	Rangamati	SE & EH	0.0436	0.0579	0.0388	0.0412	-0.0028	-0.0002	0.0654	0.0201	0.0305	0.0158	0.0677	0.0078	0.0322	0.0258	0.0263	-0.0281
25	Rangpur	NW	-0.1049	-0.0376	-0.0008	-0.0376	-0.0012	-0.0733	0.0044	-0.0183	-0.0043	-0.0326	-0.0564	-0.0416	-0.0337	-0.0132	-0.0248	-0.0553
26	Sandwip	CR	-0.0830	-0.0401	-0.0178	0.0350	-0.0110	-0.0507	0.0125	-0.0009	-0.0193	-0.0636	0.0273	-0.0715	-0.0236	0.0021	-0.0244	-0.0834
27	Satkhira	SW	-0.0297	-0.0111	-0.0385	-0.0088	0.0084	0.0424	0.0146	0.0310	-0.0155	-0.1350	-0.0850	-0.0952	-0.0269	-0.0130	-0.0125	-0.0208
28	Shitakunda	NE	-0.0015	0.0291	0.0179	0.0554	0.0330	0.0607	0.0344	0.0379	0.0191	0.0115	0.0505	0.1112	0.0383	0.0354	0.0327	0.0586
29	Srimongol	NE	-0.0911	-0.0101	-0.0111	0.0389	0.0141	-0.0880	0.0015	0.0208	0.0052	-0.0131	-0.0045	-0.0739	-0.0176	0.0140	-0.0147	-0.0844
30	Sylhet	NE	-0.0804	-0.0532	-0.0241	0.0019	-0.0143	-0.0544	-0.0003	-0.0097	0.0032	-0.0539	-0.0353	-0.0246	-0.0288	-0.0122	-0.0230	-0.0410
31	Tangail	NC	-0.0651	0.0047	0.0272	0.0229	0.0456	-0.0365	-0.0011	0.0283	0.0227	-0.0357	0.0165	-0.0801	-0.0042	0.0319	-0.0045	-0.0802
32	Teknaf	CR	-0.0248	-0.0062	-0.0345	0.0037	-0.0747	0.0181	0.0019	-0.0085	-0.0420	-0.0267	0.0239	-0.0304	-0.0167	-0.0352	-0.0114	-0.0153

Table A5. Summary of Trend Analysis of Solar Radiation

Slope of Trend lines of historic data

	Station	Region	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Spt.	Oct.	Nov.	Dec.	Yearly Average	Average Pre-monsoon (Mar-May)	Average monsoon (Jun-oct)	Average Post-monsoon (Nov-Feb)
1	Barisal	SW	19.456	24.632	28.061	36.203	33.566	25.320	-5.064	-11.926	-5.195	-13.066	-3.654	-2.652	10.617	32.610	-1.986	29.104
2	Bogra	NW	-4.405	-6.261	-6.547	-10.920	1.071	-8.087	-4.978	-28.208	-2.686	3.138	1.754	-18.894	-6.430	-5.465	-16.290	-7.756
3	Comilla	SE & EH	-6.422	-0.329	-3.427	-11.620	-3.269	-2.621	-11.627	-12.865	-5.661	-3.541	-6.602	-10.478	-6.538	-6.105	-7.263	-6.793
4	Dhaka	NC	3.865	-6.419	4.008	7.007	7.516	17.821	-4.342	-13.659	-22.839	-9.766	5.307	1.064	0.171	6.177	-12.322	-1.277
5	Faridpur	SW	4.231	-6.550	1.605	-10.566	-6.940	-13.386	-6.489	-3.272	-28.089	-36.926	-43.680	-40.694	-15.896	-5.300	-17.632	-42.095
6	Joydevpur	NC	0.894	-0.824	-3.016	-7.606	-2.454	-0.608	-4.849	-4.380	-20.158	-19.470	-16.451	-15.193	-7.843	-4.359	-9.893	0.085
7	Khulna	SW	-1.587	-25.274	-3.676	-9.007	-18.688	-24.847	-30.759	-19.114	-69.659	-71.836	-82.272	-71.655	-35.698	-10.457	-43.243	-84.343
8	Mymensingh	NC	-7.501	-2.571	2.448	-6.044	0.519	-8.898	-5.640	-19.847	-24.964	-23.920	-16.653	-15.738	-10.879	-1.026	-12.428	-1.443
9	Rangpur	NW	8.062	-17.708	-6.610	1.193	9.737	-0.130	-12.300	-18.884	-17.772	-10.781	-28.792	-23.311	-9.775	1.440	-11.973	-16.443
10	Srimongol	NE	-2.669	3.540	-5.812	-5.847	4.959	0.526	0.648	-3.958	-23.573	-14.717	-16.824	-18.036	-6.814	-2.233	-8.215	-6.166

Table A6. Summary of Trend Analysis of Wind Speed

Slope of Trend lines of historic data

	Station	Region	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Spt.	Oct.	Nov.	Dec.	Yearly Average	Average Pre-monsoon (Mar-May)	Average monsoon (Jun-oct)	Average Post-monsoon (Nov-Feb)
1	Barisal	SW	-0.0006	0.0041	-0.0088	-0.0054	0.0009	0.0034	0.0090	-0.0047	-0.0011	-0.0024	-0.0039	-0.0082	-0.0015	-0.0044	0.0008	-0.0019
2	Bhola	CR	0.0011	-0.0010	-0.0061	-0.0202	-0.0021	-0.0047	-0.0012	-0.0026	-0.0007	0.0031	-0.0030	-0.0030	-0.0034	-0.0095	-0.0012	-0.0013
3	Bogra	NW	-0.1178	-0.0716	-0.0423	-0.0464	-0.0146	-0.0435	0.0122	-0.0104	-0.0295	-0.0605	-0.0465	-0.0732	-0.0453	-0.0344	-0.0264	-0.0764
4	Chandpur	SE & EH	0.0011	-0.0011	-0.0174	-0.0318	-0.0173	-0.0167	-0.0219	-0.0192	-0.0073	-0.0017	-0.0024	-0.0056	-0.0118	-0.0222	-0.0134	-0.0006
5	Chittagong	SE & EH	-0.0348	-0.0455	-0.0787	-0.1635	-0.1152	-0.1561	-0.1591	-0.1411	-0.0864	-0.0364	-0.0210	-0.0250	-0.0886	-0.1192	-0.1158	-0.0338
6	Comilla	SE & EH	0.0035	0.0060	-0.0074	-0.0351	-0.0244	-0.0181	-0.0306	-0.0288	-0.0175	0.0019	-0.0001	-0.0056	-0.0130	-0.0223	-0.0186	0.0016
7	Cox's Bazar	CR	-0.0278	-0.0216	-0.0202	-0.0476	-0.0274	-0.0226	-0.0278	-0.0156	-0.0241	-0.0294	-0.0299	-0.0334	-0.0273	-0.0317	-0.0239	-0.0287
8	Dhaka	NC	0.0142	0.0095	-0.0079	-0.0391	-0.0179	-0.0229	-0.0224	-0.0256	-0.0074	0.0036	0.0011	0.0064	-0.0090	-0.0216	-0.0149	0.0082
9	Dinajpur	NW	-0.0205	-0.0294	-0.0428	-0.0448	-0.0244	-0.0230	-0.0270	-0.0240	-0.0088	-0.0075	-0.0115	-0.0096	-0.0228	-0.0373	-0.0181	-0.0199
10	Faridpur	SW	0.0059	0.0053	-0.0012	-0.0156	-0.0209	-0.0114	-0.0243	-0.0316	-0.0245	-0.0094	-0.0042	-0.0026	-0.0112	-0.0126	-0.0202	0.0008
11	Feni	SE & EH	-0.0080	-0.0129	-0.0155	-0.0305	-0.0153	-0.0248	-0.0234	-0.0258	-0.0154	-0.0081	-0.0126	-0.0137	-0.0172	-0.0204	-0.0195	-0.0132
12	Hatiya	CR	-0.0289	-0.0274	-0.0476	-0.0809	-0.0426	-0.0404	-0.0160	-0.0342	-0.0216	-0.0266	-0.0398	-0.0353	-0.0368	-0.0571	-0.0278	-0.0354
13	Ishurdi	NW	0.0087	0.0025	-0.0114	-0.0605	-0.0689	-0.0536	-0.0464	-0.0423	-0.0227	0.0026	-0.0033	0.0011	-0.0245	-0.0469	-0.0325	0.0033
14	Jessore	SW	-0.0197	-0.0280	-0.0534	-0.0946	-0.0893	-0.0582	-0.0573	-0.0649	-0.0463	-0.0252	-0.0290	-0.0269	-0.0494	-0.0791	-0.0504	-0.0240
15	Khepupara	CR	-0.0189	-0.0119	-0.0126	-0.0362	-0.0398	-0.0235	-0.0244	-0.0147	-0.0175	-0.0148	-0.0188	-0.0158	-0.0207	-0.0295	-0.0190	-0.0133
16	Khulna	SW	-0.0316	-0.0373	-0.0626	-0.0742	-0.0732	-0.0729	-0.0617	-0.0855	-0.0520	-0.0266	-0.0233	-0.0329	-0.0528	-0.0700	-0.0597	-0.0346
17	Kutubdia	SE & EH	-0.0257	-0.0144	-0.0316	-0.0478	-0.0355	-0.0436	-0.0495	-0.0372	-0.0282	-0.0224	-0.0207	-0.0158	-0.0310	-0.0383	-0.0362	-0.0199
18	Madaripur	SW	-0.0016	-0.0054	-0.0082	-0.0225	-0.0209	-0.0165	-0.0127	-0.0120	-0.0070	-0.0072	-0.0077	-0.0090	-0.0109	-0.0172	-0.0111	-0.0063
19	M.Court	SE & EH	0.0163	0.0134	0.0012	-0.0292	-0.0065	-0.0088	-0.0027	-0.0110	-0.0077	0.0068	0.0026	0.0053	-0.0017	-0.0115	-0.0047	0.0115
20	Mongla	CR	-0.0172	-0.0287	-0.0372	-0.0491	-0.0703	-0.0503	-0.0466	-0.0383	-0.0279	-0.0389	-0.0394	-0.0380	-0.0402	-0.0522	-0.0404	-0.0300
21	Mymensingh	NC	-0.0059	-0.0153	-0.0218	-0.0481	-0.0361	-0.0425	-0.0421	-0.0421	-0.0302	-0.0138	-0.0125	-0.0109	-0.0268	-0.0353	-0.0342	-0.0104
22	Patuakhali	CR	-0.0358	-0.0408	-0.0565	-0.0767	-0.0697	-0.0710	-0.0683	-0.0691	-0.0546	-0.0300	-0.0371	-0.0339	-0.0536	-0.0676	-0.0586	-0.0392
23	Rajshahi	NW	-0.0240	-0.0337	-0.0431	-0.0652	-0.0789	-0.0737	-0.0669	-0.0573	-0.0346	-0.0248	-0.0328	-0.0279	-0.0469	-0.0624	-0.0515	-0.0308
24	Rangamati	SE & EH	-0.0108	-0.0150	-0.0198	-0.0449	-0.0245	-0.0370	-0.0358	-0.0472	-0.0348	-0.0260	-0.0209	-0.0149	-0.0276	-0.0297	-0.0362	-0.0153
25	Rangpur	NW	0.0072	-0.0013	-0.0103	-0.0116	-0.0090	-0.0099	-0.0113	-0.0195	-0.0060	0.0062	-0.0010	0.0046	-0.0052	-0.0103	-0.0081	0.0023
26	Sandwip	CR	0.0037	-0.0047	-0.0264	-0.0771	-0.0272	-0.0335	-0.0422	-0.0407	-0.0153	0.0025	-0.0012	-0.0049	-0.0223	-0.0435	-0.0258	-0.0007
27	Satkhira	SW	-0.0642	-0.0712	-0.0891	-0.1287	-0.1234	-0.1203	-0.1118	-0.1297	-0.1009	-0.0775	-0.0841	-0.0882	-0.0991	-0.1137	-0.1080	-0.0852
28	Shitakunda	NE	-0.0214	-0.0226	-0.0331	-0.0540	-0.0194	-0.0200	-0.0239	-0.0213	-0.0225	-0.0218	-0.0241	-0.0178	-0.0252	-0.0355	-0.0219	-0.0212
29	Srimongol	NE	0.0078	0.0105	0.0066	0.0033	0.0044	0.0067	0.0046	0.0087	0.0070	0.0039	0.0028	0.0032	0.0058	0.0048	0.0062	0.0040
30	Sylhet	NE	0.0129	0.0241	0.0197	0.0095	0.0223	0.0230	0.0243	0.0194	0.0211	0.0149	0.0064	0.0102	0.0173	0.0171	0.0205	0.0152
31	Tangail	NC	-0.0276	-0.0377	-0.0565	-0.0743	-0.0822	-0.0666	-0.0731	-0.0695	-0.0508	-0.0337	-0.0392	-0.0312	-0.0535	-0.0710	-0.0587	-0.0340
32	Teknaf	CR	-0.0258	-0.0228	-0.0266	-0.0263	-0.0189	-0.0195	-0.0350	-0.0301	-0.0068	-0.0198	-0.0176	-0.0179	-0.0222	-0.0239	-0.0222	-0.0179

Table A8. Summary of Trend Analysis of Relative Humidity

Slope of Trend Lines of historic data

	Station	Region	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Spt.	Oct.	Nov.	Dec.	Yearly Average	Average Pre-monsoon (Mar-May)	Average monsoon (Jun-oct)	Average Post-monsoon (Nov-Feb)
1	Barisal	SW	0.12286	0.05571	0.03764	0.03438	0.00571	0.06507	0.02537	-0.00143	0.06389	0.08512	0.17118	0.16084	0.06886	0.02591	0.04761	-1.84068
2	Bhola	CR	0.16616	0.07798	0.01966	-0.05030	0.00389	0.03911	0.05695	0.04562	0.08576	0.14547	0.18463	0.18601	0.08008	-0.00892	0.07458	-1.83539
3	Bogra	NW	0.27064	0.30360	0.36532	0.39695	-0.11281	-0.03079	-0.10123	-0.06123	-0.07167	0.09773	0.12951	0.13621	0.11018	0.21649	-0.03344	-1.74011
4	Chandpur	SE & EH	0.12261	0.04153	0.06158	0.01345	0.00034	0.05823	0.03049	-0.00921	0.01448	0.06557	0.08335	0.12438	0.05057	0.02512	0.03191	-1.77168
5	Chittagong	SE & EH	0.17458	0.08576	-0.02424	-0.02749	0.09611	0.09621	0.08374	0.05015	0.10177	0.13690	0.16941	0.12823	0.08926	0.01479	0.09375	-1.69016
6	Comilla	SE & EH	0.22921	0.14778	0.09039	0.02069	0.02966	0.07010	0.02069	0.00429	-0.02094	0.05305	0.13640	0.19202	0.08111	0.04691	0.02544	-1.81267
7	Cox's Bazar	CR	0.13187	0.05310	-0.01463	-0.06197	0.05438	-0.07906	0.00547	0.00975	0.06695	0.10729	0.08222	0.07709	0.03604	-0.00741	0.02208	-1.70543
8	Dhaka	NC	-0.00759	-0.00901	-0.13961	-0.14502	-0.22714	-0.11241	-0.15576	-0.15049	-0.10458	0.02591	0.05158	0.00453	-0.08080	-0.17059	-0.09947	-1.63552
9	Dinajpur	NW	0.54330	0.74148	0.77537	0.94704	0.32192	0.18897	0.03286	0.11616	0.06734	0.29163	0.38300	0.39616	0.40044	0.68144	0.13939	-1.64933
10	Faridpur	SW	0.18232	0.20606	0.12123	0.07271	-0.15182	-0.01537	-0.02025	-0.01606	0.02562	0.12281	0.13374	0.12970	0.06589	0.01404	0.01935	-1.76514
11	Feni	SE & EH	0.30527	0.18039	-0.31025	0.02350	0.00571	0.01847	-0.02394	-0.04714	-0.04764	0.06685	0.23172	0.27424	0.05643	-0.09368	-0.00668	-1.67614
12	Hatiya	CR	0.30527	0.18039	-0.31025	0.02350	0.00571	0.01847	-0.02394	-0.04714	-0.04764	0.06685	0.23172	0.27424	0.05643	-0.09368	-0.00668	-1.67614
13	Ishurdi	NW	0.31778	0.41453	0.39635	0.45276	0.10616	0.13828	0.09724	0.10695	0.15113	0.19025	0.27207	0.31404	0.24646	0.31842	0.13677	-1.64056
14	Jessore	SW	0.38113	0.40217	0.38611	0.35227	0.01990	0.00138	-0.00350	-0.02266	0.07054	0.28187	0.35355	0.40522	0.21900	0.25276	0.06553	-1.66299
15	Khepupara	CR	0.30369	0.22202	0.10749	0.06468	0.09709	0.06616	0.05458	0.03813	0.10488	0.17591	0.27246	0.23069	0.14482	0.08975	0.08793	-1.69014
16	Khulna	SW	0.09773	0.08148	0.01709	-0.15690	-0.15039	-0.07113	-0.05025	-0.04438	-0.01887	0.07227	0.08562	0.09916	-0.00321	-0.09673	-0.02247	-1.79702
17	Kutubdia	SE & EH	-0.03079	-0.04138	-0.10034	-0.09345	-0.03241	-0.05502	-0.05320	-0.03182	-0.05576	-0.01788	-0.10059	-0.09379	-0.05887	-0.07540	-0.04274	-1.90923
18	Madaripur	SW	0.59601	0.57335	0.51867	0.41300	0.23310	0.18433	0.17975	0.12005	0.22409	0.42177	0.55951	0.65867	0.39019	0.38826	0.22600	-1.49719
19	M.Court	SE & EH	0.29956	0.29690	0.18931	0.08985	0.07276	0.07271	0.04690	0.04438	0.07241	0.20320	0.27842	0.27596	0.16186	0.11731	0.08792	-1.75314
20	Mongla	CR	0.28105	0.02977	0.08842	0.21135	-0.06970	0.05421	0.08992	0.04173	-0.11301	-0.02699	0.07805	0.31654	0.08178	0.07669	0.00917	-2.67244
21	Mymensingh	NC	0.58936	0.75089	0.76227	0.57320	0.17143	0.21803	0.14754	0.21759	0.17212	0.46897	0.70872	0.59488	0.44791	0.50230	0.24485	-1.46164
22	Patuakhali	CR	0.42227	0.32099	0.23793	0.11635	0.12916	0.16709	0.15064	0.15296	0.23724	0.32438	0.37714	0.43867	0.25624	0.16115	0.20646	-1.70274
23	Rajshahi	NW	0.19424	0.32453	0.36852	0.41655	0.06177	0.02079	0.00128	0.00365	0.11025	0.23049	0.26680	0.19443	0.18278	0.28228	0.07329	-1.70967
24	Rangamati	SE & EH	0.25360	0.04493	-0.02778	0.06005	0.12660	0.06488	0.04409	0.07039	0.11069	0.18212	0.24458	0.22852	0.11689	0.05296	0.09443	-1.66756
25	Rangpur	NW	0.17030	0.24266	0.33901	0.44547	0.02576	0.05995	-0.02251	0.02507	-0.05207	0.00360	0.04148	-0.00749	0.10594	0.27008	0.00281	-1.89742
26	Sandwip	CR	0.25818	0.22399	-0.00862	-0.07044	-0.02714	-0.02897	-0.06926	-0.03695	0.02734	0.20601	0.24522	0.23005	0.07912	-0.03540	0.01964	-1.81547
27	Satkhira	SW	0.50089	0.50133	0.50217	0.36744	0.17044	0.16113	0.10389	0.06517	0.13286	0.41429	0.59562	0.62384	0.34492	0.34668	0.17547	-1.50773
28	Shitakunda	NE	0.61483	0.46197	0.23527	0.19123	0.21768	0.21975	0.17374	0.21163	0.26478	0.39266	0.52941	0.65074	0.34697	0.21473	0.25251	-1.48979
29	Srimongol	NE	0.16429	0.10498	0.17483	0.17887	0.09296	0.08433	0.04660	0.01951	-0.02571	0.11704	0.09163	0.07611	0.09378	0.14888	0.04835	-1.81613
30	Sylhet	NE	0.18542	0.13921	0.03000	-0.03813	-0.06512	0.07448	-0.03310	-0.01719	-0.12108	0.02916	0.14586	0.04995	0.03162	-0.02442	-0.01355	-1.74991
31	Tangail	NC	0.24929	0.22400	0.20395	0.22998	-0.14534	-0.02914	-0.06341	-0.05579	-0.02101	0.12219	0.10271	0.12722	0.07872	0.09620	-0.00943	-2.62211
32	Teknaf	CR	0.45433	0.30729	0.22847	0.28857	0.36015	0.11108	0.15773	0.15719	0.24202	0.37360	0.45892	0.37872	0.29317	0.29240	0.20833	-1.52405

APPENDIX-B

Probability distribution charts

Table B1. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

January

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	3	4	6	1	5	2
	Comparison	7.01	10.00	17.01	**1.00**	15.25	1.28
1	Barisal	6.45	97.03	11090.64	***1.57***	211.45	15.07
2	Bhola	43.38	64.62	122.56	***5.65***	72.21	11.52
3	Bogra	5132.76	72.21	118.41	***5.60***	93.66	8.11
4	Chandpur	20.43	57.03	36.55	***5.11***	74.50	8.41
5	Chittagong	47.16	71.52	243.77	***4.49***	214.76	12.58
6	Chuadanga	6.60	15.25	8.07	***5.01***	35.38	***1.41***
7	Comilla	16.74	46.00	28.80	***3.96***	58.86	***2.97***
8	Cox's Bazar	32.75	63.93	83.72	***4.49***	47.14	10.34
9	Dhaka	18.19	45.66	32.91	***3.60***	60.10	***4.31***
10	Dinajpur	17.77	33.59	22.22	***2.85***	131.78	6.60
11	Faridpur	42.84	58.07	74.15	***3.59***	58.32	10.62
12	Feni	31.71	50.83	66.09	***3.63***	48.80	7.94
13	Hatiya	51.75	71.86	336.28	***5.73***	67.11	13.22
14	Ishurdi	11.96	46.69	18.08	9.15	98.87	***2.54***
15	Jessore	8.37	33.59	14.03	***3.50***	72.26	***1.64***
16	Khepupara	***5.46***	80.48	344.32	***5.51***	183.44	9.65
17	Khulna	31.57	63.93	49.89	7.23	76.82	11.72
18	Kutubdia	46.66	71.86	141.72	10.73	68.75	13.14
19	M.Court	***4.17***	79.79	1070.85	***5.98***	168.76	11.83
20	Madaripur	27.63	71.52	87.96	***3.91***	80.22	6.69
21	Mongla	13.02	27.00	19.43	***5.14***	293.46	6.67
22	Mymensingh	6.45	88.41	355.78	***2.57***	112.28	13.95
23	Patuakhali	19.43	54.50	34.68	***4.84***	71.71	***3.70***
24	Rajshahi	173.13	59.10	76.64	***1.99***	94.88	***5.79***
25	Rangamati	88.33	75.93	311.33	***4.94***	68.22	17.21
26	Rangpur	10.86	40.48	15.27	***1.96***	69.64	***2.80***
27	Sandwip	***2.56***	69.50	1556.26	***3.82***	168.55	12.17
28	Satkhira	92.86	71.86	52.86	***1.44***	107.58	8.19
29	Shitakunda	100.11	79.45	322.57	***4.01***	80.10	8.71
30	Srimangal	46.96	61.64	159.09	***4.22***	72.18	***5.59***
31	Syadpur	***4.59***	8.86	***3.70***	***2.77***	20.15	***1.15***
32	Sylhet	27.35	71.52	59.65	6.85	65.92	7.08
33	Tangail	16.03	26.64	17.74	***3.98***	26.37	***5.02***
34	Teknaf	28.37	63.93	76.70	***4.08***	26.40	8.92
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	0.0006	0.0085	0.9710	0.0001	0.0185	0.0013
2	Bhola	0.1356	0.2020	0.3831	0.0176	0.2257	0.0360
3	Bogra	0.9451	0.0133	0.0218	0.0010	0.0172	0.0015
4	Chandpur	0.1011	0.2823	0.1809	0.0253	0.3688	0.0416
5	Chittagong	0.0794	0.1203	0.4102	0.0076	0.3614	0.0212
6	Chuadanga	0.0920	0.2126	0.1125	0.0699	0.4933	0.0197
7	Comilla	0.1064	0.2924	0.1830	0.0252	0.3741	0.0189
8	Cox's Bazar	0.1351	0.2638	0.3454	0.0185	0.1945	0.0427
9	Dhaka	0.1104	0.2771	0.1997	0.0218	0.3648	0.0262
10	Dinajpur	0.0827	0.1563	0.1034	0.0133	0.6135	0.0307
11	Faridpur	0.1730	0.2345	0.2995	0.0145	0.2355	0.0429
12	Feni	0.1517	0.2432	0.3162	0.0174	0.2335	0.0380
13	Hatiya	0.0948	0.1316	0.6159	0.0105	0.1229	0.0242
14	Ishurdi	0.0639	0.2493	0.0965	0.0488	0.5279	0.0136
15	Jessore	0.0627	0.2518	0.1052	0.0263	0.5418	0.0123
16	Khepupara	0.0087	0.1280	0.5475	0.0088	0.2917	0.0153
17	Khulna	0.1309	0.2651	0.2069	0.0300	0.3185	0.0486
18	Kutubdia	0.1322	0.2037	0.4016	0.0304	0.1948	0.0372
19	M.Court	0.0031	0.0595	0.7983	0.0045	0.1258	0.0088
20	Madaripur	0.0994	0.2573	0.3165	0.0141	0.2886	0.0241
21	Mongla	0.0357	0.0740	0.0533	0.0141	0.8046	0.0183
22	Mymensingh	0.0111	0.1526	0.6140	0.0044	0.1938	0.0241
23	Patuakhali	0.1029	0.2886	0.1836	0.0256	0.3797	0.0196
24	Rajshahi	0.4207	0.1436	0.1862	0.0048	0.2306	0.0141
25	Rangamati	0.1561	0.1342	0.5501	0.0087	0.1205	0.0304
26	Rangpur	0.0770	0.2871	0.1083	0.0139	0.4939	0.0198
27	Sandwip	0.0014	0.0383	0.8585	0.0021	0.0930	0.0067
28	Satkhira	0.2774	0.2146	0.1579	0.0043	0.3213	0.0245
29	Shitakunda	0.1683	0.1335	0.5422	0.0067	0.1346	0.0146
30	Srimangal	0.1343	0.1763	0.4550	0.0121	0.2064	0.0160
31	Syadpur	0.1114	0.2149	0.0898	0.0671	0.4888	0.0280
32	Sylhet	0.1147	0.3000	0.2503	0.0287	0.2766	0.0297
33	Tangail	0.1673	0.2781	0.1853	0.0416	0.2753	0.0524
34	Teknaf	0.1361	0.3068	0.3680	0.0196	0.1267	0.0428
	Critical Chi Square Value (95% Confidence Level)	4.6234	6.5952	11.2177	0.6594	10.0586	0.8457

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B2. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

February

Appendix B

		Scaling					
	Rank	3	5	4	2	6	1
	Comparison	3.50	6.84	4.78	1.20	24.77	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	8.10	23.93	8.36	***4.11***	116.63	***2.17***	0.0496	0.1465	0.0512	0.0251	0.7142	0.0133
2	Bhola	27.93	40.83	34.26	***3.85***	119.41	7.25	0.1196	0.1748	0.1467	0.0165	0.5113	0.0311
3	Bogra	***5.25***	23.93	8.51	9.93	84.29	***0.70***	0.0396	0.1805	0.0641	0.0749	0.6357	0.0052
4	Chandpur	17.81	50.83	18.35	***4.04***	107.64	***3.65***	0.0880	0.2512	0.0907	0.0199	0.5320	0.0180
5	Chittagong	46.80	52.21	57.58	***2.02***	312.29	***3.83***	0.0986	0.1100	0.1213	0.0042	0.6578	0.0081
6	Chuadanga	***4.12***	7.75	6.71	6.52	44.81	***1.94***	0.0573	0.1079	0.0934	0.0907	0.6237	0.0270
7	Comilla	42.19	53.59	22.58	***2.64***	114.96	***4.85***	0.1752	0.2225	0.0938	0.0110	0.4774	0.0202
8	Cox's Bazar	14.25	27.38	16.74	19.30	168.29	***3.59***	0.0571	0.1097	0.0671	0.0773	0.6744	0.0144
9	Dhaka	15.76	11.86	15.14	11.29	131.07	7.10	0.0820	0.0617	0.0788	0.0587	0.6819	0.0370
10	Dinajpur	8.48	33.59	10.04	***2.14***	72.16	***1.72***	0.0662	0.2621	0.0784	0.0167	0.5632	0.0134
11	Faridpur	***5.41***	22.55	11.28	7.22	100.18	***2.26***	0.0364	0.1514	0.0758	0.0485	0.6728	0.0152
12	Feni	13.86	40.48	20.27	***3.02***	122.25	***3.46***	0.0681	0.1991	0.0997	0.0149	0.6012	0.0170
13	Hatiya	57.02	71.86	152.14	***3.76***	144.24	14.40	0.1286	0.1621	0.3431	0.0085	0.3253	0.0325
14	Ishurdi	13.21	24.97	15.80	7.02	177.78	***5.31***	0.0541	0.1023	0.0647	0.0288	0.7284	0.0217
15	Jessore	16.80	29.45	17.58	***3.27***	99.95	***4.30***	0.0981	0.1719	0.1026	0.0191	0.5833	0.0251
16	Khepupara	47.08	36.69	40.35	10.82	122.30	9.42	0.1766	0.1376	0.1513	0.0406	0.4586	0.0353
17	Khulna	***1.07***	42.55	37.24	***4.94***	199.71	6.75	0.0036	0.1456	0.1274	0.0169	0.6833	0.0231
18	Kutubdia	16.85	57.03	33.09	***5.93***	127.94	***5.20***	0.0685	0.2318	0.1345	0.0241	0.5200	0.0211
19	M.Court	7.31	24.62	9.74	***1.66***	213.47	***1.96***	0.0283	0.0951	0.0376	0.0064	0.8249	0.0076
20	Madaripur	***4.44***	73.24	141.70	***5.64***	223.82	16.41	0.0095	0.1574	0.3046	0.0121	0.4811	0.0353
21	Mongla	10.10	21.44	12.38	***1.91***	64.59	***5.06***	0.0874	0.1857	0.1072	0.0166	0.5593	0.0438
22	Mymensingh	21.79	45.66	16.80	***2.27***	88.37	***5.57***	0.1207	0.2530	0.0931	0.0126	0.4897	0.0309
23	Patuakhali	12.60	36.29	18.37	***1.04***	96.58	***4.47***	0.0744	0.2143	0.1085	0.0061	0.5703	0.0264
24	Rajshahi	18.35	23.24	17.58	6.07	64.83	7.80	0.1331	0.1686	0.1275	0.0440	0.4702	0.0566
25	Rangamati	45.40	48.07	50.89	***1.84***	151.07	6.67	0.1494	0.1582	0.1674	0.0060	0.4970	0.0219
26	Rangpur	7.82	34.97	9.71	***2.74***	219.81	***1.21***	0.0283	0.1266	0.0351	0.0099	0.7957	0.0044
27	Sandwip	16.30	47.36	22.45	***4.08***	122.70	***2.91***	0.0755	0.2195	0.1040	0.0189	0.5686	0.0135
28	Satkhira	29.64	38.76	15.31	8.60	139.80	***3.40***	0.1259	0.1646	0.0650	0.0365	0.5936	0.0144
29	Shitakunda	14.34	33.24	19.94	13.74	251.54	***5.61***	0.0424	0.0982	0.0589	0.0406	0.7433	0.0166
30	Srimangal	11.77	25.57	15.26	6.37	109.68	***3.53***	0.0684	0.1485	0.0886	0.0370	0.6370	0.0205
31	Syadpur	13.81	18.86	23.91	***0.90***	24.61	***3.55***	0.1613	0.2202	0.2792	0.0105	0.2873	0.0415
32	Sylhet	18.64	27.03	16.29	10.20	105.91	7.00	0.1007	0.1461	0.0880	0.0551	0.5723	0.0378
33	Tangail	18.15	***2.55***	17.79	11.28	371.17	9.76	0.0421	0.0059	0.0413	0.0262	0.8618	0.0227
34	Teknaf	23.87	50.14	36.10	7.73	86.67	7.46	0.1126	0.2365	0.1703	0.0365	0.4089	0.0352
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	2.8273	5.5271	3.8611	0.9714	20.0055	0.8075

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B3. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

March

Appendix B

								Scaling					
								Rank	3	5	4	2	6	1
								Comparison	4.48	6.74	4.85	1.53	33.53	**1.00**
	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	16.46	45.31	15.82	***5.39***	187.35	***2.76***		0.0603	0.1659	0.0579	0.0197	0.6860	0.0101
2	Bhola	11.16	38.41	14.70	6.44	159.30	***3.84***		0.0477	0.1643	0.0629	0.0276	0.6812	0.0164
3	Bogra	14.73	27.72	10.98	***2.54***	73.00	***4.89***		0.1100	0.2071	0.0820	0.0190	0.5453	0.0365
4	Chandpur	164.76	47.38	28.07	8.21	233.48	7.55		0.3366	0.0968	0.0574	0.0168	0.4770	0.0154
5	Chittagong	***5.52***	23.93	10.68	9.01	150.62	***1.32***		0.0275	0.1190	0.0531	0.0448	0.7490	0.0066
6	Chuadanga	15.88	14.63	16.59	***4.92***	46.03	6.01		0.1526	0.1406	0.1594	0.0473	0.4424	0.0578
7	Comilla	12.58	21.86	14.67	9.76	282.19	***5.90***		0.0362	0.0630	0.0423	0.0281	0.8133	0.0170
8	Cox's Bazar	30.54	64.67	50.67	***0.92***	183.14	6.66		0.0907	0.1921	0.1505	0.0027	0.5441	0.0198
9	Dhaka	***5.95***	8.76	9.39	***2.87***	1160.73	***2.17***		0.0050	0.0074	0.0079	0.0024	0.9755	0.0018
10	Dinajpur	12.94	45.31	18.27	8.94	75.33	***2.14***		0.0794	0.2781	0.1122	0.0549	0.4623	0.0132
11	Faridpur	10.99	29.10	12.14	10.06	154.24	***2.44***		0.0502	0.1329	0.0554	0.0459	0.7044	0.0111
12	Feni	15.84	28.07	15.49	***5.41***	166.28	***5.14***		0.0670	0.1188	0.0656	0.0229	0.7039	0.0218
13	Hatiya	25.26	50.83	27.44	***2.50***	204.47	***3.48***		0.0805	0.1619	0.0874	0.0079	0.6512	0.0111
14	Ishurdi	17.38	37.03	22.98	8.10	116.12	9.94		0.0821	0.1751	0.1086	0.0383	0.5489	0.0470
15	Jessore	10.97	18.76	10.47	14.63	207.05	***3.56***		0.0413	0.0707	0.0394	0.0551	0.7800	0.0134
16	Khepupara	349.69	52.36	89.91	11.84	277.09	8.02		0.4433	0.0664	0.1140	0.0150	0.3512	0.0102
17	Khulna	31.56	43.59	32.40	7.24	161.01	12.73		0.1094	0.1511	0.1123	0.0251	0.5580	0.0441
18	Kutubdia	126.79	79.79	144.10	***3.77***	310.65	9.66		0.1879	0.1183	0.2136	0.0056	0.4604	0.0143
19	M.Court	39.15	41.64	16.97	10.69	209.22	***4.61***		0.1215	0.1292	0.0526	0.0332	0.6492	0.0143
20	Madaripur	***4.92***	17.72	7.03	16.05	162.61	***1.00***		0.0235	0.0847	0.0336	0.0767	0.7768	0.0048
21	Mongla	24.54	31.44	25.06	***3.32***	94.60	11.13		0.1291	0.1654	0.1318	0.0174	0.4977	0.0586
22	Mymensingh	8.56	12.90	7.52	21.02	346.78	***2.85***		0.0214	0.0323	0.0188	0.0526	0.8677	0.0071
23	Patuakhali	18.86	34.50	25.15	8.62	135.45	6.67		0.0823	0.1505	0.1097	0.0376	0.5908	0.0291
24	Rajshahi	12.05	34.28	15.61	***2.78***	103.81	***4.04***		0.0698	0.1986	0.0905	0.0161	0.6015	0.0234
25	Rangamati	18.13	28.07	15.16	8.53	165.63	***5.03***		0.0754	0.1167	0.0630	0.0354	0.6885	0.0209
26	Rangpur	9.98	30.14	11.78	8.74	94.20	***3.08***		0.0632	0.1909	0.0746	0.0553	0.5965	0.0195
27	Sandwip	8.62	26.64	12.23	14.02	167.50	***2.55***		0.0372	0.1151	0.0528	0.0605	0.7234	0.0110
28	Satkhira	9.25	33.59	9.68	***5.17***	135.22	***2.44***		0.0474	0.1719	0.0495	0.0265	0.6922	0.0125
29	Shitakunda	15.48	19.10	12.75	***4.70***	715.21	***4.66***		0.0201	0.0247	0.0165	0.0061	0.9266	0.0060
30	Srimangal	11.65	31.29	8.75	***3.76***	202.13	***3.13***		0.0447	0.1200	0.0336	0.0144	0.7753	0.0120
31	Syadpur	19.18	30.29	47.59	6.38	77.78	6.32		0.1023	0.1615	0.2538	0.0340	0.4148	0.0337
32	Sylhet	7.65	23.59	8.53	***1.96***	446.19	***2.06***		0.0156	0.0481	0.0174	0.0040	0.9106	0.0042
33	Tangail	6.15	18.00	7.75	6.13	99.06	***1.31***		0.0445	0.1300	0.0560	0.0443	0.7157	0.0095
34	Teknaf	9.67	72.21	296.96	***2.04***	173.04	10.08		0.0171	0.1280	0.5265	0.0036	0.3068	0.0179
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		2.9228	4.3969	3.1627	0.9970	21.8685	0.6521

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B4. Determination of The Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

April

	Scaling						
Rank	4	5	3	2	6	1	
Comparison	5.56	7.08	3.63	2.10	162.30	**1.00**	

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	20.76	26.69	16.37	8.87	214.26	***3.78***
2	Bhola	15.43	29.10	9.52	***3.66***	225.92	***3.10***
3	Bogra	7.58	22.90	7.24	***1.18***	204.98	***2.08***
4	Chandpur	168.95	65.31	26.18	***0.61***	386.19	7.98
5	Chittagong	15.70	***5.21***	17.20	29.80	3425.31	9.18
6	Chuadanga	***3.48***	6.50	***5.64***	8.29	119.23	***0.85***
7	Comilla	7.45	17.72	16.07	17.93	2290.22	***3.19***
8	Cox's Bazar	6.14	***3.07***	9.18	12.75	2360.25	***2.36***
9	Dhaka	***1.99***	10.48	20.69	7.73	602.39	***1.20***
10	Dinajpur	***5.89***	8.07	6.62	***3.71***	4448.92	***2.29***
11	Faridpur	14.53	22.21	21.61	11.99	1684.67	***3.01***
12	Feni	24.62	11.29	22.04	***1.06***	1803.92	13.09
13	Hatiya	11.48	***4.62***	23.21	14.04	1411.19	8.86
14	Ishurdi	82.16	41.17	17.78	7.28	215.42	***5.35***
15	Jessore	***5.92***	23.93	7.37	8.02	174.96	***0.86***
16	Khepupara	7.54	17.72	16.03	***4.97***	2521.42	***4.52***
17	Khulna	22.72	30.83	10.24	10.83	186.19	***3.16***
18	Kutubdia	15.40	31.52	14.22	***3.67***	178.40	6.39
19	M.Court	***3.82***	11.17	9.20	9.17	2525.69	***1.79***
20	Madaripur	***5.42***	13.59	9.14	***1.08***	3300.44	***2.95***
21	Mongla	11.67	***4.78***	10.11	***3.00***	3579.30	6.60
22	Mymensingh	***2.46***	11.86	9.09	***3.41***	2131.87	***0.68***
23	Patuakhali	14.92	14.86	11.13	13.02	4798.40	7.60
24	Rajshahi	11.85	30.93	10.02	***2.32***	145.82	***2.53***
25	Rangamati	13.38	17.72	26.77	21.02	3235.47	11.52
26	Rangpur	***3.78***	17.72	8.69	14.25	545.20	***0.69***
27	Sandwip	***3.21***	14.86	9.65	7.64	2766.52	***1.17***
28	Satkhira	***3.98***	17.38	9.74	7.81	1886.14	***0.72***
29	Shitakunda	6.11	6.00	12.68	10.81	1119.79	***1.97***
30	Srimangal	***2.95***	14.50	10.49	9.00	2069.93	***0.95***
31	Syadpur	9.37	18.14	8.05	***4.86***	110.14	***3.53***
32	Sylhet	***2.94***	***4.28***	19.90	7.92	1077.48	***3.35***
33	Tangail	***2.01***	6.64	8.54	8.09	1838.42	***1.66***
34	Teknaf	***3.49***	11.52	14.82	***4.27***	621.85	***3.24***
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Normal	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
0.0714	0.0918	0.0563	0.0305	0.7370	0.0130
0.0538	0.1015	0.0332	0.0128	0.7879	0.0108
0.0308	0.0931	0.0294	0.0048	0.8334	0.0084
0.2579	0.0997	0.0400	0.0009	0.5894	0.0122
0.0045	0.0015	0.0049	0.0085	0.9780	0.0026
0.0242	0.0451	0.0392	0.0576	0.8280	0.0059
0.0032	0.0075	0.0068	0.0076	0.9735	0.0014
0.0026	0.0013	0.0038	0.0053	0.9860	0.0010
0.0031	0.0163	0.0321	0.0120	0.9347	0.0019
0.0013	0.0018	0.0015	0.0008	0.9941	0.0005
0.0083	0.0126	0.0123	0.0068	0.9583	0.0017
0.0131	0.0060	0.0117	0.0006	0.9616	0.0070
0.0078	0.0031	0.0158	0.0095	0.9578	0.0060
0.2226	0.1115	0.0482	0.0197	0.5835	0.0145
0.0268	0.1083	0.0333	0.0363	0.7915	0.0039
0.0029	0.0069	0.0062	0.0019	0.9803	0.0018
0.0861	0.1168	0.0388	0.0410	0.7054	0.0120
0.0617	0.1263	0.0570	0.0147	0.7148	0.0256
0.0015	0.0044	0.0036	0.0036	0.9863	0.0007
0.0016	0.0041	0.0027	0.0003	0.9903	0.0009
0.0032	0.0013	0.0028	0.0008	0.9900	0.0018
0.0011	0.0055	0.0042	0.0016	0.9873	0.0003
0.0031	0.0031	0.0023	0.0027	0.9873	0.0016
0.0582	0.1520	0.0492	0.0114	0.7167	0.0124
0.0040	0.0053	0.0080	0.0063	0.9728	0.0035
0.0064	0.0300	0.0147	0.0241	0.9236	0.0012
0.0011	0.0053	0.0034	0.0027	0.9870	0.0004
0.0021	0.0090	0.0051	0.0041	0.9794	0.0004
0.0053	0.0052	0.0110	0.0093	0.9675	0.0017
0.0014	0.0069	0.0050	0.0043	0.9820	0.0005
0.0608	0.1177	0.0522	0.0315	0.7148	0.0229
0.0026	0.0038	0.0178	0.0071	0.9656	0.0030
0.0011	0.0036	0.0046	0.0043	0.9856	0.0009
0.0053	0.0175	0.0225	0.0065	0.9434	0.0049
1.0408	1.3258	0.6797	0.3921	30.3744	0.1871

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B5. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

May

Appendix B

								Scaling					
								Rank	3	4	5	2	6	1
								Comparison	4.19	4.80	8.37	2.41	260.81	**1.00**
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***3.68***	***1.86***	18.59	11.89	1381.83	***3.34***		0.0026	0.0013	0.0131	0.0084	0.9723	0.0024
2	Bhola	9.62	28.07	27.85	20.01	1118.78	***3.35***		0.0080	0.0232	0.0231	0.0166	0.9264	0.0028
3	Bogra	***2.11***	7.38	20.91	***4.81***	1240.48	***1.69***		0.0017	0.0058	0.0164	0.0038	0.9711	0.0013
4	Chandpur	***5.81***	23.24	18.07	***3.89***	527.63	***1.08***		0.0100	0.0401	0.0312	0.0067	0.9101	0.0019
5	Chittagong	***3.34***	17.00	8.54	16.11	2492.01	***0.75***		0.0013	0.0067	0.0034	0.0063	0.9820	0.0003
6	Chuadanga	11.62	9.00	16.04	7.55	1664.90	6.06		0.0068	0.0052	0.0093	0.0044	0.9707	0.0035
7	Comilla	9.92	***4.97***	18.61	***1.27***	1849.28	***5.94***		0.0052	0.0026	0.0098	0.0007	0.9785	0.0031
8	Cox's Bazar	***1.42***	12.21	14.90	7.19	880.92	***0.08***		0.0015	0.0133	0.0163	0.0078	0.9610	0.0001
9	Dhaka	6.46	14.28	16.12	7.96	4791.92	***3.99***		0.0013	0.0029	0.0033	0.0016	0.9899	0.0008
10	Dinajpur	***3.15***	13.93	11.58	***2.23***	5172.13	***1.16***		0.0006	0.0027	0.0022	0.0004	0.9938	0.0002
11	Faridpur	***3.43***	11.17	26.43	***3.26***	813.93	***2.43***		0.0040	0.0130	0.0307	0.0038	0.9457	0.0028
12	Feni	***4.17***	***1.17***	17.67	6.80	888.83	6.47		0.0045	0.0013	0.0191	0.0074	0.9608	0.0070
13	Hatiya	***1.83***	***5.66***	12.78	***2.59***	943.74	***0.94***		0.0019	0.0058	0.0132	0.0027	0.9754	0.0010
14	Ishurdi	***3.12***	7.72	21.08	***2.16***	1307.08	***0.92***		0.0023	0.0058	0.0157	0.0016	0.9739	0.0007
15	Jessore	***2.08***	8.76	22.18	***4.08***	1314.66	***1.74***		0.0015	0.0065	0.0164	0.0030	0.9713	0.0013
16	Khepupara	***3.44***	11.86	11.33	***1.45***	2986.51	***1.58***		0.0011	0.0039	0.0038	0.0005	0.9902	0.0005
17	Khulna	***1.18***	18.76	38.87	18.30	177.34	***1.44***		0.0046	0.0733	0.1519	0.0715	0.6930	0.0056
18	Kutubdia	***5.79***	12.21	16.04	***3.08***	727.03	***2.02***		0.0076	0.0159	0.0209	0.0040	0.9489	0.0026
19	M.Court	7.09	***3.24***	23.00	9.85	633.33	***4.98***		0.0104	0.0048	0.0338	0.0144	0.9293	0.0073
20	Madaripur	***2.70***	11.52	12.20	9.80	2640.06	***0.76***		0.0010	0.0043	0.0046	0.0037	0.9862	0.0003
21	Mongla	***0.80***	***3.11***	16.34	***3.25***	613.74	***2.08***		0.0013	0.0049	0.0256	0.0051	0.9600	0.0033
22	Mymensingh	***5.86***	10.14	18.71	***1.51***	458.05	***2.25***		0.0118	0.0204	0.0377	0.0030	0.9225	0.0045
23	Patuakhali	159.29	39.50	25.30	***2.67***	276.54	8.36		0.3113	0.0772	0.0495	0.0052	0.5405	0.0163
24	Rajshahi	***5.70***	17.03	25.20	***1.75***	388.52	***1.87***		0.0129	0.0387	0.0573	0.0040	0.8829	0.0042
25	Rangamati	10.30	***3.07***	12.36	16.97	2081.56	7.22		0.0048	0.0014	0.0058	0.0080	0.9766	0.0034
26	Rangpur	***1.86***	15.66	39.17	***1.69***	180.12	***0.95***		0.0078	0.0654	0.1636	0.0071	0.7522	0.0040
27	Sandwip	21.41	11.29	24.76	14.62	688.88	12.47		0.0277	0.0146	0.0320	0.0189	0.8907	0.0161
28	Satkhira	***1.49***	***5.66***	22.79	***4.16***	1175.66	***1.46***		0.0012	0.0047	0.0188	0.0034	0.9706	0.0012
29	Shitakunda	***4.66***	22.90	25.59	6.97	701.27	***1.61***		0.0061	0.0300	0.0335	0.0091	0.9191	0.0021
30	Srimangal	***2.17***	13.79	15.37	***1.97***	845.68	***0.20***		0.0025	0.0157	0.0175	0.0022	0.9619	0.0002
31	Syadpur	***4.71***	10.29	13.68	***5.38***	130.19	***1.36***		0.0285	0.0621	0.0826	0.0325	0.7861	0.0082
32	Sylhet	8.40	7.38	19.21	***3.65***	1956.22	***4.29***		0.0042	0.0037	0.0096	0.0018	0.9785	0.0021
33	Tangail	***3.73***	***1.18***	20.50	10.22	737.45	***5.50***		0.0048	0.0015	0.0263	0.0131	0.9472	0.0071
34	Teknaf	***3.68***	***1.86***	18.59	11.89	1381.83	***3.34***		0.0026	0.0013	0.0131	0.0084	0.9723	0.0024
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.5055	0.5801	1.0109	0.2912	31.4916	0.1207

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B6. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

June

Appendix B

		Scaling					
	Rank	2	4	5	3	6	1
	Comparison	2.02	3.16	6.42	2.29	122.56	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	9.09	21.86	25.87	***1.83***	3990.01	***5.28***	0.0022	0.0054	0.0064	0.0005	0.9842	0.0013
2	Bhola	***5.55***	14.97	30.78	***2.51***	382.53	***1.04***	0.0127	0.0342	0.0704	0.0057	0.8746	0.0024
3	Bogra	7.00	12.36	17.56	***1.85***	2070.96	***2.13***	0.0033	0.0059	0.0083	0.0009	0.9806	0.0010
4	Chandpur	276.40	38.41	34.62	44.86	1509.54	9.78	0.1444	0.0201	0.0181	0.0234	0.7888	0.0051
5	Chittagong	***5.87***	***3.79***	15.74	98.93	1134.43	***3.82***	0.0046	0.0030	0.0125	0.0784	0.8985	0.0030
6	Chuadanga	***1.17***	***2.13***	16.12	6.96	357.88	***3.29***	0.0030	0.0055	0.0416	0.0180	0.9235	0.0085
7	Comilla	***1.10***	19.45	40.05	***2.51***	340.79	***4.03***	0.0027	0.0477	0.0982	0.0061	0.8354	0.0099
8	Cox's Bazar	9.18	13.56	45.18	***5.51***	262.37	14.63	0.0262	0.0387	0.1289	0.0157	0.7487	0.0418
9	Dhaka	***5.43***	8.41	31.84	***4.23***	1327.46	7.41	0.0039	0.0061	0.0230	0.0031	0.9586	0.0053
10	Dinajpur	***0.25***	10.14	30.63	***1.12***	284.30	***2.45***	0.0008	0.0308	0.0931	0.0034	0.8644	0.0075
11	Faridpur	13.96	23.93	27.46	***2.46***	2686.43	***2.99***	0.0051	0.0087	0.0100	0.0009	0.9743	0.0011
12	Feni	***1.61***	11.86	29.96	***2.22***	387.53	***0.66***	0.0037	0.0273	0.0691	0.0051	0.8933	0.0015
13	Hatiya	15.96	27.03	40.34	***0.71***	358.39	6.39	0.0356	0.0602	0.0899	0.0016	0.7985	0.0142
14	Ishurdi	***0.30***	11.86	31.90	122.16	383.44	***2.71***	0.0005	0.0215	0.0578	0.2211	0.6942	0.0049
15	Jessore	7.26	19.45	21.79	***0.22***	3142.78	***2.79***	0.0023	0.0061	0.0068	0.0001	0.9839	0.0009
16	Khepupara	***1.20***	8.37	22.06	***1.66***	542.78	***1.81***	0.0021	0.0145	0.0382	0.0029	0.9393	0.0031
17	Khulna	12.51	20.83	27.96	***4.31***	1932.39	***5.53***	0.0062	0.0104	0.0140	0.0022	0.9645	0.0028
18	Kutubdia	***2.02***	7.72	34.77	***4.56***	378.57	***3.25***	0.0047	0.0179	0.0807	0.0106	0.8786	0.0075
19	M.Court	***5.34***	8.41	35.51	***3.70***	1673.21	8.44	0.0031	0.0049	0.0205	0.0021	0.9646	0.0049
20	Madaripur	6.40	8.07	24.54	***2.44***	1336.64	6.36	0.0046	0.0058	0.0177	0.0018	0.9655	0.0046
21	Mongla	14.89	20.33	20.22	***1.94***	150.33	***4.08***	0.0703	0.0960	0.0955	0.0092	0.7098	0.0192
22	Mymensingh	***3.67***	10.48	17.60	***2.17***	521.44	***1.57***	0.0066	0.0188	0.0316	0.0039	0.9363	0.0028
23	Patuakhali	14.53	7.36	21.63	11.95	2991.42	7.64	0.0048	0.0024	0.0071	0.0039	0.9793	0.0025
24	Rajshahi	***5.16***	15.21	31.88	15.69	583.06	***3.00***	0.0079	0.0233	0.0487	0.0240	0.8915	0.0046
25	Rangamati	8.15	11.64	13.18	***5.54***	3331.02	***3.56***	0.0024	0.0035	0.0039	0.0016	0.9875	0.0011
26	Rangpur	55.27	57.03	59.53	***1.96***	461.99	9.35	0.0857	0.0884	0.0923	0.0030	0.7161	0.0145
27	Sandwip	6.13	44.50	19.68	7.30	701.39	18.03	0.0077	0.0558	0.0247	0.0092	0.8800	0.0226
28	Satkhira	7.98	13.24	17.44	***4.55***	3170.35	***2.81***	0.0025	0.0041	0.0054	0.0014	0.9857	0.0009
29	Shitakunda	***0.29***	11.86	34.48	22.42	313.43	***4.34***	0.0007	0.0307	0.0891	0.0580	0.8103	0.0112
30	Srimangal	***2.79***	9.86	29.33	***2.30***	205.67	***2.39***	0.0110	0.0391	0.1162	0.0091	0.8151	0.0095
31	Syadpur	9.34	***1.71***	17.81	***5.87***	630.68	***5.95***	0.0139	0.0026	0.0265	0.0087	0.9394	0.0089
32	Sylhet	***4.96***	***3.24***	31.13	***3.02***	1063.84	***1.87***	0.0045	0.0029	0.0281	0.0027	0.9601	0.0017
33	Tangail	6.51	9.24	21.01	***3.86***	678.35	***2.92***	0.0090	0.0128	0.0291	0.0053	0.9397	0.0040
34	Teknaf	***0.81***	10.93	33.77	9.22	343.93	***5.10***	0.0020	0.0271	0.0836	0.0228	0.8518	0.0126
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.5008	0.7820	1.5869	0.5664	30.3166	0.2474

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B7. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

July

		Scaling					
	Rank	1	3	4	2	6	5
	Comparison	**1.00**	2.71	6.18	2.09	172.70	6.82

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***0.95***	6.69	39.61	***4.96***	1278.57	***2.33***	0.0007	0.0050	0.0297	0.0037	0.9591	0.0017
2	Bhola	***4.61***	16.69	42.57	6.14	2860.84	***0.86***	0.0016	0.0057	0.0145	0.0021	0.9758	0.0003
3	Bogra	***1.69***	8.07	32.45	6.90	1516.46	***3.11***	0.0011	0.0051	0.0207	0.0044	0.9667	0.0020
4	Chandpur	9.87	17.03	31.87	***5.38***	1279.13	***4.02***	0.0073	0.0126	0.0237	0.0040	0.9494	0.0030
5	Chittagong	***2.83***	***3.59***	16.02	23.79	824.80	***2.83***	0.0032	0.0041	0.0183	0.0272	0.9439	0.0032
6	Chuadanga	***5.91***	***3.38***	24.64	***4.93***	2360.68	***5.84***	0.0025	0.0014	0.0102	0.0021	0.9814	0.0024
7	Comilla	***4.87***	9.45	15.36	***3.08***	1510.55	***1.30***	0.0032	0.0061	0.0099	0.0020	0.9780	0.0008
8	Cox's Bazar	***2.66***	15.57	39.69	112.92	350.46	10.63	0.0050	0.0293	0.0746	0.2123	0.6589	0.0200
9	Dhaka	6.34	6.34	24.01	***3.41***	1038.51	6.65	0.0058	0.0058	0.0221	0.0031	0.9569	0.0061
10	Dinajpur	***5.62***	19.79	20.63	12.75	822.34	***1.78***	0.0064	0.0224	0.0234	0.0144	0.9314	0.0020
11	Faridpur	***5.96***	14.97	34.44	***1.19***	794.36	***2.98***	0.0070	0.0175	0.0403	0.0014	0.9303	0.0035
12	Feni	***1.04***	15.66	40.83	***5.31***	356.62	9.65	0.0024	0.0365	0.0951	0.0124	0.8311	0.0225
13	Hatiya	***5.64***	39.45	79.18	***0.97***	295.97	34.96	0.0124	0.0865	0.1736	0.0021	0.6488	0.0767
14	Ishurdi	***1.89***	12.21	27.56	***3.00***	1126.12	***0.03***	0.0016	0.0104	0.0235	0.0026	0.9618	0.0000
15	Jessore	***2.09***	12.55	26.41	***0.35***	2843.55	***0.38***	0.0007	0.0044	0.0092	0.0001	0.9855	0.0001
16	Khepupara	***3.72***	11.29	41.43	***1.44***	789.94	***2.17***	0.0044	0.0133	0.0487	0.0017	0.9294	0.0026
17	Khulna	7.53	10.83	38.73	***2.17***	3379.84	***5.19***	0.0022	0.0031	0.0112	0.0006	0.9813	0.0015
18	Kutubdia	13.08	38.07	40.11	9.55	483.99	***5.22***	0.0222	0.0645	0.0680	0.0162	0.8203	0.0089
19	M.Court	8.18	14.97	40.60	***4.50***	2891.83	***2.98***	0.0028	0.0051	0.0137	0.0015	0.9760	0.0010
20	Madaripur	9.19	11.17	39.83	10.43	4867.41	7.92	0.0019	0.0023	0.0081	0.0021	0.9841	0.0016
21	Mongla	***4.85***	***3.67***	27.06	***3.20***	1575.51	***4.66***	0.0030	0.0023	0.0167	0.0020	0.9732	0.0029
22	Mymensingh	***3.21***	***2.90***	26.07	***4.96***	779.38	***4.37***	0.0039	0.0035	0.0318	0.0060	0.9494	0.0053
23	Patuakhali	12.65	11.33	49.38	***3.58***	2181.57	***5.61***	0.0056	0.0050	0.0218	0.0016	0.9635	0.0025
24	Rajshahi	13.37	24.97	39.30	***5.65***	992.03	6.25	0.0124	0.0231	0.0363	0.0052	0.9172	0.0058
25	Rangamati	9.88	***3.93***	20.09	9.30	2027.42	***5.54***	0.0048	0.0019	0.0097	0.0045	0.9765	0.0027
26	Rangpur	20.46	21.86	23.00	***2.84***	976.08	***3.50***	0.0195	0.0209	0.0220	0.0027	0.9316	0.0033
27	Sandwip	18.09	23.43	24.30	***2.24***	1453.30	***2.85***	0.0119	0.0154	0.0159	0.0015	0.9535	0.0019
28	Satkhira	***3.26***	***4.62***	35.84	***0.74***	996.76	***3.87***	0.0031	0.0044	0.0343	0.0007	0.9538	0.0037
29	Shitakunda	***1.23***	13.43	25.63	***3.61***	391.56	***0.90***	0.0028	0.0308	0.0587	0.0083	0.8974	0.0021
30	Srimangal	***5.79***	16.64	22.58	***1.78***	2271.92	***3.12***	0.0025	0.0072	0.0097	0.0008	0.9785	0.0013
31	Syadpur	***5.11***	***1.00***	7.69	***0.91***	813.29	***3.99***	0.0061	0.0012	0.0092	0.0011	0.9775	0.0048
32	Sylhet	***2.72***	9.45	31.57	***3.46***	697.12	***0.88***	0.0037	0.0127	0.0424	0.0046	0.9355	0.0012
33	Tangail	***2.29***	6.18	27.56	9.00	504.52	7.72	0.0041	0.0111	0.0495	0.0161	0.9053	0.0139
34	Teknaf	16.78	19.86	83.87	18.30	261.34	8008919.7	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1776	0.4805	1.0967	0.3712	30.6629	1.2112

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B8. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

August

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	1.04	2.96	6.14	1.03	104.82	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***3.90***	12.55	30.39	***3.37***	1873.47	***2.03***	0.0020	0.0065	0.0158	0.0018	0.9729	0.0011
2	Bhola	***3.81***	15.66	24.32	***0.78***	4508.12	***1.17***	0.0008	0.0034	0.0053	0.0002	0.9900	0.0003
3	Bogra	10.99	18.76	31.74	***3.52***	1825.91	***4.51***	0.0058	0.0099	0.0167	0.0019	0.9633	0.0024
4	Chandpur	16.31	27.71	25.04	***3.23***	259.59	***2.57***	0.0488	0.0829	0.0749	0.0097	0.7762	0.0077
5	Chittagong	11.59	16.69	16.94	6.72	1368.46	***5.21***	0.0081	0.0117	0.0119	0.0047	0.9599	0.0037
6	Chuadanga	6.54	7.75	32.68	24.22	124.61	21.94	0.0300	0.0356	0.1501	0.1113	0.5723	0.1008
7	Comilla	***3.64***	***5.66***	28.13	7.40	634.27	***4.82***	0.0053	0.0083	0.0411	0.0108	0.9274	0.0070
8	Cox's Bazar	***1.38***	6.64	22.86	***1.42***	338.20	***4.00***	0.0037	0.0177	0.0610	0.0038	0.9031	0.0107
9	Dhaka	***5.09***	19.10	40.31	***1.60***	175.21	***1.69***	0.0209	0.0786	0.1659	0.0066	0.7210	0.0069
10	Dinajpur	***4.77***	17.72	15.93	***2.67***	2842.65	***0.89***	0.0017	0.0061	0.0055	0.0009	0.9854	0.0003
11	Faridpur	***5.92***	19.79	24.62	***0.88***	1172.07	***1.27***	0.0048	0.0162	0.0201	0.0007	0.9571	0.0010
12	Feni	***3.85***	***2.21***	19.00	7.81	980.39	***3.61***	0.0038	0.0022	0.0187	0.0077	0.9641	0.0035
13	Hatiya	***4.78***	26.00	40.35	8.81	343.17	***2.19***	0.0112	0.0611	0.0949	0.0207	0.8069	0.0051
14	Ishurdi	7.46	41.86	44.99	7.22	244.21	15.08	0.0207	0.1160	0.1247	0.0200	0.6768	0.0418
15	Jessore	7.80	23.93	25.25	***2.83***	2238.14	***2.27***	0.0034	0.0104	0.0110	0.0012	0.9730	0.0010
16	Khepupara	6.60	13.93	30.26	***1.28***	946.18	***2.95***	0.0066	0.0139	0.0302	0.0013	0.9451	0.0029
17	Khulna	***4.90***	21.86	36.06	***1.58***	262.15	***1.47***	0.0149	0.0666	0.1099	0.0048	0.7992	0.0045
18	Kutubdia	***5.84***	22.21	29.29	10.08	818.54	***3.89***	0.0066	0.0250	0.0329	0.0113	0.9199	0.0044
19	M.Court	***4.51***	13.93	30.96	***0.58***	517.47	***1.93***	0.0079	0.0245	0.0544	0.0010	0.9088	0.0034
20	Madaripur	***1.81***	11.52	32.00	***1.69***	584.46	***1.42***	0.0029	0.0182	0.0506	0.0027	0.9235	0.0022
21	Mongla	***1.70***	***3.67***	26.92	***1.24***	211.05	***3.30***	0.0069	0.0148	0.1086	0.0050	0.8514	0.0133
22	Mymensingh	7.92	19.10	22.33	***0.63***	2621.57	***2.83***	0.0030	0.0071	0.0084	0.0002	0.9803	0.0011
23	Patuakhali	***1.40***	9.86	24.83	***2.68***	539.87	***1.51***	0.0024	0.0170	0.0428	0.0046	0.9306	0.0026
24	Rajshahi	***3.75***	13.07	27.55	***1.56***	394.55	***0.97***	0.0085	0.0296	0.0624	0.0035	0.8938	0.0022
25	Rangamati	6.46	6.29	25.44	***3.18***	1440.91	***4.96***	0.0043	0.0042	0.0171	0.0021	0.9688	0.0033
26	Rangpur	8.47	30.14	34.31	6.24	967.28	***3.03***	0.0081	0.0287	0.0327	0.0059	0.9217	0.0029
27	Sandwip	***3.48***	6.15	16.75	***4.22***	1071.12	***4.03***	0.0031	0.0056	0.0152	0.0038	0.9687	0.0036
28	Satkhira	6.56	10.48	42.99	***0.77***	293.11	6.66	0.0182	0.0291	0.1192	0.0021	0.8129	0.0185
29	Shitakunda	***3.24***	13.24	24.50	9.57	523.59	***2.93***	0.0056	0.0229	0.0425	0.0166	0.9073	0.0051
30	Srimangal	***2.54***	6.64	34.44	***5.28***	644.02	7.44	0.0036	0.0095	0.0492	0.0075	0.9195	0.0106
31	Syadpur	8.43	13.14	8.71	9.01	1705.59	***3.70***	0.0048	0.0075	0.0050	0.0052	0.9754	0.0021
32	Sylhet	***4.26***	15.66	36.14	***0.28***	2320.74	***0.98***	0.0018	0.0066	0.0152	0.0001	0.9759	0.0004
33	Tangail	***2.46***	12.09	24.17	***4.28***	248.82	***0.79***	0.0084	0.0413	0.0826	0.0146	0.8504	0.0027
34	Teknaf	7.54	11.86	47.89	***2.19***	472.72	6.29	0.0138	0.0216	0.0873	0.0040	0.8618	0.0115
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3024	0.8604	1.7837	0.2984	30.4643	0.2906

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B9. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

September

		Scaling					
	Rank	4	3	5	2	6	1
	Comparison	6.15	5.16	7.43	3.12	179.40	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	309.71	42.55	24.84	***5.23***	291.15	***5.75***	0.4560	0.0626	0.0366	0.0077	0.4286	0.0085
2	Bhola	63.81	35.66	19.54	***4.01***	292.73	***4.82***	0.1517	0.0848	0.0465	0.0095	0.6960	0.0115
3	Bogra	***5.45***	20.48	30.77	***1.16***	2585.21	***2.42***	0.0021	0.0077	0.0116	0.0004	0.9772	0.0009
4	Chandpur	***5.80***	21.86	19.88	60.95	1077.73	***1.83***	0.0049	0.0184	0.0167	0.0513	0.9071	0.0015
5	Chittagong	6.91	***4.62***	24.45	13.20	313.81	***4.92***	0.0188	0.0126	0.0665	0.0359	0.8530	0.0134
6	Chuadanga	***4.42***	7.33	11.19	8.25	1063.16	***3.38***	0.0040	0.0067	0.0102	0.0075	0.9685	0.0031
7	Comilla	6.26	18.41	30.26	***2.16***	458.71	***4.09***	0.0120	0.0354	0.0582	0.0042	0.8823	0.0079
8	Cox's Bazar	***2.01***	7.71	43.00	***2.82***	993.11	***1.62***	0.0019	0.0073	0.0409	0.0027	0.9456	0.0015
9	Dhaka	***5.78***	19.10	23.70	7.18	865.16	***1.46***	0.0063	0.0207	0.0257	0.0078	0.9380	0.0016
10	Dinajpur	42.38	28.76	21.06	***1.31***	1651.04	***4.54***	0.0242	0.0164	0.0120	0.0008	0.9439	0.0026
11	Faridpur	7.69	20.48	12.05	***3.34***	3352.15	***1.33***	0.0023	0.0060	0.0035	0.0010	0.9868	0.0004
12	Feni	***4.40***	12.90	27.60	8.45	336.27	***2.37***	0.0112	0.0329	0.0704	0.0216	0.8579	0.0061
13	Hatiya	***4.97***	21.86	28.57	105.92	316.25	***1.21***	0.0104	0.0457	0.0597	0.2212	0.6605	0.0025
14	Ishurdi	***1.08***	***5.31***	19.97	***3.45***	820.31	***2.93***	0.0013	0.0062	0.0234	0.0040	0.9616	0.0034
15	Jessore	62.01	52.21	29.12	***3.17***	268.95	6.72	0.1469	0.1237	0.0690	0.0075	0.6371	0.0159
16	Khepupara	***3.48***	13.59	29.73	***0.61***	381.25	***0.69***	0.0081	0.0316	0.0692	0.0014	0.8880	0.0016
17	Khulna	10.65	11.52	22.42	***1.43***	1700.45	6.99	0.0061	0.0066	0.0128	0.0008	0.9698	0.0040
18	Kutubdia	***2.73***	7.38	23.73	***4.83***	427.95	***1.55***	0.0058	0.0158	0.0507	0.0103	0.9141	0.0033
19	M.Court	***5.30***	14.62	14.18	***2.06***	2347.25	***2.96***	0.0022	0.0061	0.0059	0.0009	0.9836	0.0012
20	Madaripur	11.24	28.07	14.18	***2.62***	562.97	***2.42***	0.0181	0.0452	0.0228	0.0042	0.9058	0.0039
21	Mongla	9.09	***3.67***	18.60	7.12	1346.93	6.75	0.0065	0.0026	0.0134	0.0051	0.9675	0.0048
22	Mymensingh	7.17	19.10	18.88	***1.81***	2421.91	***1.61***	0.0029	0.0077	0.0076	0.0007	0.9803	0.0006
23	Patuakhali	13.36	12.00	20.23	8.08	3048.23	***5.62***	0.0043	0.0039	0.0065	0.0026	0.9809	0.0018
24	Rajshahi	***3.77***	13.59	30.94	7.19	1329.74	***5.60***	0.0027	0.0098	0.0222	0.0052	0.9561	0.0040
25	Rangamati	***2.90***	9.45	34.83	***1.05***	408.47	***0.94***	0.0063	0.0206	0.0761	0.0023	0.8926	0.0021
26	Rangpur	***3.46***	11.52	27.00	***1.04***	743.35	***1.58***	0.0044	0.0146	0.0343	0.0013	0.9434	0.0020
27	Sandwip	6.35	39.11	36.31	6.74	1455.97	12.54	0.0041	0.0251	0.0233	0.0043	0.9351	0.0081
28	Satkhira	6.47	***4.62***	27.97	***1.65***	1139.31	***3.76***	0.0055	0.0039	0.0236	0.0014	0.9624	0.0032
29	Shitakunda	8.10	8.79	21.26	15.93	725.75	***3.78***	0.0103	0.0112	0.0271	0.0203	0.9262	0.0048
30	Srimangal	6.86	***3.43***	56.79	***4.42***	1440.28	8.08	0.0045	0.0023	0.0374	0.0029	0.9476	0.0053
31	Syadpur	***4.42***	6.71	12.88	***3.58***	1993.07	***0.78***	0.0022	0.0033	0.0064	0.0018	0.9860	0.0004
32	Sylhet	10.56	***4.97***	18.68	***4.26***	1232.38	6.02	0.0083	0.0039	0.0146	0.0033	0.9652	0.0047
33	Tangail	18.34	35.27	19.44	***1.70***	228.74	***4.75***	0.0595	0.1144	0.0631	0.0055	0.7421	0.0154
34	Teknaf	***4.51***	13.59	47.09	17.48	172.81	***4.17***	0.0174	0.0523	0.1814	0.0673	0.6656	0.0161
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.0331	0.8682	1.2494	0.5249	30.1563	0.1681

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B10. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

October

		Scaling					
	Rank	3	5	4	2	6	1
	Comparison	2.27	3.84	3.03	1.50	272.32	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	8.22	6.00	8.22	18.17	2105.20	***4.08***	0.0038	0.0028	0.0038	0.0085	0.9792	0.0019
2	Bhola	7.36	7.38	8.14	8.38	3008.99	***4.27***	0.0024	0.0024	0.0027	0.0028	0.9883	0.0014
3	Bogra	10.51	17.03	7.37	***4.35***	3559.09	***3.30***	0.0029	0.0047	0.0020	0.0012	0.9882	0.0009
4	Chandpur	7.65	8.76	12.32	9.03	3099.23	***5.50***	0.0024	0.0028	0.0039	0.0029	0.9862	0.0017
5	Chittagong	48.24	31.52	16.07	7.85	451.39	***5.90***	0.0860	0.0562	0.0286	0.0140	0.8047	0.0105
6	Chuadanga	***4.70***	10.00	12.45	***1.24***	547.45	***2.44***	0.0081	0.0173	0.0215	0.0021	0.9467	0.0042
7	Comilla	6.32	9.45	19.76	8.00	1884.00	***5.73***	0.0033	0.0049	0.0102	0.0041	0.9745	0.0030
8	Cox's Bazar	***5.63***	***5.78***	13.19	11.68	1069.89	***3.66***	0.0051	0.0052	0.0119	0.0105	0.9640	0.0033
9	Dhaka	***5.51***	***3.59***	11.02	9.42	1829.65	***5.04***	0.0030	0.0019	0.0059	0.0051	0.9815	0.0027
10	Dinajpur	19.45	40.48	19.33	9.65	323.52	6.05	0.0465	0.0967	0.0462	0.0231	0.7731	0.0145
11	Faridpur	10.40	13.24	8.86	***3.00***	3099.65	***4.54***	0.0033	0.0042	0.0028	0.0010	0.9872	0.0014
12	Feni	***2.59***	11.86	6.70	18.98	2512.34	***0.48***	0.0010	0.0046	0.0026	0.0074	0.9841	0.0002
13	Hatiya	***3.89***	***4.97***	17.52	13.88	1250.75	***5.43***	0.0030	0.0038	0.0135	0.0107	0.9648	0.0042
14	Ishurdi	***4.90***	55.66	25.11	10.53	324.13	10.03	0.0114	0.1293	0.0583	0.0245	0.7532	0.0233
15	Jessore	10.93	18.07	11.47	***5.96***	3285.35	***4.38***	0.0033	0.0054	0.0034	0.0018	0.9848	0.0013
16	Khepupara	***1.86***	8.41	10.24	12.56	1427.76	***0.75***	0.0013	0.0058	0.0070	0.0086	0.9769	0.0005
17	Khulna	***3.08***	11.86	6.45	6.25	3102.51	***1.20***	0.0010	0.0038	0.0021	0.0020	0.9908	0.0004
18	Kutubdia	10.11	20.14	23.76	***3.23***	968.63	***5.11***	0.0098	0.0195	0.0230	0.0031	0.9395	0.0050
19	M.Court	19.03	6.69	14.20	8.32	3149.35	11.17	0.0059	0.0021	0.0044	0.0026	0.9815	0.0035
20	Madaripur	10.02	***3.24***	10.42	7.84	2343.54	***5.74***	0.0042	0.0014	0.0044	0.0033	0.9844	0.0024
21	Mongla	9.62	***4.78***	18.92	15.28	840.78	9.02	0.0107	0.0053	0.0211	0.0170	0.9359	0.0100
22	Mymensingh	8.97	***3.93***	12.05	7.49	1318.26	***4.63***	0.0066	0.0029	0.0089	0.0055	0.9727	0.0034
23	Patuakhali	***1.16***	6.15	11.24	***4.52***	1302.07	***1.99***	0.0009	0.0046	0.0085	0.0034	0.9811	0.0015
24	Rajshahi	***3.73***	16.34	7.89	***4.70***	3803.75	***0.61***	0.0010	0.0043	0.0021	0.0012	0.9913	0.0002
25	Rangamati	11.34	21.17	12.25	***0.26***	1995.18	***2.58***	0.0055	0.0104	0.0060	0.0001	0.9767	0.0013
26	Rangpur	8.15	15.31	***5.84***	***5.76***	3501.63	***2.22***	0.0023	0.0043	0.0017	0.0016	0.9895	0.0006
27	Sandwip	15.32	10.59	14.96	***2.91***	3623.32	7.64	0.0042	0.0029	0.0041	0.0008	0.9860	0.0021
28	Satkhira	10.26	16.34	10.71	***4.42***	2723.96	***3.38***	0.0037	0.0059	0.0039	0.0016	0.9837	0.0012
29	Shitakunda	10.38	17.36	7.39	***1.64***	3044.50	***3.30***	0.0034	0.0056	0.0024	0.0005	0.9870	0.0011
30	Srimangal	6.32	13.43	20.02	***2.36***	868.37	***2.10***	0.0069	0.0147	0.0219	0.0026	0.9515	0.0023
31	Syadpur	11.58	8.14	8.60	***5.72***	2395.84	***5.45***	0.0048	0.0033	0.0035	0.0023	0.9838	0.0022
32	Sylhet	9.78	10.48	15.15	***3.42***	1277.36	***5.08***	0.0074	0.0079	0.0115	0.0026	0.9668	0.0038
33	Tangail	11.03	20.27	14.32	***0.94***	2159.61	***5.63***	0.0050	0.0092	0.0065	0.0004	0.9764	0.0025
34	Teknaf	***5.27***	11.52	6.25	***3.70***	2982.90	***3.38***	0.0017	0.0038	0.0021	0.0012	0.9900	0.0011
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.2718	0.4601	0.3624	0.1801	32.6058	0.1197

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B11. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

November

		Scaling					
	Rank	3	4	5	1	6	2
	Comparison	3.31	6.30	8.10	**1.00**	22.05	1.00

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I		Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	41.17	52.21	71.02	***4.79***	206.04	9.79		0.1069	0.1356	0.1845	0.0124	0.5351	0.0254
2	Bhola	18.86	46.69	37.64	***2.71***	210.78	***2.65***		0.0591	0.1462	0.1179	0.0085	0.6601	0.0083
3	Bogra	71.03	88.07	212.80	***2.42***	120.91	10.25		0.1405	0.1742	0.4210	0.0048	0.2392	0.0203
4	Chandpur	17.13	39.10	23.56	***3.72***	139.16	***4.16***		0.0755	0.1724	0.1039	0.0164	0.6135	0.0183
5	Chittagong	24.04	50.14	35.19	***4.08***	360.78	7.83		0.0499	0.1040	0.0730	0.0085	0.7484	0.0162
6	Chuadanga	35.85	28.67	40.15	9.61	46.86	15.66		0.2028	0.1621	0.2271	0.0544	0.2651	0.0885
7	Comilla	11.97	26.00	13.86	22.16	110.38	***2.56***		0.0640	0.1391	0.0742	0.1185	0.5905	0.0137
8	Cox's Bazar	13.97	37.36	14.73	***3.11***	230.58	***1.90***		0.0463	0.1238	0.0488	0.0103	0.7644	0.0063
9	Dhaka	16.03	51.86	35.78	8.24	155.68	7.16		0.0584	0.1888	0.1302	0.0300	0.5666	0.0261
10	Dinajpur	44.30	79.79	225.41	***4.74***	104.57	7.73		0.0950	0.1710	0.4832	0.0102	0.2241	0.0166
11	Faridpur	28.80	33.93	33.98	6.49	117.76	11.31		0.1240	0.1461	0.1463	0.0279	0.5070	0.0487
12	Feni	12.10	40.48	20.78	***4.14***	167.95	***3.01***		0.0487	0.1629	0.0836	0.0167	0.6759	0.0121
13	Hatiya	22.98	50.83	29.00	6.43	196.85	***5.48***		0.0737	0.1631	0.0931	0.0206	0.6318	0.0176
14	Ishurdi	29.27	43.93	35.95	6.03	348.38	10.51		0.0617	0.0927	0.0758	0.0127	0.7348	0.0222
15	Jessore	33.35	59.10	75.44	12.03	139.57	17.86		0.0989	0.1752	0.2236	0.0357	0.4137	0.0529
16	Khepupara	***4.00***	72.21	224.17	***0.97***	366.80	7.89		0.0059	0.1068	0.3316	0.0014	0.5426	0.0117
17	Khulna	28.83	56.69	62.28	***4.34***	154.57	9.44		0.0912	0.1793	0.1970	0.0137	0.4889	0.0299
18	Kutubdia	15.56	44.62	16.29	***2.35***	181.48	***4.97***		0.0586	0.1682	0.0614	0.0089	0.6841	0.0187
19	M.Court	19.49	52.21	32.44	***5.00***	186.73	***5.85***		0.0646	0.1730	0.1075	0.0166	0.6189	0.0194
20	Madaripur	19.71	44.62	30.72	6.09	116.00	9.51		0.0870	0.1969	0.1355	0.0269	0.5118	0.0420
21	Mongla	30.71	31.44	76.71	9.51	110.85	10.40		0.1139	0.1166	0.2845	0.0353	0.4111	0.0386
22	Mymensingh	32.85	63.93	107.94	***2.59***	122.27	11.00		0.0965	0.1877	0.3169	0.0076	0.3590	0.0323
23	Patuakhali	33.90	48.79	56.95	10.69	191.59	8.99		0.0966	0.1390	0.1623	0.0305	0.5460	0.0256
24	Rajshahi	18.87	37.72	30.03	6.22	67.86	***5.68***		0.1134	0.2267	0.1805	0.0374	0.4078	0.0341
25	Rangamati	9.97	32.90	9.60	***2.59***	152.92	***1.68***		0.0476	0.1569	0.0458	0.0123	0.7294	0.0080
26	Rangpur	***3.06***	80.48	15625.01	***5.59***	195.59	19.00		0.0002	0.0051	0.9809	0.0004	0.0123	0.0012
27	Sandwip	36.14	42.44	25.31	***3.67***	205.87	***4.31***		0.1137	0.1336	0.0797	0.0116	0.6479	0.0136
28	Satkhira	31.65	57.03	69.99	***4.28***	160.06	10.12		0.0950	0.1712	0.2101	0.0128	0.4805	0.0304
29	Shitakunda	8.37	29.50	17.23	12.57	178.27	***2.37***		0.0337	0.1188	0.0694	0.0506	0.7180	0.0095
30	Srimangal	11.60	42.00	20.05	***5.79***	139.45	***2.97***		0.0523	0.1893	0.0904	0.0261	0.6286	0.0134
31	Syadpur	24.56	38.14	140.19	***4.39***	50.73	7.38		0.0926	0.1437	0.5282	0.0166	0.1912	0.0278
32	Sylhet	30.59	39.79	46.62	6.99	113.95	11.42		0.1227	0.1596	0.1870	0.0280	0.4570	0.0458
33	Tangail	9.50	27.09	16.38	11.08	92.56	***2.35***		0.0598	0.1704	0.1031	0.0697	0.5823	0.0148
34	Teknaf	11.64	34.97	11.31	***5.65***	213.44	***1.71***		0.0418	0.1255	0.0406	0.0203	0.7658	0.0061
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		2.6923	5.1257	6.5984	0.8142	17.9533	0.8161

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B12. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

December

		Scaling					
	Rank	3	4	6	1	5	2
	Comparison	6.81	8.56	46.61	**1.00**	13.30	1.36

	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	26.69	56.69	82.98	8.41	46.79	7.57	0.1165	0.2474	0.3622	0.0367	0.2042	0.0330
2	Bhola	20.31	64.28	54.80	9.96	65.82	6.27	0.0917	0.2903	0.2475	0.0450	0.2972	0.0283
3	Bogra	10.32	79.79	4395.37	8.00	182.73	10.16	0.0022	0.0170	0.9379	0.0017	0.0390	0.0022
4	Chandpur	59.31	71.86	234.24	6.16	64.36	14.32	0.1317	0.1596	0.5202	0.0137	0.1429	0.0318
5	Chittagong	29.01	67.71	201.30	6.51	442.99	***5.21***	0.0385	0.0900	0.2674	0.0086	0.5885	0.0069
6	Chuadanga	246.43	50.67	9848.97	***1.78***	93.81	14.15	0.0240	0.0049	0.9603	0.0002	0.0091	0.0014
7	Comilla	***2.70***	80.48	59624.30	9.75	207.63	15.83	0.0000	0.0013	0.9947	0.0002	0.0035	0.0003
8	Cox's Bazar	***3.96***	72.07	664.54	6.59	170.38	10.91	0.0043	0.0776	0.7158	0.0071	0.1835	0.0117
9	Dhaka	***3.50***	80.48	3234.43	8.65	180.40	15.00	0.0010	0.0228	0.9182	0.0025	0.0512	0.0043
10	Dinajpur	27.85	58.07	45.05	***2.67***	469.33	11.96	0.0453	0.0944	0.0733	0.0043	0.7632	0.0195
11	Faridpur	15.00	97.03	4580.80	***5.81***	179.58	14.22	0.0031	0.0198	0.9363	0.0012	0.0367	0.0029
12	Feni	44.36	58.07	172.87	***4.19***	81.41	10.06	0.1196	0.1565	0.4660	0.0113	0.2195	0.0271
13	Hatiya	82.55	65.66	403.05	***5.19***	123.18	14.33	0.1190	0.0946	0.5808	0.0075	0.1775	0.0207
14	Ishurdi	186.20	79.79	2200.54	***3.71***	132.39	7.50	0.0713	0.0306	0.8431	0.0014	0.0507	0.0029
15	Jessore	8.04	97.03	8823.70	***3.73***	209.03	12.67	0.0009	0.0106	0.9639	0.0004	0.0228	0.0014
16	Khepupara	26.04	53.79	57.73	8.60	54.35	8.46	0.1246	0.2574	0.2763	0.0411	0.2601	0.0405
17	Khulna	360.42	79.79	1459.42	***3.77***	154.01	9.16	0.1744	0.0386	0.7062	0.0018	0.0745	0.0044
18	Kutubdia	140.94	72.21	386.58	8.73	115.97	6.47	0.1928	0.0988	0.5289	0.0120	0.1587	0.0089
19	M.Court	26.65	64.28	79.16	***5.71***	68.20	***4.53***	0.1072	0.2586	0.3185	0.0230	0.2744	0.0182
20	Madaripur	188.50	79.79	1729.59	***5.10***	79.11	8.62	0.0902	0.0382	0.8273	0.0024	0.0378	0.0041
21	Mongla	64.94	53.67	3832.11	***2.07***	40.09	9.12	0.0162	0.0134	0.9575	0.0005	0.0100	0.0023
22	Mymensingh	263.32	88.41	1787.05	***2.74***	131.51	23.36	0.1147	0.0385	0.7782	0.0012	0.0573	0.0102
23	Patuakhali	25.00	67.71	84.06	***2.85***	49.24	***5.52***	0.1067	0.2889	0.3586	0.0122	0.2101	0.0235
24	Rajshahi	87.24	80.14	2209.37	***2.02***	190.11	16.10	0.0337	0.0310	0.8547	0.0008	0.0735	0.0062
25	Rangamati	351.25	79.79	415.12	***5.29***	157.38	10.01	0.3448	0.0783	0.4074	0.0052	0.1545	0.0098
26	Rangpur	19.36	53.59	47.92	10.92	63.59	10.56	0.0940	0.2602	0.2327	0.0530	0.3088	0.0513
27	Sandwip	32.68	47.36	81.42	14.74	59.82	8.83	0.1335	0.1934	0.3325	0.0602	0.2443	0.0360
28	Satkhira	***5.45***	97.03	235895.61	6.48	187.86	16.12	0.0000	0.0004	0.9987	0.0000	0.0008	0.0001
29	Shitakunda	25.80	71.86	117.43	8.44	73.88	8.28	0.0844	0.2351	0.3842	0.0276	0.2417	0.0271
30	Srimangal	***4.05***	84.50	32514.48	***5.50***	237.17	13.83	0.0001	0.0026	0.9895	0.0002	0.0072	0.0004
31	Syadpur	34.86	25.29	46.38	***3.75***	19.68	15.28	0.2400	0.1741	0.3193	0.0258	0.1355	0.1052
32	Sylhet	42.19	58.07	123.98	***1.13***	95.03	10.01	0.1277	0.1757	0.3752	0.0034	0.2876	0.0303
33	Tangail	48.29	46.18	289.03	6.14	116.91	***4.96***	0.0944	0.0903	0.5651	0.0120	0.2285	0.0097
34	Teknaf	51.41	61.64	159.20	***5.31***	103.51	***4.69***	0.1333	0.1598	0.4127	0.0138	0.2683	0.0122
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	2.9818	3.7510	20.4112	0.4380	5.8234	0.5947

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B13. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

Annual

								Scaling					
								Rank	1	3	4	2	6	5
								Comparison	**1.00**	4.59	26.91	2.35	161.07	34.33
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***1.95***	14.97	106.82	***3.76***	267.74	***1.37***		0.0049	0.0377	0.2693	0.0095	0.6751	0.0035
2	Bhola	6.20	***3.24***	86.11	***2.50***	1001.74	7.04		0.0056	0.0029	0.0778	0.0023	0.9051	0.0064
3	Bogra	***1.49***	7.36	48.22	***0.94***	902.32	***3.70***		0.0015	0.0076	0.0500	0.0010	0.9360	0.0038
4	Chandpur	7.27	16.69	49.60	***4.19***	659.08	***2.59***		0.0098	0.0226	0.0671	0.0057	0.8913	0.0035
5	Chittagong	11.30	18.41	104.56	9.65	1138.16	***3.95***		0.0088	0.0143	0.0813	0.0075	0.8850	0.0031
6	Chuadanga	***1.31***	7.13	54.55	6.89	128.58	9.10		0.0063	0.0343	0.2628	0.0332	0.6195	0.0438
7	Comilla	***2.52***	17.03	97.98	6.35	293.07	41.11		0.0055	0.0372	0.2139	0.0139	0.6398	0.0897
8	Cox's Bazar	19.57	22.21	93.74	74.71	452.08	39097.77		0.0005	0.0006	0.0024	0.0019	0.0114	0.9833
9	Dhaka	***1.58***	20.48	81.45	***0.72***	1919.11	***0.47***		0.0008	0.0101	0.0402	0.0004	0.9483	0.0002
10	Dinajpur	***1.25***	7.38	62.63	***3.63***	404.60	***5.83***		0.0026	0.0152	0.1290	0.0075	0.8337	0.0120
11	Faridpur	***3.08***	23.24	103.15	***3.71***	388.77	6.19		0.0058	0.0440	0.1953	0.0070	0.7361	0.0117
12	Feni	***2.54***	***3.59***	53.64	***4.39***	546.02	9.69		0.0041	0.0058	0.0865	0.0071	0.8809	0.0156
13	Hatiya	30.79	28.07	90.05	148.33	443.53	4.55E+11		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
14	Ishurdi	***4.17***	14.28	84.15	***1.03***	1620.67	***5.80***		0.0024	0.0083	0.0486	0.0006	0.9368	0.0033
15	Jessore	***0.84***	11.52	73.36	***2.60***	526.00	***3.40***		0.0014	0.0186	0.1188	0.0042	0.8515	0.0055
16	Khepupara	***1.94***	13.59	93.72	***3.35***	272.35	11.37		0.0049	0.0343	0.2365	0.0085	0.6872	0.0287
17	Khulna	***1.18***	10.83	81.71	***4.12***	556.01	8.38		0.0018	0.0164	0.1234	0.0062	0.8396	0.0127
18	Kutubdia	10.33	38.41	84.32	123.92	1110.13	217462.90		0.0000	0.0002	0.0004	0.0006	0.0051	0.9938
19	M.Court	***3.54***	22.90	113.44	7.71	402.19	***2.01***		0.0064	0.0415	0.2056	0.0140	0.7289	0.0036
20	Madaripur	***2.04***	11.52	91.48	***5.49***	287.62	45.37		0.0046	0.0260	0.2063	0.0124	0.6485	0.1023
21	Mongla	***0.91***	8.67	46.85	***2.52***	901.39	***1.78***		0.0009	0.0090	0.0487	0.0026	0.9369	0.0018
22	Mymensingh	6.28	***4.62***	68.71	***2.90***	726.03	***4.54***		0.0077	0.0057	0.0845	0.0036	0.8929	0.0056
23	Patuakhali	***4.82***	21.29	89.89	6.98	413.24	***3.47***		0.0089	0.0394	0.1666	0.0129	0.7657	0.0064
24	Rajshahi	***2.80***	25.54	81.65	***2.22***	254.18	42.95		0.0068	0.0624	0.1995	0.0054	0.6210	0.1049
25	Rangamati	***2.16***	13.24	63.88	***5.89***	340.65	***4.97***		0.0050	0.0307	0.1483	0.0137	0.7908	0.0115
26	Rangpur	***3.41***	16.34	61.79	***2.22***	3708.80	***0.87***		0.0009	0.0043	0.0163	0.0006	0.9777	0.0002
27	Sandwip	8.58	26.64	86.18	***1.16***	1318.77	***2.93***		0.0059	0.0184	0.0597	0.0008	0.9131	0.0020
28	Satkhira	***2.10***	21.17	143.70	***4.33***	148.01	***3.06***		0.0065	0.0657	0.4458	0.0134	0.4591	0.0095
29	Shitakunda	***2.10***	19.79	73.76	58.21	393.41	416.23		0.0022	0.0205	0.0766	0.0604	0.4083	0.4320
30	Srimangal	***5.73***	15.57	78.86	32.18	292.72	77.22		0.0114	0.0310	0.1570	0.0641	0.5828	0.1537
31	Syadpur	***2.21***	***1.00***	18.27	6.38	273.16	***2.76***		0.0073	0.0033	0.0602	0.0210	0.8992	0.0091
32	Sylhet	9.07	11.52	107.72	6.57	1716.34	8.14		0.0049	0.0062	0.0579	0.0035	0.9231	0.0044
33	Tangail	***2.51***	7.09	69.60	***2.22***	1755.80	***2.84***		0.0014	0.0039	0.0378	0.0012	0.9542	0.0015
34	Teknaf	14.63	28.07	113.75	96.94	390.52	1.56E+08		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.1477	0.6781	3.9740	0.3463	23.7844	5.0694

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B14. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

Yearly Maximum Monthly

		Scaling					
	Rank	2	3	4	1	6	5
	Comparison	1.03	2.07	5.73	**1.00**	79.64	7.45

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	17.11	27.03	71.23	***4.89***	1405.79	7.41	0.0112	0.0176	0.0464	0.0032	0.9167	0.0048
2	Bhola	***5.89***	12.90	49.64	7.37	845.54	***1.64***	0.0064	0.0140	0.0538	0.0080	0.9161	0.0018
3	Bogra	6.66	14.28	52.02	***1.89***	1345.05	***3.31***	0.0047	0.0100	0.0365	0.0013	0.9451	0.0023
4	Chandpur	34.66	40.48	45.69	***4.74***	270.08	6.86	0.0861	0.1006	0.1135	0.0118	0.6710	0.0171
5	Chittagong	***2.77***	9.45	53.57	***3.30***	2323.93	***1.11***	0.0012	0.0039	0.0224	0.0014	0.9707	0.0005
6	Chuadanga	7.78	12.13	32.54	***5.52***	243.35	***2.93***	0.0256	0.0399	0.1069	0.0181	0.7999	0.0096
7	Comilla	***3.45***	9.79	50.11	***1.11***	1223.33	***1.79***	0.0027	0.0076	0.0389	0.0009	0.9486	0.0014
8	Cox's Bazar	***4.81***	26.00	70.63	11.16	340.21	285.41	0.0065	0.0352	0.0957	0.0151	0.4609	0.3866
9	Dhaka	***1.85***	8.07	50.61	***4.22***	927.43	***3.24***	0.0019	0.0081	0.0508	0.0042	0.9317	0.0033
10	Dinajpur	8.84	18.07	43.37	***0.67***	972.73	***3.29***	0.0084	0.0173	0.0414	0.0006	0.9291	0.0031
11	Faridpur	11.07	10.14	41.26	***4.42***	2598.52	***5.21***	0.0041	0.0038	0.0155	0.0017	0.9730	0.0020
12	Feni	***1.69***	12.90	68.77	***1.40***	463.69	9.35	0.0030	0.0231	0.1233	0.0025	0.8313	0.0168
13	Hatiya	11.28	36.00	77.22	8.37	272.96	2298.04	0.0042	0.0133	0.0286	0.0031	0.1010	0.8499
14	Ishurdi	***4.33***	***5.31***	38.98	***1.29***	1354.35	***3.60***	0.0031	0.0038	0.0277	0.0009	0.9620	0.0026
15	Jessore	6.90	14.28	35.33	7.78	1371.33	***2.19***	0.0048	0.0099	0.0246	0.0054	0.9538	0.0015
16	Khepupara	6.13	***3.24***	69.78	***2.75***	529.69	***3.35***	0.0100	0.0053	0.1135	0.0045	0.8614	0.0054
17	Khulna	13.20	20.14	58.52	***0.62***	596.88	8.23	0.0189	0.0289	0.0839	0.0009	0.8556	0.0118
18	Kutubdia	9.10	25.15	32.36	45.32	332.70	***1.10***	0.0204	0.0564	0.0726	0.1017	0.7464	0.0025
19	M.Court	6.51	12.21	52.41	7.71	1710.06	***2.77***	0.0036	0.0068	0.0293	0.0043	0.9544	0.0015
20	Madaripur	***3.13***	20.48	62.29	***1.98***	555.79	***4.52***	0.0048	0.0316	0.0961	0.0031	0.8574	0.0070
21	Mongla	8.66	14.78	39.31	***2.32***	124.46	***3.29***	0.0449	0.0766	0.2039	0.0120	0.6455	0.0170
22	Mymensingh	***5.31***	***1.86***	36.96	***3.98***	4055.17	***5.21***	0.0013	0.0005	0.0090	0.0010	0.9870	0.0013
23	Patuakhali	***3.75***	***3.43***	52.13	***4.83***	2036.06	7.01	0.0018	0.0016	0.0247	0.0023	0.9662	0.0033
24	Rajshahi	***4.02***	8.41	33.24	***4.02***	2006.68	***2.30***	0.0020	0.0041	0.0161	0.0020	0.9747	0.0011
25	Rangamati	7.26	***2.55***	37.42	***4.69***	852.59	6.57	0.0080	0.0028	0.0411	0.0052	0.9358	0.0072
26	Rangpur	14.61	23.59	55.39	6.83	293.83	***4.85***	0.0366	0.0591	0.1388	0.0171	0.7362	0.0121
27	Sandwip	***5.03***	43.79	35.47	***2.76***	457.09	8.14	0.0091	0.0793	0.0642	0.0050	0.8277	0.0147
28	Satkhira	***1.91***	8.76	61.18	***3.62***	1087.12	***1.94***	0.0016	0.0075	0.0525	0.0031	0.9335	0.0017
29	Shitakunda	***2.03***	18.76	49.37	46.15	297.98	102.36	0.0039	0.0363	0.0956	0.0893	0.5768	0.1981
30	Srimangal	***4.45***	17.00	42.02	***0.98***	2258.38	***0.87***	0.0019	0.0073	0.0181	0.0004	0.9719	0.0004
31	Syadpur	***3.74***	***1.00***	22.18	***5.47***	311.39	6.44	0.0107	0.0029	0.0633	0.0156	0.8891	0.0184
32	Sylhet	***4.13***	***1.17***	60.13	***4.80***	1166.37	6.08	0.0033	0.0009	0.0484	0.0039	0.9386	0.0049
33	Tangail	13.86	20.27	28.22	***3.02***	2190.20	***3.77***	0.0061	0.0090	0.0125	0.0013	0.9694	0.0017
34	Teknaf	20.45	35.66	99.40	25.03	294.33	2.12E+09	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3628	0.7250	2.0095	0.3508	27.9385	2.6134

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B15. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

Yearly Average Daily

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	3.49	20.02	1.44	36.81	16.63

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***2.46***	10.83	90.29	***2.39***	251.88	6.03	0.0068	0.0298	0.2481	0.0066	0.6922	0.0166
2	Bhola	***4.28***	***2.55***	79.16	***0.97***	680.22	***5.66***	0.0055	0.0033	0.1024	0.0013	0.8802	0.0073
3	Bogra	***4.02***	26.69	67.62	***2.14***	115.05	766.96	0.0041	0.0272	0.0688	0.0022	0.1171	0.7806
4	Chandpur	15.84	21.86	63.66	***2.84***	109.80	***5.52***	0.0721	0.0996	0.2900	0.0129	0.5002	0.0252
5	Chittagong	9.65	28.76	110.89	11.26	76.20	***1.82***	0.0404	0.1205	0.4648	0.0472	0.3194	0.0076
6	Chuadanga	***4.57***	8.38	66.21	6.83	187.87	25.17	0.0153	0.0280	0.2214	0.0228	0.6283	0.0842
7	Comilla	***1.51***	17.72	97.60	6.19	170.58	***4.89***	0.0051	0.0594	0.3270	0.0207	0.5715	0.0164
8	Cox's Bazar	18.97	20.14	95.74	101.04	282.19	19316.39	0.0010	0.0010	0.0048	0.0051	0.0142	0.9739
9	Dhaka	***3.52***	26.00	78.80	***0.57***	123.76	229.58	0.0076	0.0562	0.1705	0.0012	0.2677	0.4967
10	Dinajpur	***1.60***	10.48	68.06	***5.22***	721.45	***3.87***	0.0020	0.0129	0.0839	0.0064	0.8899	0.0048
11	Faridpur	7.18	20.83	111.27	17.07	86.84	13.09	0.0280	0.0813	0.4342	0.0666	0.3389	0.0511
12	Feni	***0.79***	13.93	67.75	***4.98***	275.98	9.81	0.0021	0.0373	0.1815	0.0133	0.7394	0.0263
13	Hatiya	23.94	37.03	104.31	144.53	132.43	2.12E+10	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
14	Ishurdi	***1.63***	***5.66***	73.70	***1.42***	38.81	***1.88***	0.0132	0.0459	0.5987	0.0115	0.3153	0.0153
15	Jessore	***0.98***	7.38	77.08	***1.32***	80.51	***4.94***	0.0057	0.0428	0.4476	0.0077	0.4675	0.0287
16	Khepupara	***4.75***	7.38	109.80	***1.64***	122.96	***3.31***	0.0190	0.0295	0.4395	0.0066	0.4922	0.0132
17	Khulna	***3.53***	22.21	79.02	***4.44***	60.29	***1.56***	0.0207	0.1298	0.4620	0.0260	0.3525	0.0091
18	Kutubdia	10.61	33.24	75.77	130.11	134.71	710987.83	0.0000	0.0000	0.0001	0.0002	0.0002	0.9995
19	M.Court	***4.85***	23.59	115.62	***2.02***	103.10	***2.67***	0.0192	0.0937	0.4591	0.0080	0.4094	0.0106
20	Madaripur	***1.55***	14.97	101.57	***0.00***	224.85	10.58	0.0044	0.0423	0.2873	0.0000	0.6360	0.0299
21	Mongla	***3.60***	13.11	65.55	***1.01***	24.65	***0.91***	0.0331	0.1205	0.6024	0.0092	0.2265	0.0084
22	Mymensingh	6.59	9.10	71.27	7.30	1014.22	16.39	0.0059	0.0081	0.0634	0.0065	0.9016	0.0146
23	Patuakhali	9.39	50.83	95.06	***5.72***	142.86	2071.33	0.0040	0.0214	0.0400	0.0024	0.0601	0.8721
24	Rajshahi	8.28	16.34	54.43	***1.48***	491.76	26.05	0.0138	0.0273	0.0910	0.0025	0.8219	0.0435
25	Rangamati	***1.04***	9.45	56.32	***3.11***	960.00	7.03	0.0010	0.0091	0.0543	0.0030	0.9258	0.0068
26	Rangpur	***2.62***	19.79	70.63	***0.96***	274.27	***0.76***	0.0071	0.0536	0.1914	0.0026	0.7432	0.0021
27	Sandwip	***4.70***	32.90	72.33	***1.43***	203.35	202.52	0.0091	0.0636	0.1398	0.0028	0.3931	0.3915
28	Satkhira	***2.12***	6.69	149.37	***4.30***	7.37	***3.19***	0.0123	0.0387	0.8632	0.0249	0.0426	0.0184
29	Shitakunda	***4.01***	26.00	76.42	95.68	429.08	55.92	0.0058	0.0378	0.1112	0.1392	0.6245	0.0814
30	Srimangal	***4.20***	12.00	74.67	57.05	344.19	25.48	0.0081	0.0232	0.1443	0.1102	0.6650	0.0492
31	Syadpur	***3.24***	***1.00***	20.40	6.06	764.00	***3.05***	0.0041	0.0013	0.0256	0.0076	0.9577	0.0038
32	Sylhet	9.07	11.52	107.72	***0.95***	139.97	8.14	0.0327	0.0415	0.3884	0.0034	0.5046	0.0293
33	Tangail	***2.51***	13.91	74.61	***4.76***	34.77	***0.76***	0.0191	0.1059	0.5681	0.0363	0.2648	0.0058
34	Teknaf	6.92	22.90	118.05	147.86	120.46	227812.96	0.0000	0.0001	0.0005	0.0006	0.0005	0.9982
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.4283	1.4928	8.5753	0.6177	15.7640	7.1219

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B16. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

Yearly Average Daily

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.70	18.53	1.29	23.45	10.98

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***2.46***	10.83	90.29	***2.39***	251.88	6.03	0.0068	0.0298	0.2481	0.0066	0.6922	0.0166
2	Bhola	778.60	116.00	1.09E+10	***0.64***	348.67	***0.00***	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
3	Bogra	***4.63***	21.86	68.15	***0.78***	20.71	3134.64	0.0014	0.0067	0.0210	0.0002	0.0064	0.9643
4	Chandpur	7.61	15.66	62.95	***1.31***	27.15	***2.78***	0.0648	0.1333	0.5360	0.0111	0.2311	0.0237
5	Chittagong	9.65	28.76	110.89	11.26	76.20	***1.82***	0.0404	0.1205	0.4648	0.0472	0.3194	0.0076
6	Chuadanga	***4.57***	8.38	66.21	6.82	187.87	25.13	0.0153	0.0280	0.2215	0.0228	0.6284	0.0840
7	Comilla	***5.75***	16.00	107.70	7.76	85.97	34.15	0.0223	0.0622	0.4185	0.0301	0.3341	0.1327
8	Cox's Bazar	18.97	20.14	95.74	101.04	282.19	19316.39	0.0010	0.0010	0.0048	0.0051	0.0142	0.9739
9	Dhaka	***3.52***	26.00	78.80	***0.57***	123.76	229.58	0.0076	0.0562	0.1705	0.0012	0.2677	0.4967
10	Dinajpur	***2.44***	13.59	81.85	***4.10***	55.87	***2.87***	0.0152	0.0845	0.5093	0.0255	0.3476	0.0179
11	Faridpur	***5.31***	6.34	79.93	17.07	136.18	8.86	0.0209	0.0250	0.3151	0.0673	0.5368	0.0349
12	Feni	***0.79***	13.93	67.75	***4.98***	275.98	9.81	0.0021	0.0373	0.1815	0.0133	0.7394	0.0263
13	Hatiya	23.94	37.03	104.31	144.53	132.43	2.12E+10	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
14	Ishurdi	***1.63***	***5.66***	73.70	***1.42***	38.81	***1.88***	0.0132	0.0459	0.5987	0.0115	0.3153	0.0153
15	Jessore	***1.62***	6.34	77.48	***0.40***	79.63	***5.75***	0.0095	0.0371	0.4525	0.0023	0.4651	0.0336
16	Khepupara	***4.75***	7.38	109.80	***1.64***	122.96	***3.31***	0.0190	0.0295	0.4395	0.0066	0.4922	0.0132
17	Khulna	***3.03***	11.17	75.96	***4.44***	160.26	8.73	0.0115	0.0424	0.2882	0.0169	0.6080	0.0331
18	Kutubdia	10.61	33.24	75.77	130.11	134.71	710987.83	0.0000	0.0000	0.0001	0.0002	0.0002	0.9995
19	M.Court	***4.85***	23.59	115.62	***2.02***	103.10	***2.67***	0.0192	0.0937	0.4591	0.0080	0.4094	0.0106
20	Madaripur	***2.55***	14.28	109.52	11.92	98.44	13.31	0.0102	0.0571	0.4381	0.0477	0.3938	0.0532
21	Mongla	***3.60***	13.11	65.55	***1.01***	24.65	***0.91***	0.0331	0.1205	0.6024	0.0092	0.2265	0.0084
22	Mymensingh	***2.02***	6.00	61.98	***5.75***	36.51	***1.38***	0.0178	0.0528	0.5454	0.0506	0.3213	0.0122
23	Patuakhali	34.95	39.14	132.41	***5.60***	54.27	7.59	0.1276	0.1429	0.4833	0.0205	0.1981	0.0277
24	Rajshahi	8.28	16.34	54.43	***1.48***	491.76	26.05	0.0138	0.0273	0.0910	0.0025	0.8219	0.0435
25	Rangamati	***1.04***	9.45	56.32	***3.11***	960.00	7.03	0.0010	0.0091	0.0543	0.0030	0.9258	0.0068
26	Rangpur	***2.62***	19.79	70.63	***0.96***	274.27	***0.76***	0.0071	0.0536	0.1914	0.0026	0.7432	0.0021
27	Sandwip	9.95	28.43	82.84	***1.20***	427.88	***2.97***	0.0180	0.0514	0.1497	0.0022	0.7734	0.0054
28	Satkhira	***1.87***	6.69	146.87	***2.44***	286.48	***3.29***	0.0042	0.0149	0.3281	0.0054	0.6400	0.0074
29	Shitakunda	***4.01***	26.00	76.42	95.68	429.08	55.92	0.0058	0.0378	0.1112	0.1392	0.6245	0.0814
30	Srimangal	***2.41***	14.50	69.46	23.18	26.64	47.04	0.0132	0.0791	0.3791	0.1265	0.1454	0.2567
31	Syadpur	***3.24***	***1.00***	20.40	6.06	764.00	***3.05***	0.0041	0.0013	0.0256	0.0076	0.9577	0.0038
32	Sylhet	***5.37***	6.69	110.28	7.41	39.83	***5.79***	0.0306	0.0381	0.6289	0.0422	0.2271	0.0330
33	Tangail	***3.39***	7.09	57.86	***1.85***	40.13	***4.30***	0.0295	0.0619	0.5048	0.0162	0.3501	0.0375
34	Teknaf	***4.99***	22.90	99.78	84.76	14.55	10265.37	0.0005	0.0022	0.0095	0.0081	0.0014	0.9784
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.5867	1.5833	10.8718	0.7595	13.7575	6.4412

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B17. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

Yearly Maximum Daily

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
Scaling							
Rank		4	3	5	1	6	2
Comparison		2.73	2.54	4.87	**1.00**	34.66	1.08
		Normal	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***2.71***	10.80	28.16	***1.94***	838.88	***1.62***
2	Bhola	***2.05***	13.20	43.68	***3.89***	132.29	***0.73***
3	Bogra	9.24	16.40	33.13	11.07	226.23	9.10
4	Chandpur	12.56	8.50	15.10	***3.87***	3608.90	6.80
5	Chittagong	12.90	17.20	25.68	***1.21***	436.35	***2.16***
6	Chuadanga	6.82	9.63	18.05	***1.17***	73.28	***2.67***
7	Comilla	67.13	22.00	20.58	11.16	140.05	***5.14***
8	Cox's Bazar	***2.44***	23.60	72.72	13.18	115.68	46.56
9	Dhaka	41.91	29.20	38.61	8.42	98.69	6.76
10	Dinajpur	25.13	19.75	13.40	***4.27***	376.43	***4.70***
11	Faridpur	42.84	23.50	19.35	7.47	116.49	***4.64***
12	Feni	***4.01***	16.00	48.11	***2.10***	283.69	15.04
13	Hatiya	14.26	14.50	28.80	***1.87***	128.91	***3.13***
14	Ishurdi	***3.82***	***4.00***	86.98	***3.67***	25.43	***2.59***
15	Jessore	13.92	11.20	22.29	***5.25***	693.30	6.86
16	Khepupara	***5.82***	14.00	22.71	***4.13***	2484.52	***4.10***
17	Khulna	40.38	44.00	28.62	***2.41***	133.99	6.91
18	Kutubdia	9.61	23.52	32.60	10.57	138.39	***3.04***
19	M.Court	11.15	22.80	26.64	***2.94***	1338.67	***4.81***
20	Madaripur	***3.55***	12.40	27.10	***2.56***	337.77	***0.71***
21	Mongla	***0.95***	***3.86***	17.05	***2.61***	495.83	***0.95***
22	Mymensingh	8.18	65.20	33.92	34.22	238.67	15.59
23	Patuakhali	***1.76***	9.75	25.71	***4.27***	492.17	***1.44***
24	Rajshahi	***5.73***	12.80	21.02	***4.94***	185.92	***2.86***
25	Rangamati	7.33	***4.80***	24.16	***3.79***	834.92	***5.17***
26	Rangpur	342.69	33.20	26.03	***5.58***	201.80	9.25
27	Sandwip	12.36	28.40	27.15	***4.11***	139.12	***2.67***
28	Satkhira	8.71	17.60	20.42	***5.64***	225.16	***1.45***
29	Shitakunda	***1.16***	11.60	33.52	18.90	131.87	37.37
30	Srimangal	11.21	14.80	27.14	***1.09***	784.99	***5.11***
31	Syadpur	***2.29***	***2.43***	15.11	***2.51***	152.26	***0.95***
32	Sylhet	***2.13***	8.80	34.21	***3.62***	1808.79	***2.40***
33	Tangail	12.19	9.22	19.64	***4.07***	201.49	6.24
34	Teknaf	***0.64***	7.20	43.42	42.57	463.48	24.31
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99
		1.9783	1.8442	3.5330	0.7251	25.1345	0.7849

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B18. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

Total Pre-Monsoon(March-June)

	Scaling					
Rank	3	4	5	2	6	1
Comparison	1.72	3.06	7.05	1.31	137.25	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	12.22	11.86	20.41	***2.49***	1589.21	***5.51***	0.0074	0.0072	0.0124	0.0015	0.9680	0.0034
2	Bhola	***5.12***	19.79	26.10	10.54	519.14	***2.17***	0.0088	0.0340	0.0448	0.0181	0.8907	0.0037
3	Bogra	***1.09***	6.69	29.04	9.82	881.90	***2.52***	0.0012	0.0072	0.0312	0.0105	0.9472	0.0027
4	Chandpur	31.91	30.48	28.90	***3.85***	2190.71	11.61	0.0139	0.0133	0.0126	0.0017	0.9535	0.0051
5	Chittagong	***4.22***	***4.28***	12.05	28.01	1356.88	***2.75***	0.0030	0.0030	0.0086	0.0199	0.9636	0.0020
6	Chuadanga	11.79	***4.63***	17.20	***3.24***	1121.46	6.47	0.0101	0.0040	0.0148	0.0028	0.9628	0.0056
7	Comilla	***4.32***	6.00	29.05	***1.50***	302.82	6.25	0.0123	0.0171	0.0830	0.0043	0.8654	0.0179
8	Cox's Bazar	***2.38***	12.21	19.12	***5.51***	1137.64	***0.63***	0.0020	0.0104	0.0162	0.0047	0.9662	0.0005
9	Dhaka	13.63	10.83	40.73	7.63	575.31	7.44	0.0208	0.0165	0.0621	0.0116	0.8776	0.0114
10	Dinajpur	6.86	18.41	28.29	***3.04***	1303.32	***3.85***	0.0050	0.0135	0.0207	0.0022	0.9557	0.0028
11	Faridpur	***1.42***	8.41	25.67	***5.89***	547.13	***0.81***	0.0024	0.0143	0.0436	0.0100	0.9284	0.0014
12	Feni	***2.38***	***5.31***	20.00	***5.25***	1222.82	***1.10***	0.0019	0.0042	0.0159	0.0042	0.9729	0.0009
13	Hatiya	***1.22***	9.45	24.56	***2.45***	1286.36	***1.32***	0.0009	0.0071	0.0185	0.0019	0.9706	0.0010
14	Ishurdi	***3.56***	14.97	16.56	***2.03***	3450.87	***0.74***	0.0010	0.0043	0.0047	0.0006	0.9891	0.0002
15	Jessore	12.38	23.59	50.43	***3.74***	244.98	***5.04***	0.0364	0.0693	0.1482	0.0110	0.7202	0.0148
16	Khepupara	***5.21***	7.72	35.30	***4.06***	1394.81	***4.01***	0.0036	0.0053	0.0243	0.0028	0.9612	0.0028
17	Khulna	7.78	26.69	37.26	***0.80***	207.17	***2.16***	0.0276	0.0947	0.1322	0.0028	0.7350	0.0077
18	Kutubdia	6.44	8.07	24.22	***3.35***	1290.28	6.62	0.0048	0.0060	0.0181	0.0025	0.9636	0.0049
19	M.Court	***0.86***	8.41	39.34	***2.28***	569.32	***2.36***	0.0014	0.0135	0.0632	0.0037	0.9145	0.0038
20	Madaripur	***5.84***	***3.59***	19.61	***5.72***	1728.73	6.38	0.0033	0.0020	0.0111	0.0032	0.9768	0.0036
21	Mongla	8.85	***1.44***	19.95	***4.56***	636.55	6.42	0.0131	0.0021	0.0294	0.0067	0.9392	0.0095
22	Mymensingh	***3.94***	9.10	33.95	***2.54***	282.96	***3.29***	0.0117	0.0271	0.1011	0.0076	0.8427	0.0098
23	Patuakhali	18.63	37.36	37.92	***3.50***	661.98	***5.33***	0.0244	0.0489	0.0496	0.0046	0.8656	0.0070
24	Rajshahi	8.66	25.66	28.67	***2.25***	183.78	***1.73***	0.0345	0.1023	0.1143	0.0090	0.7329	0.0069
25	Rangamati	***2.24***	***3.59***	17.37	12.45	924.94	***3.09***	0.0023	0.0037	0.0180	0.0129	0.9598	0.0032
26	Rangpur	10.52	10.48	40.32	6.01	257.61	***4.87***	0.0319	0.0318	0.1223	0.0182	0.7811	0.0148
27	Sandwip	***2.47***	***5.93***	18.18	***4.70***	872.43	***3.84***	0.0027	0.0065	0.0200	0.0052	0.9613	0.0042
28	Satkhira	6.53	16.34	37.87	***2.68***	853.76	***2.77***	0.0071	0.0178	0.0412	0.0029	0.9280	0.0030
29	Shitakunda	***3.96***	19.45	36.28	***4.67***	419.43	***2.94***	0.0081	0.0400	0.0745	0.0096	0.8617	0.0060
30	Srimangal	12.08	14.86	29.36	19.03	292.26	***5.03***	0.0324	0.0399	0.0788	0.0511	0.7843	0.0135
31	Syadpur	8.91	***2.43***	16.96	7.16	287.74	8.48	0.0269	0.0073	0.0511	0.0216	0.8675	0.0256
32	Sylhet	***2.42***	***2.55***	37.65	7.92	772.92	***5.01***	0.0029	0.0031	0.0454	0.0096	0.9329	0.0060
33	Tangail	17.51	***3.91***	41.67	11.98	831.70	16.24	0.0190	0.0042	0.0451	0.0130	0.9011	0.0176
34	Teknaf	***4.48***	14.28	14.54	***4.14***	2248.59	***3.28***	0.0020	0.0062	0.0064	0.0018	0.9822	0.0014
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3869	0.6879	1.5837	0.2937	30.8232	0.2246

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B19. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

Total monsoon (Jul-Oct)

								Scaling					
								Rank	1	3	4	2	6	5
								Comparison	**1.00**	4.60	21.40	1.25	140.37	38.84
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***2.35***	9.10	76.69	***1.12***	550.08	6.41		0.0036	0.0141	0.1188	0.0017	0.8518	0.0099
2	Bhola	***0.50***	8.07	63.86	***1.63***	945.18	***2.03***		0.0005	0.0079	0.0625	0.0016	0.9255	0.0020
3	Bogra	***1.73***	14.28	53.30	***0.23***	298.78	***2.77***		0.0047	0.0385	0.1436	0.0006	0.8051	0.0075
4	Chandpur	9.33	31.17	55.67	***2.09***	497.74	***1.64***		0.0156	0.0522	0.0931	0.0035	0.8328	0.0027
5	Chittagong	***4.93***	21.17	56.98	9.31	510.05	8.42		0.0081	0.0347	0.0933	0.0152	0.8350	0.0138
6	Chuadanga	***2.67***	***5.33***	52.42	***2.25***	1702.42	***0.69***		0.0015	0.0030	0.0297	0.0013	0.9641	0.0004
7	Comilla	***0.74***	7.38	56.37	***2.63***	924.04	6.70		0.0007	0.0074	0.0565	0.0026	0.9260	0.0067
8	Cox's Bazar	47.58	35.31	126.09	94.19	444.25	7.22E+06		0.0000	0.0000	0.0000	0.0000	0.0001	0.9999
9	Dhaka	***0.97***	11.17	51.06	***4.45***	1364.30	***5.57***		0.0007	0.0078	0.0355	0.0031	0.9491	0.0039
10	Dinajpur	***2.54***	17.38	56.57	***4.58***	377.89	7.68		0.0054	0.0372	0.1212	0.0098	0.8098	0.0165
11	Faridpur	***0.99***	8.07	58.74	***3.93***	221.59	9.07		0.0033	0.0267	0.1943	0.0130	0.7328	0.0300
12	Feni	***4.04***	23.24	90.15	8.47	331.63	507.32		0.0042	0.0241	0.0934	0.0088	0.3437	0.5258
13	Hatiya	8.16	18.41	65.29	132.42	440.25	416770.10		0.0000	0.0000	0.0002	0.0003	0.0011	0.9984
14	Ishurdi	13.19	***2.55***	76.84	***5.88***	1826.73	9.71		0.0068	0.0013	0.0397	0.0030	0.9441	0.0050
15	Jessore	***3.75***	14.28	69.83	***1.70***	1540.37	***5.15***		0.0023	0.0087	0.0427	0.0010	0.9421	0.0031
16	Khepupara	***2.16***	11.52	93.42	***2.57***	228.20	306.87		0.0033	0.0179	0.1449	0.0040	0.3540	0.4760
17	Khulna	***1.32***	16.34	70.70	***3.91***	263.01	30.02		0.0034	0.0424	0.1835	0.0101	0.6826	0.0779
18	Kutubdia	8.72	35.66	77.69	66.17	438.82	27341.36		0.0003	0.0013	0.0028	0.0024	0.0157	0.9776
19	M.Court	10.92	30.14	100.18	***1.56***	921.83	***2.04***		0.0102	0.0283	0.0939	0.0015	0.8642	0.0019
20	Madaripur	***2.48***	6.69	61.53	***0.49***	589.52	6.51		0.0037	0.0100	0.0922	0.0007	0.8836	0.0098
21	Mongla	***4.84***	14.22	59.53	***0.49***	160.22	***2.71***		0.0200	0.0588	0.2460	0.0020	0.6620	0.0112
22	Mymensingh	***1.45***	***4.62***	53.82	***0.45***	712.49	***3.05***		0.0019	0.0060	0.0694	0.0006	0.9183	0.0039
23	Patuakhali	***3.97***	28.07	103.76	***5.89***	330.98	9.61		0.0082	0.0582	0.2151	0.0122	0.6863	0.0199
24	Rajshahi	***1.75***	16.69	71.10	***1.49***	297.95	6.68		0.0044	0.0422	0.1797	0.0038	0.7530	0.0169
25	Rangamati	***2.47***	11.17	67.00	***3.03***	345.34	***0.81***		0.0057	0.0260	0.1559	0.0070	0.8035	0.0019
26	Rangpur	***4.04***	18.76	53.95	***2.44***	417.10	8.96		0.0080	0.0371	0.1068	0.0048	0.8255	0.0177
27	Sandwip	***3.35***	19.14	61.33	***1.18***	399.82	***2.09***		0.0069	0.0393	0.1260	0.0024	0.8211	0.0043
28	Satkhira	***1.72***	9.10	120.15	***0.84***	666.16	***2.55***		0.0022	0.0114	0.1501	0.0010	0.8322	0.0032
29	Shitakunda	***4.60***	17.72	63.44	30.44	409.21	46965.07		0.0001	0.0004	0.0013	0.0006	0.0086	0.9889
30	Srimangal	***1.45***	15.21	99.75	18.04	179.73	30.48		0.0042	0.0441	0.2894	0.0523	0.5215	0.0884
31	Syadpur	***4.00***	***5.29***	23.96	7.63	269.99	17.36		0.0122	0.0161	0.0730	0.0233	0.8226	0.0529
32	Sylhet	***1.75***	20.48	93.48	***1.68***	309.96	***0.61***		0.0041	0.0479	0.2184	0.0039	0.7243	0.0014
33	Tangail	11.05	***2.55***	46.60	6.41	1414.37	6.01		0.0074	0.0017	0.0313	0.0043	0.9512	0.0040
34	Teknaf	***4.35***	18.76	88.14	50.81	387.94	29651.88		0.0001	0.0006	0.0029	0.0017	0.0128	0.9818
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.1639	0.7532	3.5072	0.2045	23.0060	6.3652

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B20. Determination of Best Fit Distribution

Chi-square values of Rainfall Data for different probability distributions

Total Post-monsoon (November-February)

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	3	5	4	2	6	1
	Comparison	3.67	7.07	4.21	2.82	152.93	**1.00**
1	Barisal	7.55	13.43	8.41	***5.93***	1622.02	***2.38***
2	Bhola	***5.48***	19.14	14.03	12.28	527.49	***1.98***
3	Bogra	***3.66***	15.93	6.12	***2.26***	155.43	***0.51***
4	Chandpur	12.50	10.57	19.22	7.46	3271.89	7.79
5	Chittagong	43.12	54.14	65.29	6.42	527.18	17.03
6	Chuadanga	***3.31***	***4.57***	9.32	21.79	1251.67	***3.19***
7	Comilla	***3.94***	13.79	9.55	***5.19***	732.63	***2.68***
8	Cox's Bazar	6.12	23.43	7.32	***4.64***	263.96	***0.97***
9	Dhaka	13.36	***5.21***	13.50	18.34	2592.06	6.50
10	Dinajpur	***5.64***	20.48	14.85	***5.14***	190.89	***1.99***
11	Faridpur	6.15	9.86	9.25	21.77	4084.91	***3.96***
12	Feni	9.95	23.43	7.02	***0.78***	205.60	***1.52***
13	Hatiya	7.30	10.96	9.08	10.00	2573.77	***2.42***
14	Ishurdi	***3.51***	7.00	11.39	10.25	767.21	***2.42***
15	Jessore	10.77	11.64	15.15	20.79	4871.48	10.03
16	Khepupara	45.77	43.79	13.48	***0.86***	248.89	***4.80***
17	Khulna	***5.13***	15.93	12.87	***2.62***	1805.58	***4.07***
18	Kutubdia	6.19	17.00	16.38	6.31	815.73	***3.54***
19	M.Court	***5.45***	19.14	14.15	24.87	710.64	***2.12***
20	Madaripur	***4.36***	18.79	8.59	***5.45***	179.01	***0.77***
21	Mongla	7.09	11.44	6.89	12.74	183.77	***3.00***
22	Mymensingh	***3.14***	11.29	***5.64***	***3.17***	577.09	***1.27***
23	Patuakhali	14.09	21.64	12.44	19.27	1051.62	***5.69***
24	Rajshahi	***3.11***	12.36	7.89	7.07	188.83	***0.87***
25	Rangamati	***4.97***	***4.86***	10.67	25.69	1822.13	***1.85***
26	Rangpur	13.52	20.21	15.91	14.21	254.49	***3.00***
27	Sandwip	18.75	27.63	18.92	9.19	196.77	***4.83***
28	Satkhira	***1.99***	11.64	9.44	6.53	1817.11	***0.40***
29	Shitakunda	6.98	22.00	8.22	10.76	213.47	***1.20***
30	Srimangal	15.51	14.38	16.47	12.05	1884.34	7.71
31	Syadpur	***5.91***	8.15	7.50	***4.74***	54.71	***2.67***
32	Sylhet	***2.89***	11.29	9.35	***1.21***	2266.92	***0.39***
33	Tangail	***3.76***	11.14	***4.64***	***4.84***	583.82	***1.10***
34	Teknaf	19.54	30.93	10.00	8.23	224.35	***3.06***
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99
		0.7260	1.3995	0.8338	0.5589	30.2837	0.1980

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B21. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

January

Appendix B

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***4.00***	22.67	71.51	8.04	162.77	***2.06***
2	Bogra	***1.21***	11.57	100.98	***4.57***	111.40	17.41
3	Comilla	20.24	23.00	94.22	243.95	129.24	2.97E+06
4	Dinajpur	10.90	20.50	67.18	***1.98***	198.81	44641.93
5	Faridpur	32.08	28.63	136.06	70.32	111.96	1.27E+08
6	Joydevpur	26.98	25.89	91.44	***5.35***	132.05	9.88E+06
7	Khulna	***5.68***	***4.91***	112.20	***5.33***	256.53	6.81
8	Mymensingh	***3.51***	6.00	91.66	***2.56***	658.68	7.30
9	Rajshahi	35.54	34.31	112.69	***1.88***	118.45	18887.79
10	Rangamati	25.19	17.50	54.49	34.53	594.09	37.40
11	Rangpur	***2.90***	9.82	84.05	12.34	446.87	39.13
12	Srimongol	13.91	25.89	72.87	7.56	1843.68	58419.33
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Scaling

Rank	1	3	4	2	5	6
Comparison	**1.00**	2.44	16.46	1.66	52.35	78.09

	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	0.0148	0.0836	0.2638	0.0297	0.6005	0.0076
2	0.0049	0.0468	0.4086	0.0185	0.4508	0.0704
3	0.0000	0.0000	0.0000	0.0001	0.0000	0.9998
4	0.0002	0.0005	0.0015	0.0000	0.0044	0.9933
5	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
7	0.0145	0.0125	0.2866	0.0136	0.6553	0.0174
8	0.0046	0.0078	0.1191	0.0033	0.8558	0.0095
9	0.0019	0.0018	0.0059	0.0001	0.0062	0.9842
10	0.0330	0.0229	0.0714	0.0452	0.7784	0.0490
11	0.0049	0.0165	0.1412	0.0207	0.7509	0.0658
12	0.0002	0.0004	0.0012	0.0001	0.0305	0.9675
	0.0789	0.1929	1.2994	0.1314	4.1329	6.1645

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B22. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

February

Appendix B

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	2	3	4	1	6	5
	Comparison	1.35	1.53	9.00	**1.00**	30.06	22.72
1	Barisal	***2.77***	***2.67***	112.39	***2.38***	1804.83	***2.70***
2	Bogra	***3.66***	11.57	109.72	***0.37***	283.60	7.36
3	Comilla	6.34	18.11	168.56	9.24	127.61	359.43
4	Dinajpur	***2.10***	11.00	84.52	***2.76***	319.54	***4.05***
5	Faridpur	13.85	20.74	68.95	***2.96***	164.02	7.97E+04
6	Joydevpur	17.64	32.00	87.07	***3.22***	165.62	3.91E+05
7	Khulna	6.55	***3.09***	64.84	***4.94***	180.91	***2.34***
8	Mymensingh	***2.63***	7.58	96.73	15.14	172.80	142.67
9	Rajshahi	***4.17***	11.23	31.87	***1.14***	143.38	48.37
10	Rangamati	27.49	22.00	64.72	47.82	571.81	37.89
11	Rangpur	45.89	31.18	64.39	13.50	170.73	7.21
12	Srimongol	21.76	33.67	91.55	***0.49***	689.86	1.51E+06
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99

Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
0.0014	0.0014	0.0583	0.0012	0.9362	0.0014
0.0088	0.0278	0.2636	0.0009	0.6813	0.0177
0.0092	0.0263	0.2445	0.0134	0.1851	0.5215
0.0050	0.0259	0.1994	0.0065	0.7537	0.0096
0.0002	0.0003	0.0009	0.0000	0.0021	0.9966
0.0000	0.0001	0.0002	0.0000	0.0004	0.9992
0.0249	0.0118	0.2469	0.0188	0.6887	0.0089
0.0060	0.0173	0.2211	0.0346	0.3949	0.3261
0.0174	0.0468	0.1327	0.0048	0.5970	0.2014
0.0356	0.0285	0.0839	0.0620	0.7410	0.0491
0.1379	0.0937	0.1934	0.0405	0.5129	0.0216
0.0000	0.0000	0.0001	0.0000	0.0005	0.9994
0.2464	0.2798	1.6448	0.1827	5.4937	4.1525

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B23. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

March

Appendix B

	Scaling					
Rank	2	3	4	1	6	5
Comparison	1.09	1.50	10.92	**1.00**	82.83	70.82

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	9.67	***3.92***	109.99	9.60	537.04	15.29	0.0141	0.0057	0.1605	0.0140	0.7834	0.0223
2	Bogra	***2.73***	12.43	81.50	***4.76***	966.86	***0.80***	0.0026	0.0116	0.0762	0.0044	0.9044	0.0007
3	Comilla	21.62	19.68	71.89	182.93	180.18	1.86E+07	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
4	Dinajpur	15.15	21.50	74.10	6.01	1799.58	6.17E+05	0.0000	0.0000	0.0001	0.0000	0.0029	0.9969
5	Faridpur	39.63	37.05	126.11	***5.43***	169.53	1.66E+08	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
6	Joydevpur	18.08	20.33	76.98	7.19	244.78	332487	0.0001	0.0001	0.0002	0.0000	0.0007	0.9989
7	Khulna	***4.21***	***1.27***	59.34	***3.13***	572.17	***3.70***	0.0065	0.0020	0.0922	0.0049	0.8887	0.0057
8	Mymensingh	***1.50***	***2.56***	89.08	***0.71***	361.28	***2.36***	0.0033	0.0056	0.1947	0.0015	0.7897	0.0052
9	Rajshahi	18.88	18.15	65.70	***1.26***	152.33	6721.15	0.0027	0.0026	0.0094	0.0002	0.0218	0.9633
10	Rangamati	20.37	6.50	36.30	25.05	559.50	27.93	0.0301	0.0096	0.0537	0.0371	0.8281	0.0413
11	Rangpur	***4.05***	***5.73***	106.25	***3.37***	1440.63	***1.25***	0.0026	0.0037	0.0681	0.0022	0.9227	0.0008
12	Srimongol	6.25	26.00	48.94	***2.78***	302.81	7.35	0.0159	0.0660	0.1242	0.0070	0.7683	0.0186
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0779	0.1069	0.7793	0.0714	5.9109	5.0538

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B24. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

April

Appendix B

		Scaling					
	Rank	2	3	4	1	6	5
	Comparison	1.04	2.28	10.40	**1.00**	96.95	51.30

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	6.93	***2.67***	81.31	6.58	2280.57	***2.36***	0.0029	0.0011	0.0342	0.0028	0.9581	0.0010
2	Bogra	***1.80***	12.43	66.91	***2.08***	390.66	***0.30***	0.0038	0.0262	0.1411	0.0044	0.8239	0.0006
3	Comilla	***4.64***	***0.21***	65.75	***3.48***	1089.27	***4.27***	0.0040	0.0002	0.0563	0.0030	0.9329	0.0037
4	Dinajpur	***4.07***	12.50	40.15	***4.02***	239.71	82.72	0.0106	0.0326	0.1048	0.0105	0.6256	0.2159
5	Faridpur	13.90	19.68	69.87	***2.60***	220.88	1.28E+05	0.0001	0.0002	0.0005	0.0000	0.0017	0.9975
6	Joydevpur	***5.44***	13.67	47.22	***2.34***	250.62	614.96	0.0058	0.0146	0.0505	0.0025	0.2683	0.6582
7	Khulna	***4.39***	***3.83***	65.13	***4.98***	688.98	***1.82***	0.0057	0.0050	0.0847	0.0065	0.8958	0.0024
8	Mymensingh	15.32	26.00	77.38	***4.91***	201.75	3.79E+05	0.0000	0.0001	0.0002	0.0000	0.0005	0.9991
9	Rajshahi	15.96	15.85	57.60	***0.83***	1015.47	5752.82	0.0023	0.0023	0.0084	0.0001	0.1481	0.8388
10	Rangamati	11.49	6.50	30.06	19.03	555.45	14.99	0.0180	0.0102	0.0471	0.0298	0.8713	0.0235
11	Rangpur	***1.85***	***5.27***	54.81	***2.16***	416.26	***1.80***	0.0038	0.0109	0.1137	0.0045	0.8633	0.0037
12	Srimongol	8.45	28.11	54.39	***4.18***	328.27	14.52	0.0193	0.0642	0.1242	0.0095	0.7496	0.0331
Critical Chi Square Value		5.99	5.99	7.81	5.99	7.81	5.99	0.0764	0.1676	0.7658	0.0736	7.1390	3.7775

(95% Confidence Level)

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B25. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

May

Appendix B

		Scaling					
	Rank	1	3	4	2	6	5
	Comparison	**1.00**	2.15	10.60	1.25	68.20	30.74

	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	6.67	6.83	98.49	***1.74***	560.01	***3.25***	0.0098	0.0101	0.1455	0.0026	0.8272	0.0048
2	Bogra	7.95	13.30	93.63	***0.98***	3052.25	***4.44***	0.0025	0.0042	0.0295	0.0003	0.9621	0.0014
3	Comilla	***2.29***	12.32	67.78	7.32	145.57	146.31	0.0060	0.0323	0.1776	0.0192	0.3815	0.3834
4	Dinajpur	***3.43***	17.00	48.11	***2.75***	250.48	39.12	0.0095	0.0471	0.1333	0.0076	0.6941	0.1084
5	Faridpur	6.61	16.00	52.22	***4.43***	217.60	2743.27101	0.0022	0.0053	0.0172	0.0015	0.0716	0.9024
6	Joydevpur	6.26	7.56	40.13	14.37	607.32	51.65	0.0086	0.0104	0.0552	0.0198	0.8350	0.0710
7	Khulna	***2.05***	***2.17***	65.80	9.56	483.57	***1.81***	0.0036	0.0038	0.1165	0.0169	0.8559	0.0032
8	Mymensingh	15.63	21.50	79.46	***3.11***	243.39	178370.34	0.0001	0.0001	0.0004	0.0000	0.0014	0.9980
9	Rajshahi	18.29	18.15	66.16	9.84	278.36	715.10	0.0165	0.0164	0.0598	0.0089	0.2517	0.6466
10	Rangamati	12.57	6.00	25.96	22.67	554.51	15.83	0.0197	0.0094	0.0407	0.0356	0.8698	0.0248
11	Rangpur	***4.06***	11.57	90.04	***5.07***	249.18	27.39	0.0105	0.0299	0.2325	0.0131	0.6434	0.0707
12	Srimongol	6.96	24.42	46.43	***2.80***	338.05	9.57	0.0162	0.0570	0.1084	0.0065	0.7894	0.0223
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1053	0.2260	1.1166	0.1319	7.1831	3.2371

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B26. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

June

Appendix B

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***3.42***	18.92	52.60	***4.50***	226.29	1083.46
2	Bogra	***2.70***	11.13	88.28	***1.26***	1069.61	***1.39***
3	Comilla	9.04	***2.56***	52.53	8.12	283.84	9.50
4	Dinajpur	***5.44***	13.00	47.18	11.92	1470.75	3604.79
5	Faridpur	22.38	24.42	79.59	***2.01***	185.88	1.13E+07
6	Joydevpur	***0.28***	9.22	38.64	***2.59***	166.15	***3.04***
7	Khulna	8.73	13.00	97.63	***2.57***	131.29	***4.63***
8	Mymensingh	16.24	27.50	79.64	***3.61***	190.95	2.67E+06
9	Rajshahi	14.17	22.00	61.77	16.81	151.39	466.51
10	Rangamati	11.90	***2.50***	24.13	26.53	594.62	13.36
11	Rangpur	***4.15***	8.96	121.72	6.87	297.03	***2.98***
12	Srimongol	6.49	20.74	40.69	47.56	332.55	8.25
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Scaling						
Rank	1	2	4	3	6	5
Comparison	**1.00**	1.78	10.34	1.84	46.66	33.42

	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	0.0025	0.0136	0.0379	0.0032	0.1629	0.7799
2	0.0023	0.0095	0.0752	0.0011	0.9108	0.0012
3	0.0247	0.0070	0.1437	0.0222	0.7764	0.0260
4	0.0011	0.0025	0.0092	0.0023	0.2854	0.6995
5	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
6	0.0013	0.0419	0.1757	0.0118	0.7555	0.0138
7	0.0338	0.0504	0.3786	0.0100	0.5092	0.0179
8	0.0000	0.0000	0.0000	0.0000	0.0001	0.9999
9	0.0193	0.0300	0.0843	0.0229	0.2066	0.6367
10	0.0177	0.0037	0.0359	0.0394	0.8835	0.0198
11	0.0094	0.0203	0.2756	0.0155	0.6725	0.0067
12	0.0142	0.0454	0.0892	0.1042	0.7288	0.0181
	0.1263	0.2244	1.3052	0.2327	5.8917	4.2197

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B27. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

July

Appendix B

	Scaling					
Rank	3	2	4	1	6	5
Comparison	1.27	1.08	8.81	**1.00**	50.53	22.08

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	17.94	41.83	111.60	6.17	208.68	1.23E+07	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
2	Bogra	***4.88***	***2.00***	75.46	***2.52***	986.74	***3.87***	0.0045	0.0019	0.0702	0.0023	0.9175	0.0036
3	Comilla	***4.90***	6.00	63.93	***3.16***	860.48	***3.59***	0.0052	0.0064	0.0679	0.0034	0.9134	0.0038
4	Dinajpur	7.55	9.50	40.05	***4.28***	267.53	19.97	0.0217	0.0272	0.1148	0.0123	0.7668	0.0572
5	Faridpur	11.24	27.50	77.03	***1.77***	214.64	74437.22	0.0002	0.0004	0.0010	0.0000	0.0029	0.9956
6	Joydevpur	***5.79***	11.53	71.60	***2.04***	925.45	***3.07***	0.0057	0.0113	0.0702	0.0020	0.9078	0.0030
7	Khulna	***3.14***	***2.17***	44.00	***4.68***	939.53	***1.70***	0.0032	0.0022	0.0442	0.0047	0.9440	0.0017
8	Mymensingh	10.57	23.50	72.87	8.57	194.07	15031.44	0.0007	0.0015	0.0047	0.0006	0.0127	0.9798
9	Rajshahi	34.20	8.92	279.88	35.17	79.94	20.77	0.0745	0.0194	0.6099	0.0766	0.1742	0.0453
10	Rangamati	9.53	6.50	25.38	21.71	573.23	9.98	0.0147	0.0101	0.0393	0.0336	0.8869	0.0154
11	Rangpur	***2.38***	***2.87***	72.30	***1.77***	554.24	***2.35***	0.0037	0.0045	0.1137	0.0028	0.8716	0.0037
12	Srimongol	23.79	35.47	58.30	***1.73***	396.95	8.72	0.0453	0.0676	0.1111	0.0033	0.7561	0.0166
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1794	0.1524	1.2470	0.1416	7.1539	3.1257

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B28. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

August

Appendix B

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	7.30	18.92	62.54	9.88	313.04	86048.80
2	Bogra	***0.64***	***5.91***	68.24	***1.08***	1076.69	***0.87***
3	Comilla	12.41	21.44	75.59	38.04	166.85	105066.04
4	Dinajpur	9.75	15.00	62.75	11.79	190.21	2588.94
5	Faridpur	9.81	18.11	62.24	9.39	188.80	16181.249
6	Joydevpur	***1.33***	***2.71***	51.74	6.38	1058.87	***0.95***
7	Khulna	***4.46***	7.17	54.96	9.16	125.07	10.66
8	Mymensingh	17.03	29.00	84.54	***0.26***	189.42	1294149.16
9	Rajshahi	16.67	20.46	210.28	17.98	19.73	9.64
10	Rangamati	18.23	8.50	38.00	36.36	575.59	22.62
11	Rangpur	***4.90***	13.30	64.36	48.56	227.16	328.71
12	Srimongol	18.77	41.79	69.33	10.48	232.16	8.92
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Scaling

Rank	1	2	4	3	5	6
Comparison	**1.00**	1.56	8.65	1.60	26.39	33.09

	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	0.0001	0.0002	0.0007	0.0001	0.0036	0.9952
	0.0006	0.0051	0.0592	0.0009	0.9335	0.0008
	0.0001	0.0002	0.0007	0.0004	0.0016	0.9970
	0.0034	0.0052	0.0218	0.0041	0.0661	0.8994
	0.0006	0.0011	0.0038	0.0006	0.0115	0.9825
	0.0012	0.0024	0.0461	0.0057	0.9438	0.0008
	0.0211	0.0339	0.2599	0.0433	0.5914	0.0504
	0.0000	0.0000	0.0001	0.0000	0.0001	0.9998
	0.0566	0.0694	0.7134	0.0610	0.0669	0.0327
	0.0261	0.0122	0.0543	0.0520	0.8231	0.0324
	0.0071	0.0194	0.0937	0.0707	0.3307	0.4785
	0.0492	0.1096	0.1818	0.0275	0.6086	0.0234
	0.1660	0.2587	1.4354	0.2662	4.3808	5.4928

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B29. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

September

	Scaling					
Rank	1	3	4	2	6	5
Comparison	**1.00**	1.54	9.29	1.31	30.46	25.02

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	26.29	40.70	113.45	9.93	553.36	1.56E+08	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
2	Bogra	6.12	6.35	113.07	6.61	1032.38	***4.49***	0.0052	0.0054	0.0967	0.0057	0.8831	0.0038
3	Comilla	6.33	11.44	89.62	19.16	282.40	13.40	0.0150	0.0271	0.2122	0.0454	0.6686	0.0317
4	Dinajpur	***2.25***	13.50	51.33	9.16	158.57	43.62	0.0081	0.0485	0.1844	0.0329	0.5695	0.1567
5	Faridpur	13.60	20.74	69.56	***1.74***	581.45	1.11E+05	0.0001	0.0002	0.0006	0.0000	0.0052	0.9938
6	Joydevpur	6.43	***2.71***	59.35	***5.16***	126.39	7.66	0.0310	0.0130	0.2858	0.0248	0.6085	0.0369
7	Khulna	11.46	10.36	70.10	6.68	138.02	9.09	0.0467	0.0422	0.2853	0.0272	0.5617	0.0370
8	Mymensingh	11.83	15.00	62.29	8.45	189.08	113511.85	0.0001	0.0001	0.0005	0.0001	0.0017	0.9975
9	Rajshahi	***2.19***	***2.00***	70.99	***1.88***	198.98	***1.00***	0.0079	0.0072	0.2563	0.0068	0.7182	0.0036
10	Rangamati	26.84	15.50	53.69	39.56	579.76	34.01	0.0358	0.0207	0.0716	0.0528	0.7737	0.0454
11	Rangpur	13.34	17.09	58.12	202.82	392.10	9.49E+06	0.0000	0.0000	0.0000	0.0000	0.0000	0.9999
12	Srimongol	9.09	38.11	84.38	12.26	195.04	25.27	0.0250	0.1047	0.2317	0.0337	0.5356	0.0694
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1749	0.2691	1.6251	0.2293	5.3259	4.3757

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B30. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

October

Appendix B

	Scaling					
Rank	3	1	4	2	6	5
Comparison	3.29	**1.00**	6.58	1.21	26.38	17.99

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	19.54	37.22	103.99	***1.68***	200.19	2.54E+07	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
2	Bogra	***2.69***	11.13	99.88	***1.65***	1258.67	***3.27***	0.0020	0.0081	0.0725	0.0012	0.9139	0.0024
3	Comilla	***2.69***	16.00	67.04	11.99	149.14	29.65	0.0097	0.0579	0.2425	0.0434	0.5394	0.1072
4	Dinajpur	***5.38***	***1.00***	107.43	9.02	1545.26	***5.34***	0.0032	0.0006	0.0642	0.0054	0.9234	0.0032
5	Faridpur	21.14	37.05	99.33	13.36	279.79	1.43E+05	0.0001	0.0003	0.0007	0.0001	0.0019	0.9969
6	Joydevpur	***4.89***	14.22	79.04	10.19	126.48	280.81	0.0095	0.0276	0.1533	0.0198	0.2453	0.5446
7	Khulna	6.45	***1.27***	32.58	14.02	425.02	***5.67***	0.0133	0.0026	0.0672	0.0289	0.8763	0.0117
8	Mymensingh	22.29	35.50	98.58	***1.25***	176.13	6914714.69	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
9	Rajshahi	7.54	14.31	168.55	7.24	180.82	35.30	0.0182	0.0346	0.4074	0.0175	0.4370	0.0853
10	Rangamati	27.23	15.50	52.84	70.42	582.90	41.04	0.0345	0.0196	0.0669	0.0891	0.7379	0.0520
11	Rangpur	***2.44***	***3.52***	116.35	***3.98***	416.65	***2.32***	0.0045	0.0065	0.2134	0.0073	0.7641	0.0042
12	Srimongol	504.17	45.89	93.20	36.53	141.29	14.07	0.6037	0.0549	0.1116	0.0437	0.1692	0.0169
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.6987	0.2126	1.3996	0.2564	5.6085	3.8242

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B31. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

November

Appendix B

	Scaling					
Rank	3	2	4	1	6	5
Comparison	1.14	1.10	7.54	**1.00**	16.54	11.91

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	13.92	22.00	144.04	48.58	162.37	1.48E+06	0.0000	0.0000	0.0001	0.0000	0.0001	0.9997
2	Bogra	***5.69***	23.00	84.84	24.10	140.83	553.92	0.0068	0.0276	0.1019	0.0289	0.1692	0.6655
3	Comilla	37.27	26.50	50.90	12.60	198.40	7.13	0.1120	0.0796	0.1529	0.0379	0.5962	0.0214
4	Dinajpur	***3.32***	9.68	132.16	***1.71***	418.57	***3.63***	0.0058	0.0170	0.2322	0.0030	0.7355	0.0064
5	Faridpur	15.93	27.00	77.37	7.40	157.66	3.12E+05	0.0001	0.0001	0.0002	0.0000	0.0005	0.9991
6	Joydevpur	***1.71***	6.44	131.75	***0.18***	129.98	***1.14***	0.0063	0.0238	0.4858	0.0007	0.4793	0.0042
7	Khulna	***2.78***	***4.00***	61.53	***0.69***	185.34	***1.36***	0.0109	0.0156	0.2406	0.0027	0.7248	0.0053
8	Mymensingh	26.92	32.00	116.35	50.94	146.03	1993.48	0.0114	0.0135	0.0492	0.0215	0.0617	0.8427
9	Rajshahi	9.69	***1.33***	173.79	9.59	22.00	***5.40***	0.0437	0.0060	0.7835	0.0433	0.0992	0.0243
10	Rangamati	18.06	16.00	49.77	36.23	588.01	29.12	0.0245	0.0217	0.0675	0.0491	0.7976	0.0395
11	Rangpur	9.68	***2.10***	119.61	6.09	6223.74	10.83	0.0015	0.0003	0.0188	0.0010	0.9767	0.0017
12	Srimongol	55.90	58.59	76.90	52.53	187.04	14.86	0.1254	0.1314	0.1725	0.1178	0.4195	0.0333
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3483	0.3368	2.3054	0.3060	5.0604	3.6431

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B32. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

December

		Scaling					
	Rank	3	2	4	1	5	6
	Comparison	1.49	1.43	7.22	**1.00**	12.39	13.04

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	49.90	33.74	129.64	26.07	84.87	7.03	0.1506	0.1019	0.3914	0.0787	0.2562	0.0212
2	Bogra	21.04	31.18	95.88	***2.76***	176.19	1.06E+07	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
3	Comilla	23.56	53.00	74.46	8.57	235.66	13.48	0.0576	0.1297	0.1822	0.0210	0.5766	0.0330
4	Dinajpur	***3.41***	9.16	62.14	22.26	316.73	500.58	0.0037	0.0100	0.0680	0.0243	0.3464	0.5475
5	Faridpur	16.63	20.33	77.13	28.90	154.78	914.65	0.0137	0.0168	0.0636	0.0238	0.1277	0.7544
6	Joydevpur	16.76	9.18	274.50	7.46	567.27	45.58	0.0182	0.0100	0.2981	0.0081	0.6161	0.0495
7	Khulna	11.94	11.00	161.43	8.17	15.98	9.66	0.0547	0.0504	0.7399	0.0374	0.0733	0.0443
8	Mymensingh	18.54	20.33	76.49	***3.65***	134.91	4.57E+05	0.0000	0.0000	0.0002	0.0000	0.0003	0.9994
9	Rajshahi	***2.44***	***0.50***	81.54	***1.69***	121.88	***3.17***	0.0115	0.0024	0.3861	0.0080	0.5770	0.0150
10	Rangamati	12.44	13.37	28.47	30.24	776.91	11.59	0.0142	0.0153	0.0326	0.0346	0.8899	0.0133
11	Rangpur	***4.85***	14.82	88.89	25.44	403.66	1839.79	0.0020	0.0062	0.0374	0.0107	0.1698	0.7738
12	Srimongol	74.59	58.59	77.99	37.54	199.79	12.58	0.1618	0.1271	0.1691	0.0814	0.4333	0.0273
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.4883	0.4697	2.3685	0.3282	4.0666	4.2787

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B33.Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

Annual

Appendix B

	Scaling					
Rank	2	1	4	3	5	6
Comparison	1.04	**1.00**	6.92	1.51	29.46	34.46

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***4.81***	14.75	107.18	21.03	408.68	2789.84	0.0014	0.0044	0.0320	0.0063	0.1221	0.8337
2	Bogra	***5.11***	11.13	153.96	***0.63***	554.00	***1.85***	0.0070	0.0153	0.2119	0.0009	0.7624	0.0025
3	Comilla	17.10	24.48	87.12	38.22	610.16	112.18	0.0192	0.0275	0.0980	0.0430	0.6861	0.1262
4	Dinajpur	28.89	32.50	105.72	60.37	504.92	2.88E+09	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
5	Faridpur	23.16	16.50	98.43	24.89	462.60	178.860998	0.0288	0.0205	0.1224	0.0309	0.5751	0.2223
6	Joydevpur	18.02	18.11	140.89	12.94	311.19	305.84	0.0223	0.0224	0.1746	0.0160	0.3856	0.3790
7	Khulna	12.82	8.00	103.41	10.95	162.21	17.67	0.0407	0.0254	0.3282	0.0348	0.5148	0.0561
8	Mymensingh	16.66	18.50	76.77	81.44	497.38	9.22E+06	0.0000	0.0000	0.0000	0.0000	0.0001	0.9999
9	Rajshahi	35.11	34.31	188.38	36.79	210.08	4132.04	0.0076	0.0074	0.0406	0.0079	0.0453	0.8912
10	Rangamati	32.90	16.00	62.23	94.16	739.35	50.88	0.0330	0.0161	0.0625	0.0946	0.7427	0.0511
11	Rangpur	12.24	21.57	153.64	35.56	350.68	85210.95	0.0001	0.0003	0.0018	0.0004	0.0041	0.9933
12	Srimongol	6.58	18.11	36.84	7.33	752.72	***2.65***	0.0080	0.0220	0.0447	0.0089	0.9132	0.0032
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1683	0.1613	1.1167	0.2437	4.7516	5.5585

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B34. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

Yearly Maximum Monthly

		Scaling					
	Rank	2	4	5	1	6	3
	Comparison	1.04	1.92	14.74	**1.00**	55.45	1.40

	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	10.80	***5.58***	108.88	6.31	2797.38	7.31	0.0037	0.0019	0.0371	0.0021	0.9527	0.0025
2	Bogra	***4.16***	18.09	106.06	6.20	245.99	***0.73***	0.0109	0.0474	0.2782	0.0163	0.6453	0.0019
3	Comilla	***1.82***	14.95	88.38	6.92	152.87	21.75	0.0064	0.0522	0.3083	0.0241	0.5332	0.0759
4	Dinajpur	***1.21***	7.50	52.43	***1.44***	227.84	***1.20***	0.0042	0.0257	0.1798	0.0049	0.7813	0.0041
5	Faridpur	8.11	***4.00***	89.22	***5.71***	415.61	***4.31***	0.0154	0.0076	0.1693	0.0108	0.7887	0.0082
6	Joydevpur	6.63	10.89	150.56	***4.16***	172.36	***3.11***	0.0191	0.0313	0.4330	0.0120	0.4957	0.0090
7	Khulna	***1.51***	***1.33***	59.42	***2.34***	1240.52	***0.87***	0.0012	0.0010	0.0455	0.0018	0.9499	0.0007
8	Mymensingh	***1.19***	***4.00***	97.73	***2.41***	340.09	***3.73***	0.0027	0.0089	0.2176	0.0054	0.7572	0.0083
9	Rajshahi	9.92	8.92	103.27	6.43	130.97	14.63	0.0362	0.0325	0.3767	0.0234	0.4777	0.0534
10	Rangamati	15.62	8.00	33.21	34.37	545.40	23.12	0.0237	0.0121	0.0503	0.0521	0.8267	0.0350
11	Rangpur	***3.20***	***3.74***	89.65	***2.39***	1701.34	***2.97***	0.0018	0.0021	0.0497	0.0013	0.9435	0.0016
12	Srimongol	16.78	34.95	83.00	***1.90***	277.03	9.41	0.0397	0.0826	0.1962	0.0045	0.6548	0.0222
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1647	0.3054	2.3417	0.1588	8.8066	0.2228

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B35. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

Yearly Average Monthly

Appendix B

	Scaling					
Rank	1	2	4	3	5	6
Comparison	**1.00**	1.10	8.07	1.12	28.54	36.89

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***5.28***	16.42	114.62	21.20	3099.70	3787.43	0.0007	0.0023	0.0163	0.0030	0.4400	0.5376
2	Bogra	***4.94***	11.13	150.83	***0.57***	140.60	***1.89***	0.0159	0.0359	0.4866	0.0018	0.4536	0.0061
3	Comilla	13.08	18.76	70.59	38.23	723.84	6235.63	0.0018	0.0026	0.0099	0.0054	0.1019	0.8782
4	Dinajpur	18.14	25.50	118.40	60.56	136.14	638869.11	0.0000	0.0000	0.0002	0.0001	0.0002	0.9994
5	Faridpur	22.61	13.50	96.05	24.91	3187.98	39.53	0.0067	0.0040	0.0284	0.0074	0.9419	0.0117
6	Joydevpur	17.58	18.11	142.31	12.96	378.43	222.82	0.0222	0.0229	0.1796	0.0164	0.4777	0.2813
7	Khulna	12.83	8.00	102.98	10.85	184.56	17.75	0.0381	0.0237	0.3056	0.0322	0.5477	0.0527
8	Mymensingh	14.60	32.50	110.23	81.37	160.61	178571.02	0.0001	0.0002	0.0006	0.0005	0.0009	0.9978
9	Rajshahi	27.56	26.62	152.36	36.92	123.12	4324.40	0.0059	0.0057	0.0325	0.0079	0.0262	0.9219
10	Rangamati	39.86	16.50	62.95	70.96	626.66	61.64	0.0454	0.0188	0.0717	0.0808	0.7133	0.0702
11	Rangpur	9.49	20.26	143.87	36.43	164.53	32955.11	0.0003	0.0006	0.0043	0.0011	0.0049	0.9888
12	Srimongol	7.31	20.74	47.63	7.37	286.02	9.23	0.0193	0.0548	0.1259	0.0195	0.7561	0.0244
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1564	0.1716	1.2616	0.1759	4.4645	5.7700

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B36. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

Yearly Average Daily

	Scaling					
Rank	1	3	5	2	4	6
Comparison	**1.00**	1.55	8.80	1.17	6.99	23.53

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***3.02***	16.83	106.64	17.37	***2.97***	865.89	0.0030	0.0166	0.1053	0.0172	0.0029	0.8550
2	Bogra	***3.41***	12.43	142.77	***1.37***	17.11	***1.62***	0.0191	0.0696	0.7989	0.0077	0.0957	0.0091
3	Comilla	16.78	14.95	66.81	39.00	661.72	522.50	0.0127	0.0113	0.0505	0.0295	0.5006	0.3953
4	Dinajpur	16.72	18.50	86.29	55.34	33.95	9.40E+06	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
5	Faridpur	20.64	13.50	89.04	24.87	65.03	87.11	0.0687	0.0450	0.2966	0.0828	0.2166	0.2902
6	Joydevpur	19.73	21.44	145.45	12.89	19.24	766.32	0.0200	0.0218	0.1477	0.0131	0.0195	0.7779
7	Khulna	11.02	8.00	96.31	7.98	15.58	31.33	0.0647	0.0470	0.5658	0.0469	0.0915	0.1841
8	Mymensingh	20.48	20.50	94.97	74.47	135.90	7.82E+06	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
9	Rajshahi	29.22	26.62	140.59	36.29	37.00	107612.14	0.0003	0.0002	0.0013	0.0003	0.0003	0.9975
10	Rangamati	40.33	16.50	67.66	82.52	1850.78	41.32	0.0192	0.0079	0.0322	0.0393	0.8817	0.0197
11	Rangpur	12.69	21.13	131.51	32.63	8.90	2.35E+06	0.0000	0.0000	0.0001	0.0000	0.0000	0.9999
12	Srimongol	6.07	18.11	38.98	7.53	12.02	***2.71***	0.0711	0.2119	0.4563	0.0882	0.1407	0.0317
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.2788	0.4313	2.4547	0.3250	1.9498	6.5603

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B37. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

Yearly Maximum Daily

		Scaling					
	Rank	4	3	5	2	6	1
	Comparison	3.95	3.23	7.46	1.38	17.58	**1.00**

	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***2.49***	***5.17***	33.92	***4.50***	84.65	***3.29***	0.0186	0.0385	0.2531	0.0336	0.6316	0.0246
2	Bogra	211.17	51.13	29.46	7.05	169.26	9.17	0.4425	0.1071	0.0617	0.0148	0.3547	0.0192
3	Comilla	7.19	17.81	33.87	6.30	67.37	***2.72***	0.0532	0.1317	0.2504	0.0466	0.4981	0.0201
4	Dinajpur	172.41	61.50	38.43	16.51	157.19	12.69	0.3758	0.1341	0.0838	0.0360	0.3427	0.0277
5	Faridpur	***5.85***	11.50	23.70	***1.14***	108.70	***2.71***	0.0381	0.0749	0.1543	0.0075	0.7077	0.0176
6	Joydevpur	23.65	45.89	37.19	8.64	102.94	8.80	0.1041	0.2021	0.1637	0.0381	0.4533	0.0387
7	Khulna	***3.64***	***2.17***	47.58	7.55	8.13	***4.81***	0.0493	0.0293	0.6440	0.1022	0.1100	0.0651
8	Mymensingh	***2.51***	***2.50***	49.07	***5.46***	37.07	***2.50***	0.0254	0.0252	0.4951	0.0551	0.3740	0.0252
9	Rajshahi	30.74	42.77	31.98	13.10	97.77	10.20	0.1357	0.1888	0.1412	0.0578	0.4315	0.0450
10	Rangamati	16.03	6.00	35.14	6.88	697.58	10.71	0.0208	0.0078	0.0455	0.0089	0.9032	0.0139
11	Rangpur	***4.04***	8.52	33.61	***1.94***	313.39	***3.88***	0.0110	0.0233	0.0920	0.0053	0.8577	0.0106
12	Srimongol	12.09	19.68	25.46	9.12	54.34	***4.90***	0.0962	0.1567	0.2028	0.0726	0.4327	0.0390
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.3707	1.1195	2.5875	0.4785	6.0971	0.3468

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B38. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

Total Pre-monsoon (March-June)

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***5.49***	***2.67***	106.43	12.14	1767.42	***5.34***
2	Bogra	***3.57***	11.57	108.71	***2.38***	2171.47	***0.83***
3	Comilla	21.26	23.05	73.05	180.46	387.55	283.39
4	Dinajpur	10.71	18.50	65.04	7.76	351.67	51337.14
5	Faridpur	24.07	18.50	73.04	36.38	405.58	1499.68
6	Joydevpur	11.41	15.89	55.64	***2.41***	321.84	91700.35
7	Khulna	13.19	***3.83***	124.13	12.28	189.58	9.82
8	Mymensingh	21.36	17.50	87.93	50.23	314.12	312.85
9	Rajshahi	36.87	34.31	112.11	***4.93***	212.32	30921.29
10	Rangamati	17.05	8.00	37.79	37.27	564.30	15.70
11	Rangpur	8.45	16.35	90.75	47.58	297.51	60440.36
12	Srimongol	12.03	41.26	77.27	6.77	485.32	14.50
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Scaling						
Rank	1	2	4	3	5	6
Comparison	**1.00**	1.02	5.82	2.54	33.96	36.94

	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	0.0029	0.0014	0.0560	0.0064	0.9305	0.0028
	0.0016	0.0050	0.0473	0.0010	0.9447	0.0004
	0.0219	0.0238	0.0754	0.1863	0.4001	0.2925
	0.0002	0.0004	0.0013	0.0001	0.0068	0.9912
	0.0117	0.0090	0.0355	0.0177	0.1971	0.7290
	0.0001	0.0002	0.0006	0.0000	0.0035	0.9956
	0.0374	0.0109	0.3518	0.0348	0.5373	0.0278
	0.0266	0.0218	0.1094	0.0625	0.3907	0.3891
	0.0012	0.0011	0.0036	0.0002	0.0068	0.9872
	0.0251	0.0118	0.0556	0.0548	0.8297	0.0231
	0.0001	0.0003	0.0015	0.0008	0.0049	0.9924
	0.0189	0.0648	0.1213	0.0106	0.7617	0.0228
	0.1476	0.1503	0.8592	0.3752	5.0138	5.4539

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B39. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

Total monsoon (July-October)

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	29.31	27.25	98.37	***4.23***	416.99	2.85E+09
2	Bogra	***1.63***	8.09	160.69	***0.88***	410.36	***2.49***
3	Comilla	31.26	24.48	96.34	42.37	449.86	396.66
4	Dinajpur	9.06	22.50	90.53	37.63	293.65	7497.12
5	Faridpur	17.12	23.00	85.63	22.58	375.05	2.81E+04
6	Joydevpur	16.72	25.89	99.42	47.80	279.40	1.62E+05
7	Khulna	9.65	10.50	69.07	11.37	157.06	41.20
8	Mymensingh	63.50	46.50	155.83	***3.03***	335.88	2.97E+11
9	Rajshahi	11.83	15.85	204.53	17.74	148.13	5558.45
10	Rangamati	39.90	15.50	65.43	41.56	571.40	46.15
11	Rangpur	13.15	12.87	126.13	23.35	295.24	664.67
12	Srimongol	13.75	49.16	91.82	16.41	593.31	21.79
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Scaling						
Rank	1	2	4	3	5	6
Comparison	**1.00**	1.16	6.44	1.23	23.36	47.27

	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
	0.0028	0.0138	0.2751	0.0015	0.7025	0.0043
	0.0300	0.0235	0.0926	0.0407	0.4322	0.3811
	0.0011	0.0028	0.0114	0.0047	0.0369	0.9430
	0.0006	0.0008	0.0030	0.0008	0.0131	0.9817
	0.0001	0.0002	0.0006	0.0003	0.0017	0.9971
	0.0323	0.0351	0.2311	0.0381	0.5256	0.1379
	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
	0.0020	0.0027	0.0343	0.0030	0.0249	0.9332
	0.0512	0.0199	0.0839	0.0533	0.7326	0.0592
	0.0116	0.0113	0.1111	0.0206	0.2600	0.5854
	0.0175	0.0625	0.1168	0.0209	0.7546	0.0277
	0.1491	0.1727	0.9599	0.1838	3.4841	7.0505

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B40. Determination of Best Fit Distribution

Chi-square values of Evaporation Data for different probability distributions

Total Post-monsoon (November-February)

	Scaling					
Rank	1	3	4	2	5	6
Comparison	**1.00**	1.87	13.86	1.25	34.56	35.47

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	7.56	23.30	134.64	***4.08***	266.32	***4.20***	0.0172	0.0530	0.3059	0.0093	0.6051	0.0095
2	Bogra	8.89	20.27	139.58	18.84	353.46	9.23E+04	0.0001	0.0002	0.0015	0.0002	0.0038	0.9942
3	Comilla	***5.27***	18.67	87.79	16.77	193.48	225.76	0.0096	0.0341	0.1603	0.0306	0.3532	0.4122
4	Dinajpur	***1.38***	10.21	103.99	***1.73***	279.12	***5.80***	0.0034	0.0254	0.2585	0.0043	0.6939	0.0144
5	Faridpur	22.90	15.89	109.86	30.24	268.22	852.35	0.0176	0.0122	0.0845	0.0233	0.2064	0.6559
6	Joydevpur	8.80	***3.88***	284.30	***5.17***	256.88	6.68	0.0156	0.0069	0.5026	0.0091	0.4541	0.0118
7	Khulna	30.52	26.73	89.49	***1.10***	165.19	1109.06	0.0215	0.0188	0.0629	0.0008	0.1162	0.7799
8	Mymensingh	11.73	16.00	79.26	50.82	676.58	1.29E+04	0.0009	0.0012	0.0058	0.0037	0.0493	0.9392
9	Rajshahi	***4.39***	***2.17***	151.44	***2.99***	344.85	***2.37***	0.0086	0.0043	0.2980	0.0059	0.6786	0.0047
10	Rangamati	30.69	28.63	90.53	36.50	1653.39	34.17	0.0164	0.0153	0.0483	0.0195	0.8823	0.0182
11	Rangpur	10.78	25.27	131.53	27.39	206.64	1.07E+04	0.0010	0.0023	0.0119	0.0025	0.0187	0.9637
12	Srimongol	16.22	53.67	98.96	40.96	429.97	21.57	0.0245	0.0811	0.1496	0.0619	0.6501	0.0326
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1363	0.2547	1.8899	0.1711	4.7117	4.8364

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B41. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

January

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.00	97.84	1.18	106.86	13.92

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***3.41***	21.17	409.50	***5.41***	227.61	2139.38	0.0012	0.0075	0.1459	0.0019	0.0811	0.7623
2	Chittagong	7.10	7.38	667.76	***5.12***	684.52	***2.64***	0.0052	0.0054	0.4858	0.0037	0.4980	0.0019
3	Cox's Bazar	***1.61***	13.59	872.62	***1.87***	1192.92	***3.84***	0.0008	0.0065	0.4182	0.0009	0.5717	0.0018
4	Dinajpur	13.02	17.03	426.18	7.05	285.61	74.92	0.0158	0.0207	0.5173	0.0086	0.3467	0.0909
5	Faridpur	9.99	12.55	565.23	13.83	546.95	138.38	0.0078	0.0098	0.4392	0.0107	0.4250	0.1075
6	Feni	***0.97***	11.17	628.70	***1.39***	684.15	6.79	0.0007	0.0084	0.4716	0.0010	0.5132	0.0051
7	Hatiya	***4.82***	6.69	894.49	***2.94***	1549.55	7.76	0.0020	0.0027	0.3627	0.0012	0.6283	0.0031
8	Ishurdi	9.75	14.97	594.97	16.57	576.29	363.60	0.0062	0.0095	0.3775	0.0105	0.3656	0.2307
9	Khepupara	***3.22***	***3.93***	780.12	***2.16***	1207.71	10.52	0.0016	0.0020	0.3886	0.0011	0.6016	0.0052
10	Kutubdia	8.51	***1.83***	651.42	12.47	960.72	10.04	0.0052	0.0011	0.3960	0.0076	0.5840	0.0061
11	Maijdicourt	***3.08***	7.72	693.50	***4.05***	932.81	22.44	0.0018	0.0046	0.4169	0.0024	0.5607	0.0135
12	Madaripur	***2.41***	12.90	534.49	6.99	475.03	73.29	0.0022	0.0117	0.4837	0.0063	0.4299	0.0663
13	Mongla	12.16	***3.00***	444.42	9.24	534.10	15.69	0.0119	0.0029	0.4363	0.0091	0.5243	0.0154
14	Mymensingh	***5.33***	10.48	525.96	6.47	516.92	13.10	0.0049	0.0097	0.4878	0.0060	0.4794	0.0122
15	Patuakhali	***2.26***	12.21	752.62	***0.53***	969.46	9.44	0.0013	0.0070	0.4309	0.0003	0.5551	0.0054
16	Rajshahi	10.20	14.62	558.26	13.09	507.99	118.13	0.0083	0.0120	0.4567	0.0107	0.4156	0.0966
17	Rangamati	***2.35***	***5.31***	659.89	***1.76***	840.34	***2.73***	0.0016	0.0035	0.4363	0.0012	0.5556	0.0018
18	Rangpur	7.67	13.59	494.47	15.96	431.85	76.61	0.0074	0.0131	0.4754	0.0153	0.4152	0.0737
19	Shitakunda	***5.91***	***2.55***	702.81	6.12	749.11	***3.15***	0.0040	0.0017	0.4782	0.0042	0.5097	0.0021
20	Srimongol	***2.29***	11.86	558.83	***0.94***	522.07	***2.90***	0.0021	0.0108	0.5085	0.0009	0.4751	0.0026
21	Sylhet	***5.77***	22.55	479.61	6.06	274.43	***1.64***	0.0073	0.0285	0.6071	0.0077	0.3474	0.0021
22	Tangail	8.29	11.18	439.06	9.23	422.63	35.35	0.0090	0.0121	0.4743	0.0100	0.4565	0.0382
23	Teknaf	***3.72***	***4.28***	983.56	***5.15***	1693.72	***5.00***	0.0014	0.0285	0.3649	0.0019	0.6284	0.0019
24	Comilla	6.84	10.83	639.53	8.49	726.34	64.96	0.0047	0.0074	0.4389	0.0058	0.4985	0.0446
25	Dhaka	***3.85***	12.55	461.85	***3.39***	363.18	35.04	0.0044	0.0143	0.5249	0.0039	0.4128	0.0398
26	Chandpur	7.43	12.21	615.38	15.74	661.22	404.26	0.0043	0.0071	0.3586	0.0092	0.3853	0.2355
27	Jessore	***2.66***	11.52	567.78	***2.62***	561.73	31.58	0.0023	0.0098	0.4820	0.0022	0.4769	0.0268
28	Khulna	7.83	***4.62***	603.25	10.34	746.01	29.80	0.0056	0.0033	0.4303	0.0074	0.5322	0.0213
29	Satkhira	***2.70***	8.76	581.98	7.39	614.53	6.84	0.0022	0.0072	0.4762	0.0060	0.5028	0.0056
30	Barisal	7.96	***3.24***	656.13	8.10	917.04	21.00	0.0049	0.0020	0.4067	0.0050	0.5684	0.0130
31	Bhola	***1.86***	9.10	656.06	***1.91***	785.17	8.64	0.0013	0.0072	0.4485	0.0013	0.5368	0.0059
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1393	0.2779	13.6259	0.1640	14.8817	1.9391

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B42. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

Fabruary

								Scaling					
								Rank	1	4	6	2	5	3
								Comparison	**1.00**	3.63	165.98	1.12	117.60	1.16
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Bogra	***0.64***	10.14	437.36	***2.37***	292.76	***0.71***		0.0009	0.0136	0.5879	0.0032	0.3935	0.0010
2	Chittagong	12.83	9.45	464.25	11.57	351.90	7.33		0.0150	0.0110	0.5415	0.0135	0.4105	0.0085
3	Cox's Bazar	***4.51***	17.72	586.25	***2.32***	457.23	***2.27***		0.0042	0.0166	0.5477	0.0022	0.4272	0.0021
4	Dinajpur	***3.26***	8.76	499.23	***5.52***	385.48	***4.15***		0.0036	0.0097	0.5508	0.0061	0.4253	0.0046
5	Faridpur	***1.08***	7.38	426.87	***1.54***	259.00	***1.82***		0.0015	0.0106	0.6118	0.0022	0.3712	0.0026
6	Feni	***2.82***	13.59	590.29	***2.54***	493.00	7.27		0.0025	0.0122	0.5320	0.0023	0.4443	0.0066
7	Hatiya	***1.36***	8.76	574.58	***1.49***	561.04	***3.21***		0.0012	0.0076	0.4994	0.0013	0.4877	0.0028
8	Ishurdi	***0.74***	11.52	428.38	***1.03***	276.87	***0.37***		0.0010	0.0160	0.5959	0.0014	0.3851	0.0005
9	Khepupara	***1.66***	***5.66***	471.51	***2.24***	364.07	***4.79***		0.0020	0.0067	0.5548	0.0026	0.4284	0.0056
10	Kutubdia	***2.36***	***5.17***	563.69	10.22	689.01	***4.37***		0.0018	0.0041	0.4422	0.0080	0.5405	0.0034
11	Maijdicourt	***0.22***	11.52	484.37	***0.32***	360.89	***1.15***		0.0003	0.0134	0.5642	0.0004	0.4204	0.0013
12	Madaripur	***1.90***	11.52	482.41	***2.60***	348.96	13.29		0.0022	0.0134	0.5605	0.0030	0.4054	0.0154
13	Mongla	***0.68***	6.64	282.98	***0.28***	162.15	***1.38***		0.0015	0.0146	0.6231	0.0006	0.3571	0.0030
14	Mymensingh	***2.34***	7.72	469.18	11.56	346.65	***2.30***		0.0028	0.0092	0.5587	0.0138	0.4128	0.0027
15	Patuakhali	***1.39***	14.28	513.23	***1.33***	360.49	***0.18***		0.0016	0.0160	0.5761	0.0015	0.4046	0.0002
16	Rajshahi	***2.18***	8.76	415.95	***0.73***	251.12	***5.15***		0.0032	0.0128	0.6082	0.0011	0.3672	0.0075
17	Rangamati	8.58	11.52	442.52	8.76	292.42	***3.81***		0.0112	0.0150	0.5765	0.0114	0.3810	0.0050
18	Rangpur	***1.66***	***5.66***	425.23	***1.93***	311.00	***1.81***		0.0022	0.0076	0.5690	0.0026	0.4162	0.0024
19	Shitakunda	***5.04***	13.59	504.10	***5.81***	367.72	***1.11***		0.0056	0.0151	0.5617	0.0065	0.4098	0.0012
20	Srimongol	***5.57***	18.76	543.83	***1.00***	366.32	10.09		0.0059	0.0198	0.5751	0.0011	0.3874	0.0107
21	Sylhet	***3.27***	19.79	448.60	***2.71***	253.75	***1.26***		0.0045	0.0271	0.6150	0.0037	0.3479	0.0017
22	Tangail	***3.27***	***4.82***	317.95	***2.94***	206.46	***1.92***		0.0061	0.0090	0.5917	0.0055	0.3842	0.0036
23	Teknaf	***0.57***	17.38	609.84	***1.22***	486.90	***2.70***		0.0005	0.0271	0.5452	0.0011	0.4353	0.0024
24	Comilla	***0.67***	7.03	494.67	***1.69***	419.52	***1.95***		0.0007	0.0076	0.5345	0.0018	0.4533	0.0021
25	Dhaka	***2.26***	***5.31***	391.84	***3.68***	269.06	***2.26***		0.0034	0.0079	0.5810	0.0055	0.3990	0.0034
26	Chandpur	***0.95***	10.14	543.65	***1.07***	424.08	***1.49***		0.0010	0.0103	0.5540	0.0011	0.4321	0.0015
27	Jessore	***2.49***	12.21	467.81	***2.20***	182.12	***1.30***		0.0037	0.0183	0.7002	0.0033	0.2726	0.0019
28	Khulna	***3.59***	6.69	464.47	***3.09***	251.19	***4.59***		0.0049	0.0091	0.6331	0.0042	0.3424	0.0063
29	Satkhira	***5.32***	6.34	486.77	***5.86***	331.83	6.73		0.0063	0.0075	0.5775	0.0069	0.3937	0.0080
30	Barisal	***0.40***	9.45	503.49	***0.36***	378.13	***1.35***		0.0005	0.0106	0.5637	0.0004	0.4234	0.0015
31	Bhola	4.71	9.10	537.74	1.62	362.15	4.21		0.0051	0.0075	0.5848	0.0018	0.3938	0.0046
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.1067	0.3871	17.7180	0.1199	12.5531	0.1243

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B43. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

March

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	1	3	6	2	5	4
	Comparison	**1.00**	1.68	114.75	1.17	97.67	3.37
1	Bogra	***0.97***	10.14	559.90	***2.13***	413.72	***3.12***
2	Chittagong	***4.90***	7.38	536.10	7.21	441.86	***1.74***
3	Cox's Bazar	***4.07***	6.69	585.25	***3.55***	552.92	***2.23***
4	Dinajpur	7.43	7.72	601.35	7.62	552.00	9.36
5	Faridpur	***0.69***	7.72	478.03	***1.88***	335.15	***4.02***
6	Feni	***1.52***	10.14	621.13	***1.32***	563.74	***5.62***
7	Hatiya	***2.21***	17.38	923.81	***4.41***	1052.39	***3.21***
8	Ishurdi	16.48	10.83	549.83	18.30	368.43	37.07
9	Khepupara	***1.80***	12.21	667.43	6.51	604.40	110.02
10	Kutubdia	7.24	6.42	618.83	7.23	751.67	10.47
11	Maijdicourt	***4.14***	9.10	636.54	***3.63***	600.21	33.90
12	Madaripur	***1.98***	9.45	635.34	***3.63***	568.19	16.63
13	Mongla	6.96	6.18	465.96	12.99	395.31	17.61
14	Mymensingh	7.59	***1.86***	513.81	7.45	491.53	10.66
15	Patuakhali	***2.53***	8.76	568.77	7.64	473.35	36.28
16	Rajshahi	8.28	***5.66***	514.86	***5.98***	383.22	25.77
17	Rangamati	***2.24***	10.83	517.05	***1.47***	369.50	11.96
18	Rangpur	***2.22***	***4.62***	556.05	***4.95***	532.35	7.15
19	Shitakunda	***4.05***	***2.90***	435.47	***3.81***	323.99	***3.60***
20	Srimongol	***2.66***	7.38	506.48	6.34	410.06	***1.82***
21	Sylhet	14.71	8.07	518.88	10.99	396.58	9.14
22	Tangail	***2.91***	***5.27***	432.76	***2.55***	366.58	11.07
23	Teknaf	***4.82***	11.52	765.46	***1.86***	811.84	8.19
24	Comilla	***0.65***	7.72	593.87	***1.37***	557.18	***4.39***
25	Dhaka	***5.25***	***4.62***	433.43	***4.70***	305.03	11.37
26	Chandpur	7.62	19.79	835.44	***4.34***	787.20	27.16
27	Jessore	***4.41***	6.69	533.91	7.21	420.12	15.27
28	Khulna	***5.65***	***3.24***	471.07	7.73	347.80	18.35
29	Satkhira	7.11	8.76	541.48	6.37	373.35	15.20
30	Barisal	***4.04***	21.52	754.60	***3.86***	600.55	74.62
31	Bhola	***0.95***	10.14	656.91	***3.35***	626.40	***4.83***
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99
		0.1412	0.2369	16.1974	0.1648	13.7868	0.4756

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B44. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

April

		Scaling					
	Rank	1	3	6	2	5	4
	Comparison	**1.00**	2.19	138.56	1.05	116.01	9.56

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***1.23***	***5.31***	371.16	***1.43***	203.27	***2.80***	0.0021	0.0091	0.6342	0.0024	0.3474	0.0048
2	Chittagong	***3.23***	16.69	858.37	***2.11***	894.78	***4.97***	0.0018	0.0094	0.4822	0.0012	0.5026	0.0028
3	Cox's Bazar	***0.50***	10.14	676.99	***4.02***	635.10	***2.06***	0.0004	0.0076	0.5095	0.0030	0.4779	0.0015
4	Dinajpur	6.14	***1.86***	371.77	***4.52***	229.78	***5.19***	0.0099	0.0030	0.6003	0.0073	0.3710	0.0084
5	Faridpur	***2.79***	10.48	516.66	***5.03***	330.39	13.75	0.0032	0.0119	0.5877	0.0057	0.3758	0.0156
6	Feni	8.85	***5.66***	749.23	***5.39***	768.44	***4.66***	0.0057	0.0037	0.4858	0.0035	0.4983	0.0030
7	Hatiya	***3.08***	17.72	1156.72	***2.44***	1527.03	11.24	0.0011	0.0065	0.4255	0.0009	0.5618	0.0041
8	Ishurdi	***4.78***	7.38	405.11	***4.55***	218.01	***4.03***	0.0074	0.0115	0.6292	0.0071	0.3386	0.0063
9	Khepupara	***4.60***	11.52	817.32	***4.76***	861.24	7.74	0.0027	0.0067	0.4788	0.0028	0.5045	0.0045
10	Kutubdia	***3.28***	6.00	819.65	***5.47***	1252.93	***1.72***	0.0016	0.0029	0.3924	0.0026	0.5998	0.0008
11	Maijdicourt	***2.65***	12.90	624.19	***1.72***	500.57	17.33	0.0023	0.0111	0.5384	0.0015	0.4318	0.0150
12	Madaripur	***2.42***	10.48	663.07	6.96	567.57	11.80	0.0019	0.0083	0.5253	0.0055	0.4496	0.0093
13	Mongla	***2.29***	7.09	535.16	6.65	495.02	***5.29***	0.0022	0.0067	0.5090	0.0063	0.4708	0.0050
14	Mymensingh	***5.68***	6.69	524.63	***2.77***	370.91	***5.58***	0.0062	0.0073	0.5726	0.0030	0.4048	0.0061
15	Patuakhali	***4.21***	8.07	687.01	***5.90***	655.97	9.13	0.0031	0.0059	0.5014	0.0043	0.4787	0.0067
16	Rajshahi	***0.75***	7.38	446.99	***3.81***	265.78	***2.68***	0.0010	0.0101	0.6145	0.0052	0.3654	0.0037
17	Rangamati	***3.70***	8.76	473.92	7.23	303.32	6.20	0.0046	0.0109	0.5901	0.0090	0.3777	0.0077
18	Rangpur	8.13	***1.86***	409.72	7.96	279.27	***5.65***	0.0114	0.0026	0.5750	0.0112	0.3919	0.0079
19	Shitakunda	***2.58***	12.90	608.19	***1.30***	489.39	***1.33***	0.0023	0.0116	0.5451	0.0012	0.4386	0.0012
20	Srimongol	***1.87***	7.38	554.95	***2.59***	392.16	***2.91***	0.0019	0.0077	0.5770	0.0027	0.4077	0.0030
21	Sylhet	7.97	***4.28***	513.82	6.38	437.47	9.24	0.0081	0.0044	0.5248	0.0065	0.4468	0.0094
22	Tangail	***3.41***	10.27	429.08	***1.02***	295.22	***2.71***	0.0046	0.0138	0.5785	0.0014	0.3980	0.0037
23	Teknaf	***5.28***	12.90	1103.69	***5.79***	1574.39	57.08	0.0019	0.0044	0.4000	0.0021	0.5706	0.0207
24	Comilla	***5.84***	11.52	619.50	***3.04***	508.53	117.59	0.0046	0.0091	0.4893	0.0024	0.4017	0.0929
25	Dhaka	***3.03***	***4.97***	471.36	***1.56***	347.64	***2.31***	0.0037	0.0060	0.5673	0.0019	0.4184	0.0028
26	Chandpur	6.94	12.21	794.09	6.94	818.95	44.25	0.0041	0.0073	0.4717	0.0041	0.4865	0.0263
27	Jessore	***4.47***	19.79	613.26	***2.40***	367.87	11.38	0.0044	0.0194	0.6017	0.0024	0.3609	0.0112
28	Khulna	13.21	22.90	836.78	6.09	661.89	4250.32	0.0023	0.0040	0.1445	0.0011	0.1143	0.7339
29	Satkhira	***3.61***	13.24	625.17	7.70	460.14	57.63	0.0031	0.0113	0.5355	0.0066	0.3941	0.0494
30	Barisal	***5.38***	14.28	857.16	7.35	875.98	45.68	0.0030	0.0079	0.4747	0.0041	0.4851	0.0253
31	Bhola	***5.46***	8.76	850.59	***5.61***	1014.24	22.93	0.0029	0.0113	0.4459	0.0029	0.5317	0.0120
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1155	0.2534	16.0078	0.1219	13.4029	1.1050

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B45. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

May

		Scaling					
	Rank	2	1	5	3	6	4
	Comparison	1.06	**1.00**	112.33	1.18	120.95	2.22

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	7.51	***5.66***	469.83	10.66	352.00	6.53	0.0088	0.0066	0.5513	0.0125	0.4131	0.0077
2	Chittagong	7.53	***3.24***	1046.54	***3.32***	1547.91	13.49	0.0029	0.0012	0.3991	0.0013	0.5903	0.0051
3	Cox's Bazar	***5.91***	***2.21***	1018.10	***4.81***	1497.44	***5.51***	0.0023	0.0009	0.4018	0.0019	0.5909	0.0022
4	Dinajpur	***3.08***	8.07	466.50	***2.25***	289.18	***1.10***	0.0040	0.0105	0.6057	0.0029	0.3755	0.0014
5	Faridpur	***5.47***	***2.21***	740.63	18.48	786.45	***2.24***	0.0035	0.0014	0.4761	0.0119	0.5056	0.0014
6	Feni	12.53	8.76	992.18	15.57	1425.19	10.99	0.0051	0.0036	0.4025	0.0063	0.5781	0.0045
7	Hatiya	9.10	7.38	1162.80	9.23	1349.34	7.07	0.0036	0.0029	0.4569	0.0036	0.5302	0.0028
8	Ishurdi	8.38	***1.17***	541.78	8.07	386.83	7.52	0.0088	0.0012	0.5681	0.0085	0.4056	0.0079
9	Khepupara	10.22	10.14	1109.15	7.98	1675.98	***4.01***	0.0036	0.0036	0.3937	0.0028	0.5949	0.0014
10	Kutubdia	***2.80***	***2.67***	796.25	***3.25***	1178.15	***2.74***	0.0014	0.0013	0.4010	0.0016	0.5933	0.0014
11	Maijdicourt	6.52	***0.48***	574.50	6.50	552.23	7.96	0.0057	0.0004	0.5004	0.0057	0.4810	0.0069
12	Madaripur	6.09	***4.28***	966.47	***4.45***	1047.35	***5.51***	0.0030	0.0021	0.4751	0.0022	0.5149	0.0027
13	Mongla	6.90	***2.09***	899.80	7.65	1200.23	***4.43***	0.0033	0.0010	0.4242	0.0036	0.5659	0.0021
14	Mymensingh	8.52	8.07	568.84	7.60	497.99	11.95	0.0077	0.0073	0.5157	0.0069	0.4515	0.0108
15	Patuakhali	***2.65***	***3.24***	762.28	***1.80***	863.46	***4.20***	0.0016	0.0020	0.4655	0.0011	0.5273	0.0026
16	Rajshahi	***2.90***	***4.28***	562.75	***3.74***	407.03	***3.90***	0.0029	0.0043	0.5716	0.0038	0.4134	0.0040
17	Rangamati	***5.96***	***0.83***	615.66	9.08	582.07	***5.21***	0.0049	0.0007	0.5051	0.0075	0.4776	0.0043
18	Rangpur	***4.59***	***2.55***	494.82	7.45	397.85	6.74	0.0050	0.0028	0.5414	0.0081	0.4353	0.0074
19	Shitakunda	7.68	***3.24***	741.34	7.63	840.48	17.01	0.0047	0.0020	0.4584	0.0047	0.5197	0.0105
20	Srimongol	***2.50***	***4.28***	536.21	***4.56***	480.99	17.50	0.0024	0.0041	0.5126	0.0044	0.4598	0.0167
21	Sylhet	13.60	13.59	568.75	13.05	418.68	63.66	0.0125	0.0124	0.5212	0.0120	0.3836	0.0583
22	Tangail	***4.51***	***4.82***	544.14	***3.16***	580.64	***3.23***	0.0040	0.0042	0.4771	0.0028	0.5091	0.0028
23	Teknaf	***3.59***	***5.66***	1465.24	6.16	2861.78	***1.57***	0.0008	0.0124	0.3373	0.0014	0.6588	0.0004
24	Comilla	11.96	12.55	839.39	6.07	860.63	19.69	0.0068	0.0072	0.4796	0.0035	0.4917	0.0112
25	Dhaka	16.83	***0.83***	662.36	19.37	603.78	13.68	0.0128	0.0006	0.5030	0.0147	0.4585	0.0104
26	Chandpur	8.08	6.34	890.30	9.36	948.12	11.22	0.0043	0.0034	0.4752	0.0050	0.5061	0.0060
27	Jessore	***3.53***	***4.62***	686.58	7.35	709.27	***3.68***	0.0025	0.0033	0.4852	0.0052	0.5012	0.0026
28	Khulna	***5.30***	17.72	1054.15	***5.39***	1213.05	134.77	0.0022	0.0073	0.4337	0.0022	0.4991	0.0555
29	Satkhira	9.81	18.41	1040.95	7.75	1137.85	82.91	0.0043	0.0080	0.4530	0.0034	0.4952	0.0361
30	Barisal	***2.97***	7.38	980.49	***1.01***	1428.57	***1.88***	0.0012	0.0030	0.4048	0.0004	0.5898	0.0008
31	Bhola	***4.12***	6.34	1003.21	***3.50***	1504.39	***3.07***	0.0016	0.0080	0.3974	0.0014	0.5959	0.0012
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1382	0.1299	14.5936	0.1532	15.7127	0.2890

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B46. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

June

		Scaling					
	Rank	2	4	5	3	6	1
	Comparison	1.03	2.75	235.82	1.04	283.91	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	10.59	13.59	1114.06	10.40	1550.12	6.20	0.0039	0.0050	0.4119	0.0038	0.5731	0.0023
2	Chittagong	***2.40***	17.72	914.43	***0.78***	944.81	***5.80***	0.0013	0.0094	0.4849	0.0004	0.5010	0.0031
3	Cox's Bazar	***3.85***	13.59	733.63	***3.85***	725.47	***3.37***	0.0026	0.0092	0.4944	0.0026	0.4889	0.0023
4	Dinajpur	7.11	9.10	1067.98	***4.28***	1647.99	***3.03***	0.0026	0.0033	0.3898	0.0016	0.6016	0.0011
5	Faridpur	***5.49***	9.45	1012.90	***3.57***	1318.78	***5.64***	0.0023	0.0040	0.4300	0.0015	0.5598	0.0024
6	Feni	6.21	16.34	1239.90	***1.43***	1751.83	6.13	0.0021	0.0054	0.4103	0.0005	0.5797	0.0020
7	Hatiya	***4.86***	10.48	1123.37	***4.37***	1818.29	***2.25***	0.0016	0.0035	0.3791	0.0015	0.6135	0.0008
8	Ishurdi	6.51	14.28	981.21	8.86	984.00	***2.55***	0.0033	0.0071	0.4912	0.0044	0.4926	0.0013
9	Khepupara	***3.14***	10.48	1072.84	***4.60***	1652.67	***0.95***	0.0011	0.0038	0.3909	0.0017	0.6021	0.0003
10	Kutubdia	***4.23***	***5.58***	698.66	***3.90***	852.97	8.26	0.0027	0.0035	0.4440	0.0025	0.5420	0.0052
11	Maijdicourt	***3.16***	***4.97***	672.50	6.38	548.31	***2.37***	0.0026	0.0040	0.5433	0.0052	0.4430	0.0019
12	Madaripur	6.04	***4.62***	941.62	13.35	1298.57	***3.89***	0.0027	0.0020	0.4152	0.0059	0.5725	0.0017
13	Mongla	***1.70***	7.55	691.83	***2.35***	871.13	***0.90***	0.0011	0.0048	0.4391	0.0015	0.5529	0.0006
14	Mymensingh	6.03	8.41	1176.90	***2.77***	1203.89	***2.73***	0.0025	0.0035	0.4902	0.0012	0.5015	0.0011
15	Patuakhali	***2.88***	***3.93***	735.99	***1.10***	729.37	***4.10***	0.0019	0.0027	0.4982	0.0007	0.4937	0.0028
16	Rajshahi	***4.17***	7.38	648.24	6.32	595.05	***4.09***	0.0033	0.0058	0.5123	0.0050	0.4703	0.0032
17	Rangamati	6.19	***3.93***	895.08	***5.29***	961.97	7.07	0.0033	0.0021	0.4762	0.0028	0.5118	0.0038
18	Rangpur	***2.77***	***5.31***	1189.28	6.50	1929.66	***5.38***	0.0009	0.0017	0.3789	0.0021	0.6148	0.0017
19	Shitakunda	11.54	14.62	1115.03	***5.42***	1405.42	9.41	0.0045	0.0057	0.4353	0.0021	0.5487	0.0037
20	Srimongol	***1.80***	13.59	1281.86	***2.27***	2060.41	***3.32***	0.0005	0.0040	0.3811	0.0007	0.6126	0.0010
21	Sylhet	***2.26***	9.79	927.60	***1.54***	1182.07	***3.94***	0.0011	0.0046	0.4361	0.0007	0.5557	0.0019
22	Tangail	***3.03***	13.00	931.58	7.33	1223.15	***1.15***	0.0014	0.0060	0.4275	0.0034	0.5613	0.0005
23	Teknaf	***0.63***	8.07	855.15	***1.48***	1045.46	***2.25***	0.0003	0.0046	0.4470	0.0008	0.5465	0.0012
24	Comilla	8.14	18.41	1163.51	***4.70***	1495.07	10.79	0.0030	0.0068	0.4308	0.0017	0.5536	0.0040
25	Dhaka	***3.92***	8.76	876.62	***2.04***	1056.26	***3.16***	0.0020	0.0045	0.4494	0.0010	0.5415	0.0016
26	Chandpur	***2.76***	12.21	1079.32	***2.12***	1467.86	6.27	0.0011	0.0047	0.4199	0.0008	0.5710	0.0024
27	Jessore	***1.66***	16.69	698.92	***0.61***	534.34	***0.83***	0.0013	0.0133	0.5578	0.0005	0.4264	0.0007
28	Khulna	***1.95***	12.90	894.32	***2.04***	1018.47	***3.92***	0.0010	0.0067	0.4625	0.0011	0.5267	0.0020
29	Satkhira	***0.41***	13.93	843.25	***1.40***	866.69	***2.16***	0.0002	0.0081	0.4880	0.0008	0.5016	0.0012
30	Barisal	***2.99***	7.38	875.66	***3.50***	945.55	***0.74***	0.0016	0.0040	0.4770	0.0019	0.5151	0.0004
31	Bhola	***2.19***	9.45	922.18	***2.25***	1259.90	***1.70***	0.0010	0.0081	0.4196	0.0010	0.5733	0.0008
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0609	0.1621	13.9120	0.0613	16.7489	0.0590

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B47. Determination of Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

July

								Scaling					
								Rank	1	4	5	2	6	3
								Comparison	**1.00**	3.38	318.12	1.01	517.02	2.32
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Bogra	***1.65***	11.86	1137.30	***1.47***	1705.88	***1.76***		0.0006	0.0041	0.3977	0.0005	0.5965	0.0006
2	Chittagong	***3.08***	***3.93***	1017.24	***2.28***	1695.59	***4.02***		0.0011	0.0014	0.3731	0.0008	0.6220	0.0015
3	Cox's Bazar	***5.25***	9.45	893.39	***4.28***	1174.36	8.49		0.0025	0.0045	0.4264	0.0020	0.5605	0.0040
4	Dinajpur	***2.16***	16.69	997.44	6.03	1195.00	***3.38***		0.0010	0.0075	0.4492	0.0027	0.5381	0.0015
5	Faridpur	***1.23***	11.86	1412.71	***2.32***	2705.68	23.98		0.0003	0.0029	0.3398	0.0006	0.6507	0.0058
6	Feni	***4.96***	6.34	1291.11	***4.74***	2545.17	10.94		0.0013	0.0016	0.3342	0.0012	0.6588	0.0028
7	Hatiya	***2.10***	15.66	2555.13	***4.08***	8466.54	7.56		0.0002	0.0014	0.2312	0.0004	0.7661	0.0007
8	Ishurdi	***2.46***	10.48	1391.74	***4.62***	2541.09	***0.87***		0.0006	0.0027	0.3522	0.0012	0.6431	0.0002
9	Khepupara	***1.12***	14.28	1454.82	***0.91***	2790.28	***1.11***		0.0003	0.0033	0.3413	0.0002	0.6546	0.0003
10	Kutubdia	***4.03***	23.08	1256.99	***3.63***	1904.13	7.14		0.0013	0.0072	0.3929	0.0011	0.5952	0.0022
11	Maijdicourt	***1.65***	***5.66***	803.83	***4.09***	1019.73	6.98		0.0009	0.0031	0.4364	0.0022	0.5536	0.0038
12	Madaripur	***1.79***	21.86	1955.30	***0.79***	4126.25	***1.44***		0.0003	0.0036	0.3202	0.0001	0.6756	0.0002
13	Mongla	8.87	20.73	1380.81	***4.92***	1684.16	***4.01***		0.0029	0.0067	0.4449	0.0016	0.5427	0.0013
14	Mymensingh	***5.69***	***3.24***	1311.01	11.09	2699.83	***3.99***		0.0014	0.0008	0.3249	0.0027	0.6691	0.0010
15	Patuakhali	***1.98***	12.90	1304.00	***0.67***	2269.20	***0.74***		0.0006	0.0036	0.3633	0.0002	0.6322	0.0002
16	Rajshahi	***3.95***	12.21	1348.46	***2.98***	2390.50	***4.11***		0.0011	0.0032	0.3584	0.0008	0.6354	0.0011
17	Rangamati	***5.70***	19.79	1173.17	***4.30***	1462.97	11.11		0.0021	0.0074	0.4382	0.0016	0.5465	0.0042
18	Rangpur	***2.85***	***3.59***	952.74	***5.08***	1398.29	***2.64***		0.0012	0.0015	0.4028	0.0021	0.5912	0.0011
19	Shitakunda	***1.70***	12.90	1197.63	***3.06***	1801.50	***3.42***		0.0006	0.0043	0.3965	0.0010	0.5965	0.0011
20	Srimongol	6.01	8.07	1099.97	***4.58***	1193.60	***5.75***		0.0026	0.0035	0.4745	0.0020	0.5149	0.0025
21	Sylhet	7.55	7.38	812.83	***4.98***	1016.63	***4.34***		0.0041	0.0040	0.4385	0.0027	0.5484	0.0023
22	Tangail	9.66	***5.27***	1140.57	6.96	1911.57	7.55		0.0031	0.0017	0.3701	0.0023	0.6203	0.0024
23	Teknaf	7.01	8.76	1486.83	***3.46***	2742.83	10.60		0.0016	0.0040	0.3491	0.0008	0.6439	0.0025
24	Comilla	***3.64***	16.34	1156.06	7.68	1675.56	74.72		0.0012	0.0056	0.3940	0.0026	0.5711	0.0255
25	Dhaka	***5.14***	17.72	1505.22	6.56	2541.48	17.87		0.0013	0.0043	0.3677	0.0016	0.6208	0.0044
26	Chandpur	***1.95***	10.83	1266.59	***0.33***	2234.95	6.25		0.0006	0.0031	0.3597	0.0001	0.6348	0.0018
27	Jessore	***0.50***	10.14	1106.95	***1.92***	1604.42	***2.52***		0.0002	0.0037	0.4060	0.0007	0.5885	0.0009
28	Khulna	***0.71***	13.93	1285.26	***0.72***	2106.65	***1.85***		0.0002	0.0041	0.3770	0.0002	0.6179	0.0005
29	Satkhira	***4.19***	34.28	1692.02	***3.02***	2435.18	15.80		0.0010	0.0082	0.4044	0.0007	0.5820	0.0038
30	Barisal	***1.55***	13.93	1465.58	***1.18***	2812.98	***2.43***		0.0004	0.0032	0.3410	0.0003	0.6545	0.0006
31	Bhola	***2.36***	6.69	1447.09	***0.17***	3375.71	21.75		0.0005	0.0082	0.2981	0.0000	0.6955	0.0045
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.0368	0.1245	11.7039	0.0372	19.0211	0.0853

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B48. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

August

		Scaling					
	Rank	1	4	5	2	6	3
	Comparison	**1.00**	2.15	247.01	1.19	402.58	1.89

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***1.66***	10.83	1035.41	7.08	1460.26	6.50	0.0007	0.0043	0.4106	0.0028	0.5791	0.0026
2	Chittagong	8.67	8.07	1275.96	6.63	2312.86	10.65	0.0024	0.0022	0.3522	0.0018	0.6384	0.0029
3	Cox's Bazar	***4.12***	6.34	824.36	***3.11***	1047.30	10.79	0.0022	0.0033	0.4348	0.0016	0.5524	0.0057
4	Dinajpur	***3.20***	12.55	969.07	***2.42***	1228.52	6.82	0.0014	0.0056	0.4360	0.0011	0.5527	0.0031
5	Faridpur	***1.28***	9.10	1318.91	***4.33***	2399.53	***2.07***	0.0003	0.0024	0.3531	0.0012	0.6424	0.0006
6	Feni	7.23	7.03	1227.36	9.51	2219.14	9.17	0.0021	0.0020	0.3527	0.0027	0.6378	0.0026
7	Hatiya	***4.01***	31.17	2223.11	***3.69***	4674.14	***4.85***	0.0006	0.0045	0.3203	0.0005	0.6734	0.0007
8	Ishurdi	13.19	***5.66***	1342.11	14.17	2648.97	11.25	0.0033	0.0014	0.3326	0.0035	0.6564	0.0028
9	Khepupara	***1.86***	7.72	1352.90	***1.97***	2824.26	7.96	0.0004	0.0018	0.3224	0.0005	0.6730	0.0019
10	Kutubdia	9.84	8.92	1334.79	***3.53***	3102.32	14.07	0.0022	0.0020	0.2984	0.0008	0.6935	0.0031
11	Maijdicourt	8.44	7.38	849.78	9.52	1093.92	***5.09***	0.0043	0.0037	0.4305	0.0048	0.5541	0.0026
12	Madaripur	***0.19***	10.14	1264.67	***4.39***	2265.06	8.42	0.0001	0.0029	0.3560	0.0012	0.6375	0.0024
13	Mongla	***3.90***	8.00	1045.40	***5.57***	2026.42	9.61	0.0013	0.0026	0.3373	0.0018	0.6539	0.0031
14	Mymensingh	***1.26***	7.38	1255.82	***2.29***	2408.29	***1.79***	0.0003	0.0020	0.3415	0.0006	0.6550	0.0005
15	Patuakhali	***2.00***	11.52	962.93	***1.75***	1300.24	***1.84***	0.0009	0.0051	0.4223	0.0008	0.5702	0.0008
16	Rajshahi	***3.09***	6.00	1252.19	6.60	2340.52	8.38	0.0009	0.0017	0.3462	0.0018	0.6471	0.0023
17	Rangamati	***5.29***	***3.93***	785.27	***4.67***	1036.66	***4.16***	0.0029	0.0021	0.4268	0.0025	0.5634	0.0023
18	Rangpur	***2.38***	7.72	1019.01	***3.33***	1530.08	***2.17***	0.0009	0.0030	0.3973	0.0013	0.5966	0.0008
19	Shitakunda	***3.04***	***4.97***	798.45	6.42	1051.98	***2.93***	0.0016	0.0027	0.4275	0.0034	0.5632	0.0016
20	Srimongol	***1.36***	13.24	1291.12	***4.44***	2112.31	19.63	0.0004	0.0038	0.3751	0.0013	0.6137	0.0057
21	Sylhet	***2.22***	14.28	897.49	***3.35***	1035.71	***1.81***	0.0011	0.0073	0.4591	0.0017	0.5298	0.0009
22	Tangail	***4.56***	***3.91***	990.47	7.45	1829.40	6.07	0.0016	0.0014	0.3485	0.0026	0.6437	0.0021
23	Teknaf	***5.53***	***4.28***	1311.78	***3.96***	2540.05	9.05	0.0014	0.0073	0.3386	0.0010	0.6556	0.0023
24	Comilla	10.66	***3.59***	1032.33	7.85	1271.67	9.25	0.0046	0.0015	0.4420	0.0034	0.5445	0.0040
25	Dhaka	***2.89***	11.86	1438.63	***4.44***	2690.89	6.94	0.0007	0.0029	0.3462	0.0011	0.6475	0.0017
26	Chandpur	21.15	***2.21***	1296.47	13.70	2265.81	27.46	0.0058	0.0006	0.3575	0.0038	0.6247	0.0076
27	Jessore	***2.18***	6.69	1270.98	***2.17***	2302.64	***0.92***	0.0006	0.0019	0.3545	0.0006	0.6422	0.0003
28	Khulna	***1.79***	9.45	1075.57	***2.18***	1661.12	27.93	0.0006	0.0034	0.3872	0.0008	0.5979	0.0101
29	Satkhira	***0.94***	18.41	1177.76	***0.77***	1579.88	***3.51***	0.0003	0.0066	0.4235	0.0003	0.5680	0.0013
30	Barisal	***2.31***	10.83	1260.60	9.43	2255.13	12.10	0.0007	0.0030	0.3551	0.0027	0.6352	0.0034
31	Bhola	***2.02***	12.21	1115.28	***5.64***	1675.95	22.03	0.0007	0.0066	0.3937	0.0020	0.5916	0.0078
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0473	0.1018	11.6793	0.0561	19.0347	0.0894

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B49. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

September

		Scaling					
	Rank	1	4	5	3	6	2
	Comparison	**1.00**	1.18	174.93	1.15	286.06	1.09

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	9.96	***3.93***	998.10	11.66	1291.60	10.86	0.0043	0.0017	0.4291	0.0050	0.5553	0.0047
2	Chittagong	***4.55***	12.21	1573.46	***0.96***	3011.30	6.48	0.0010	0.0026	0.3414	0.0002	0.6534	0.0014
3	Cox's Bazar	***4.29***	6.69	1117.39	7.09	1277.20	***3.34***	0.0018	0.0028	0.4625	0.0029	0.5286	0.0014
4	Dinajpur	***2.79***	10.83	856.96	***1.08***	1029.56	***5.12***	0.0015	0.0057	0.4495	0.0006	0.5401	0.0027
5	Faridpur	***1.76***	***3.93***	1137.91	***2.81***	2049.17	***4.84***	0.0005	0.0012	0.3556	0.0009	0.6403	0.0015
6	Feni	6.04	16.34	1442.85	7.35	2585.10	6.08	0.0015	0.0040	0.3551	0.0018	0.6361	0.0015
7	Hatiya	9.80	9.45	1182.22	16.06	1901.67	9.79	0.0031	0.0030	0.3778	0.0051	0.6078	0.0031
8	Ishurdi	6.37	***3.93***	1258.87	***4.60***	1609.46	***3.79***	0.0022	0.0014	0.4360	0.0016	0.5575	0.0013
9	Khepupara	11.45	***2.21***	1603.62	11.15	4304.86	14.66	0.0019	0.0004	0.2696	0.0019	0.7238	0.0025
10	Kutubdia	8.88	***5.58***	1345.43	6.33	3425.90	***3.89***	0.0019	0.0012	0.2805	0.0013	0.7143	0.0008
11	Maijdicourt	10.64	8.76	1019.03	19.03	1536.21	***5.51***	0.0041	0.0034	0.3921	0.0073	0.5910	0.0021
12	Madaripur	6.27	14.97	1881.65	***3.44***	4244.66	14.22	0.0010	0.0024	0.3052	0.0006	0.6885	0.0023
13	Mongla	***3.75***	8.45	1072.14	***3.10***	2022.31	***4.59***	0.0012	0.0027	0.3443	0.0010	0.6494	0.0015
14	Mymensingh	***2.24***	***4.62***	792.42	10.55	1047.93	***2.64***	0.0012	0.0025	0.4259	0.0057	0.5633	0.0014
15	Patuakhali	8.33	***1.17***	1127.57	15.23	2088.30	11.01	0.0026	0.0004	0.3468	0.0047	0.6422	0.0034
16	Rajshahi	7.02	***2.90***	1035.56	***5.70***	1719.83	6.06	0.0025	0.0010	0.3729	0.0021	0.6193	0.0022
17	Rangamati	***4.47***	***1.86***	1066.10	7.56	1693.78	***4.88***	0.0016	0.0007	0.3837	0.0027	0.6096	0.0018
18	Rangpur	***0.34***	9.45	920.16	***1.17***	1175.64	***1.59***	0.0002	0.0045	0.4364	0.0006	0.5576	0.0008
19	Shitakunda	9.24	7.72	1270.00	16.66	2088.52	***4.05***	0.0027	0.0023	0.3739	0.0049	0.6150	0.0012
20	Srimongol	***2.50***	6.69	873.54	***4.10***	1190.87	6.85	0.0012	0.0032	0.4191	0.0020	0.5713	0.0033
21	Sylhet	20.61	***4.62***	757.31	16.25	913.86	16.41	0.0119	0.0027	0.4380	0.0094	0.5285	0.0095
22	Tangail	12.07	***3.91***	833.24	10.06	1390.16	11.96	0.0053	0.0017	0.3685	0.0044	0.6147	0.0053
23	Teknaf	7.06	17.72	1733.01	6.49	3473.33	***3.14***	0.0013	0.0027	0.3307	0.0012	0.6628	0.0006
24	Comilla	***5.86***	10.14	1161.49	***1.97***	1815.46	6.23	0.0020	0.0034	0.3870	0.0007	0.6049	0.0021
25	Dhaka	***0.43***	14.28	999.73	***0.64***	1243.69	***1.79***	0.0002	0.0063	0.4422	0.0003	0.5502	0.0008
26	Chandpur	***5.23***	***3.93***	1243.39	7.22	2442.63	8.83	0.0014	0.0011	0.3350	0.0019	0.6582	0.0024
27	Jessore	***3.09***	8.76	1155.60	***1.61***	1925.24	***2.64***	0.0010	0.0028	0.3731	0.0005	0.6217	0.0009
28	Khulna	6.03	6.69	1260.16	6.24	2280.61	7.74	0.0017	0.0019	0.3532	0.0017	0.6393	0.0022
29	Satkhira	***2.80***	7.38	1284.00	***4.98***	2403.03	8.00	0.0008	0.0020	0.3461	0.0013	0.6477	0.0022
30	Barisal	6.50	18.41	1526.31	***4.11***	2271.38	11.32	0.0017	0.0048	0.3977	0.0011	0.5918	0.0029
31	Bhola	6.37	7.38	1505.61	6.63	3125.68	14.45	0.0014	0.0020	0.3227	0.0014	0.6699	0.0031
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0666	0.0783	11.6516	0.0768	19.0538	0.0726

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B50. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

October

	Scaling					
Rank	1	3	5	2	6	4
Comparison	**1.00**	2.65	217.49	1.10	307.92	12.48

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	12.51	***3.93***	903.92	***2.64***	1237.54	21.98	0.0057	0.0018	0.4142	0.0012	0.5670	0.0101
2	Chittagong	***0.78***	15.66	875.91	***1.03***	945.86	***2.87***	0.0004	0.0085	0.4755	0.0006	0.5135	0.0016
3	Cox's Bazar	***3.83***	30.14	1074.35	***1.21***	1064.69	***3.31***	0.0018	0.0138	0.4934	0.0006	0.4889	0.0015
4	Dinajpur	18.16	19.10	1089.48	11.26	1348.68	308.58	0.0065	0.0068	0.3898	0.0040	0.4825	0.1104
5	Faridpur	8.48	13.24	1251.06	10.40	1949.63	16.88	0.0026	0.0041	0.3850	0.0032	0.5999	0.0052
6	Feni	***1.18***	6.69	1224.28	***4.81***	2348.55	***2.70***	0.0003	0.0019	0.3412	0.0013	0.6545	0.0008
7	Hatiya	16.73	6.69	1196.54	18.12	1949.69	14.53	0.0052	0.0021	0.3736	0.0057	0.6088	0.0045
8	Ishurdi	6.35	6.69	979.32	7.35	1413.91	17.30	0.0026	0.0028	0.4029	0.0030	0.5816	0.0071
9	Khepupara	***5.06***	24.97	1495.31	***4.99***	2290.95	1353.19	0.0010	0.0048	0.2890	0.0010	0.4427	0.2615
10	Kutubdia	***0.83***	14.33	781.69	***3.33***	896.04	12.32	0.0005	0.0084	0.4575	0.0019	0.5244	0.0072
11	Maijdicourt	***1.52***	14.28	1108.12	***3.63***	1606.61	55.04	0.0005	0.0051	0.3973	0.0013	0.5760	0.0197
12	Madaripur	***5.97***	15.66	1354.49	7.29	2213.15	16.75	0.0017	0.0043	0.3749	0.0020	0.6125	0.0046
13	Mongla	***0.86***	11.18	1060.41	***1.22***	1889.36	***2.49***	0.0003	0.0038	0.3576	0.0004	0.6371	0.0008
14	Mymensingh	***2.48***	9.79	1052.71	***2.53***	1531.54	8.84	0.0010	0.0038	0.4037	0.0010	0.5873	0.0034
15	Patuakhali	10.43	22.90	1358.29	11.16	1932.99	407.61	0.0028	0.0061	0.3629	0.0030	0.5164	0.1089
16	Rajshahi	6.78	10.14	1077.83	13.36	1609.27	21.21	0.0025	0.0037	0.3936	0.0049	0.5876	0.0077
17	Rangamati	7.91	20.83	1148.95	***3.71***	1453.76	234.28	0.0028	0.0073	0.4004	0.0013	0.5066	0.0816
18	Rangpur	9.12	13.24	993.71	9.81	1271.09	16.49	0.0039	0.0057	0.4295	0.0042	0.5494	0.0071
19	Shitakunda	***4.18***	6.69	818.29	9.59	1012.17	12.12	0.0022	0.0036	0.4392	0.0051	0.5433	0.0065
20	Srimongol	***3.02***	20.14	1269.11	***0.64***	1816.76	9.62	0.0010	0.0065	0.4069	0.0002	0.5824	0.0031
21	Sylhet	***0.98***	11.52	914.24	***4.82***	1157.57	6.27	0.0005	0.0055	0.4363	0.0023	0.5524	0.0030
22	Tangail	***4.34***	18.45	931.44	***5.44***	1191.45	***3.71***	0.0020	0.0086	0.4323	0.0025	0.5529	0.0017
23	Teknaf	***2.35***	20.48	1281.60	***0.59***	1797.66	7.03	0.0008	0.0055	0.4121	0.0002	0.5781	0.0023
24	Comilla	***2.67***	***4.97***	1073.91	***5.20***	1852.18	6.07	0.0009	0.0017	0.3647	0.0018	0.6289	0.0021
25	Dhaka	***3.12***	***2.21***	846.85	***4.53***	1218.24	***3.83***	0.0015	0.0011	0.4074	0.0022	0.5860	0.0018
26	Chandpur	***0.21***	12.90	1236.42	***5.65***	2053.56	10.65	0.0001	0.0039	0.3725	0.0017	0.6187	0.0032
27	Jessore	***3.41***	9.10	1006.57	***2.48***	1307.69	6.80	0.0015	0.0039	0.4309	0.0011	0.5598	0.0029
28	Khulna	***4.36***	***4.28***	920.20	6.18	1323.32	18.40	0.0019	0.0019	0.4042	0.0027	0.5812	0.0081
29	Satkhira	***2.94***	13.59	1052.86	***3.12***	1346.45	6.51	0.0012	0.0056	0.4341	0.0013	0.5551	0.0027
30	Barisal	***3.24***	11.86	1214.78	***3.10***	1985.92	92.47	0.0010	0.0036	0.3669	0.0009	0.5997	0.0279
31	Bhola	***1.82***	9.10	1127.22	***1.43***	1846.76	12.16	0.0006	0.0056	0.3759	0.0005	0.6159	0.0041
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0571	0.1515	12.4250	0.0631	17.5916	0.7132

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B51. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

November

								Scaling						
								Rank	1	3	5	2	6	4
								Comparison	**1.00**	3.10	255.76	1.07	382.16	7.17
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Bogra	***1.95***	21.17	1129.55	***4.00***	1491.05	***3.94***		0.0007	0.0080	0.4260	0.0015	0.5623	0.0015
2	Chittagong	***1.81***	9.45	670.09	***2.10***	676.82	***2.96***		0.0013	0.0069	0.4915	0.0015	0.4965	0.0022
3	Cox's Bazar	***3.21***	18.41	805.48	***0.85***	738.85	***0.57***		0.0020	0.0117	0.5139	0.0005	0.4714	0.0004
4	Dinajpur	***2.36***	6.69	953.34	***2.63***	1572.61	9.65		0.0009	0.0026	0.3743	0.0010	0.6174	0.0038
5	Faridpur	***1.28***	16.69	1254.54	***0.40***	2072.95	34.62		0.0004	0.0049	0.3711	0.0001	0.6132	0.0102
6	Feni	***0.73***	10.14	1087.96	***1.60***	1748.71	***1.83***		0.0003	0.0036	0.3816	0.0006	0.6134	0.0006
7	Hatiya	17.87	9.45	1215.31	20.01	2007.18	17.50		0.0054	0.0029	0.3697	0.0061	0.6106	0.0053
8	Ishurdi	8.63	6.34	1528.95	8.31	3309.91	13.09		0.0018	0.0013	0.3136	0.0017	0.6789	0.0027
9	Khepupara	***3.99***	14.97	1311.87	8.21	2276.99	10.10		0.0011	0.0041	0.3618	0.0023	0.6279	0.0028
10	Kutubdia	***4.71***	15.58	769.45	***5.08***	867.58	53.45		0.0027	0.0091	0.4484	0.0030	0.5056	0.0311
11	Maijdicourt	***4.71***	23.59	1068.56	7.32	1276.01	64.96		0.0019	0.0096	0.4370	0.0030	0.5219	0.0266
12	Madaripur	7.15	8.41	1225.02	12.03	2221.63	27.30		0.0020	0.0024	0.3499	0.0034	0.6345	0.0078
13	Mongla	***3.45***	10.27	963.77	***1.06***	1679.11	29.06		0.0013	0.0038	0.3587	0.0004	0.6250	0.0108
14	Mymensingh	***2.13***	8.76	1113.31	***4.57***	1795.39	***1.42***		0.0007	0.0030	0.3805	0.0016	0.6137	0.0005
15	Patuakhali	8.29	17.38	1383.92	7.84	2406.49	93.17		0.0021	0.0044	0.3533	0.0020	0.6144	0.0238
16	Rajshahi	***0.92***	7.72	1284.13	***2.59***	2622.85	***5.09***		0.0002	0.0020	0.3273	0.0007	0.6685	0.0013
17	Rangamati	***1.62***	14.28	816.39	***1.44***	930.37	***5.49***		0.0009	0.0081	0.4613	0.0008	0.5258	0.0031
18	Rangpur	***1.58***	9.45	1096.48	***1.46***	1946.44	***1.92***		0.0005	0.0031	0.3586	0.0005	0.6366	0.0006
19	Shitakunda	***3.13***	6.69	730.17	***2.28***	790.19	7.47		0.0020	0.0043	0.4742	0.0015	0.5131	0.0048
20	Srimongol	***2.09***	19.79	835.72	***1.40***	870.75	120.64		0.0011	0.0107	0.4516	0.0008	0.4706	0.0652
21	Sylhet	***1.12***	6.69	1053.90	***1.15***	1685.33	***2.74***		0.0004	0.0024	0.3831	0.0004	0.6126	0.0010
22	Tangail	***3.16***	22.55	1451.30	***3.02***	2793.05	***4.43***		0.0007	0.0053	0.3393	0.0007	0.6530	0.0010
23	Teknaf	7.34	27.72	1247.42	***4.87***	1443.87	***3.08***		0.0027	0.0024	0.4562	0.0018	0.5281	0.0011
24	Comilla	8.83	12.90	1168.06	9.00	1905.94	294.30		0.0026	0.0038	0.3436	0.0026	0.5607	0.0866
25	Dhaka	***4.58***	6.34	978.03	7.09	1599.68	30.13		0.0017	0.0024	0.3725	0.0027	0.6092	0.0115
26	Chandpur	***3.27***	13.24	1252.96	***3.01***	2213.54	84.39		0.0009	0.0037	0.3509	0.0008	0.6200	0.0236
27	Jessore	***5.14***	6.34	1070.15	6.42	1787.27	12.62		0.0018	0.0022	0.3706	0.0022	0.6189	0.0044
28	Khulna	***3.30***	13.59	967.97	***3.30***	1320.43	***3.40***		0.0014	0.0059	0.4187	0.0014	0.5711	0.0015
29	Satkhira	11.20	12.90	1177.79	7.70	1937.78	11.81		0.0035	0.0041	0.3728	0.0024	0.6134	0.0037
30	Barisal	***3.75***	16.00	1256.32	***4.18***	2057.65	***5.26***		0.0011	0.0048	0.3758	0.0013	0.6155	0.0016
31	Bhola	***3.31***	19.79	1271.00	***5.10***	1868.93	***2.39***		0.0010	0.0041	0.4009	0.0016	0.5895	0.0008
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.0477	0.1477	12.1888	0.0510	18.2131	0.3419

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B52. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

December

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	1.98	141.91	1.25	172.34	3.38
1	Bogra	***0.82***	7.72	546.65	***2.62***	547.71	***3.51***
2	Chittagong	7.60	***2.55***	646.29	9.52	853.90	***3.89***
3	Cox's Bazar	6.73	17.38	890.56	***4.98***	1020.93	13.93
4	Dinajpur	***3.56***	6.34	535.49	***5.09***	587.79	***5.57***
5	Faridpur	18.94	10.83	741.93	19.09	889.88	65.24
6	Feni	***3.77***	***3.93***	814.43	***5.28***	1347.12	***5.32***
7	Hatiya	27.65	***5.66***	831.21	28.30	986.30	22.88
8	Ishurdi	***3.26***	***5.31***	710.96	***1.92***	997.76	14.58
9	Khepupara	***3.48***	13.93	937.43	***2.12***	1359.23	16.21
10	Kutubdia	***4.33***	14.75	679.09	***2.41***	597.24	***2.37***
11	Maijdicourt	8.37	***1.17***	724.30	16.84	1057.93	14.54
12	Madaripur	11.94	30.48	1103.11	10.15	1314.61	152.83
13	Mongla	6.78	***3.91***	685.00	15.54	1144.54	11.46
14	Mymensingh	***1.34***	12.90	637.05	***0.66***	660.47	7.92
15	Patuakhali	***3.50***	11.52	878.09	***4.70***	1255.68	37.70
16	Rajshahi	***2.26***	11.17	700.46	***4.98***	847.26	72.42
17	Rangamati	***1.43***	9.10	574.17	***2.01***	481.87	***2.42***
18	Rangpur	8.95	***2.21***	584.35	9.77	738.57	15.60
19	Shitakunda	***4.12***	6.00	687.40	***5.09***	823.21	8.62
20	Srimongol	***0.45***	14.28	478.25	***4.38***	340.87	***1.87***
21	Sylhet	***0.43***	7.38	581.56	***1.14***	615.11	***3.46***
22	Tangail	***3.62***	11.18	587.31	***3.66***	706.29	14.85
23	Teknaf	***2.20***	10.14	953.56	***2.20***	1429.24	11.13
24	Comilla	***4.57***	9.10	879.86	10.04	1364.19	20.63
25	Dhaka	6.20	9.45	726.98	6.55	926.11	8.97
26	Chandpur	***2.41***	7.38	764.30	***2.42***	1111.87	14.56
27	Jessore	7.76	10.14	753.08	8.47	934.11	28.25
28	Khulna	***2.27***	10.48	606.82	***4.69***	621.17	11.12
29	Satkhira	***2.39***	10.83	653.39	***0.89***	687.58	9.63
30	Barisal	***2.47***	9.45	829.06	***3.51***	1203.93	***4.16***
31	Bhola	***3.90***	6.00	803.95	***5.73***	975.09	***5.53***
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99
		0.0963	0.1904	13.6712	0.1207	16.6019	0.3260

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B53. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

Yearly Maximum Monthly of Monthly Average Maximum

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	2	3	5	1	6	4
	Comparison	1.01	2.43	208.91	**1.00**	243.54	16.47
1	Bogra	***5.34***	11.52	747.80	***2.63***	588.34	***2.79***
2	Chittagong	7.18	***4.62***	1202.06	10.46	2309.73	***5.32***
3	Cox's Bazar	***5.41***	9.79	1040.96	***3.52***	1420.78	***2.03***
4	Dinajpur	7.58	6.00	755.16	6.97	479.35	***3.50***
5	Faridpur	***3.67***	14.97	783.76	***0.96***	692.55	***2.65***
6	Feni	***2.54***	10.14	1123.60	***4.26***	1680.15	7.06
7	Hatiya	***1.22***	6.69	1161.45	***0.50***	2012.51	***4.25***
8	Ishurdi	***2.07***	***5.31***	448.31	***1.70***	276.15	6.03
9	Khepupara	***0.73***	10.83	1012.18	***2.58***	1379.54	***1.81***
10	Kutubdia	***4.41***	7.25	1028.32	***5.76***	1798.87	7.19
11	Maijdicourt	***2.41***	7.38	741.68	***1.87***	811.85	12.83
12	Madaripur	***0.96***	12.55	983.77	***1.34***	1178.81	***5.35***
13	Mongla	***3.39***	***3.45***	769.29	***5.93***	840.18	***4.15***
14	Mymensingh	8.14	18.07	1049.51	8.21	1289.10	***3.83***
15	Patuakhali	***1.47***	7.72	843.24	***1.12***	1023.74	***5.08***
16	Rajshahi	***3.00***	11.86	625.38	***2.23***	462.34	***1.74***
17	Rangamati	11.40	14.62	821.45	9.06	782.26	***5.14***
18	Rangpur	8.54	14.28	1440.92	***4.41***	1419.19	***5.41***
19	Shitakunda	***2.73***	9.10	896.77	***2.50***	1086.73	***0.31***
20	Srimongol	***3.62***	14.28	1044.92	***4.73***	946.60	***1.21***
21	Sylhet	***2.62***	***5.31***	1125.97	10.56	1683.52	7.03
22	Tangail	***4.92***	***2.55***	481.92	***3.87***	439.63	***3.17***
23	Teknaf	***2.62***	***4.62***	1606.93	***3.73***	3997.80	***5.14***
24	Comilla	***5.00***	9.45	1200.90	6.31	1916.79	10.52
25	Dhaka	7.12	***4.97***	704.94	***5.14***	648.22	***5.98***
26	Chandpur	***5.05***	12.21	1198.91	11.45	1870.17	***1.84***
27	Jessore	***0.35***	11.86	674.25	***0.77***	533.73	***3.91***
28	Khulna	6.95	29.10	1283.48	8.08	1395.95	19870.61
29	Satkhira	***2.68***	18.41	918.89	***3.48***	867.05	253.82
30	Barisal	***2.26***	14.28	1203.64	***4.19***	1738.51	13.76
31	Bhola	6.93	6.34	1193.10	6.02	2134.42	14.99
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99

Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
0.0039	0.0085	0.5505	0.0019	0.4331	0.0021
0.0020	0.0013	0.3396	0.0030	0.6526	0.0015
0.0022	0.0039	0.4193	0.0014	0.5723	0.0008
0.0060	0.0048	0.6000	0.0055	0.3809	0.0028
0.0024	0.0100	0.5230	0.0006	0.4621	0.0018
0.0009	0.0036	0.3973	0.0015	0.5942	0.0025
0.0004	0.0021	0.3645	0.0002	0.6315	0.0013
0.0028	0.0072	0.6062	0.0023	0.3734	0.0081
0.0003	0.0045	0.4204	0.0011	0.5730	0.0008
0.0015	0.0025	0.3606	0.0020	0.6308	0.0025
0.0015	0.0047	0.4700	0.0012	0.5145	0.0081
0.0004	0.0058	0.4507	0.0006	0.5400	0.0025
0.0021	0.0021	0.4730	0.0036	0.5166	0.0026
0.0034	0.0076	0.4416	0.0035	0.5424	0.0016
0.0008	0.0041	0.4480	0.0006	0.5439	0.0027
0.0027	0.0107	0.5652	0.0020	0.4178	0.0016
0.0069	0.0089	0.4997	0.0055	0.4758	0.0031
0.0030	0.0049	0.4981	0.0015	0.4906	0.0019
0.0014	0.0046	0.4488	0.0012	0.5439	0.0002
0.0018	0.0071	0.5185	0.0023	0.4697	0.0006
0.0009	0.0019	0.3972	0.0037	0.5938	0.0025
0.0053	0.0027	0.5148	0.0041	0.4697	0.0034
0.0005	0.0019	0.2859	0.0007	0.7112	0.0009
0.0016	0.0030	0.3814	0.0020	0.6087	0.0033
0.0052	0.0036	0.5122	0.0037	0.4710	0.0043
0.0016	0.0039	0.3868	0.0037	0.6034	0.0006
0.0003	0.0097	0.5505	0.0006	0.4357	0.0032
0.0003	0.0013	0.0568	0.0004	0.0618	0.8795
0.0013	0.0089	0.4451	0.0017	0.4200	0.1230
0.0008	0.0048	0.4044	0.0014	0.5841	0.0046
0.0021	0.0089	0.3549	0.0018	0.6349	0.0045
0.0663	0.1595	13.6848	0.0655	15.9533	1.0787

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B54. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

Yearly Minimum Monthly of Monthly Average Maximum

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	1.73	99.20	1.20	112.14	8.71

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	8.60	15.66	494.91	9.51	393.26	30.95	0.0090	0.0164	0.5194	0.0100	0.4127	0.0325
2	Chittagong	8.29	8.76	693.85	***5.46***	719.05	***2.94***	0.0058	0.0061	0.4824	0.0038	0.4999	0.0020
3	Cox's Bazar	***1.28***	14.28	886.02	***1.32***	1211.48	***2.18***	0.0006	0.0067	0.4186	0.0006	0.5724	0.0010
4	Dinajpur	17.73	17.38	507.89	11.09	403.39	135.03	0.0162	0.0159	0.4649	0.0101	0.3692	0.1236
5	Faridpur	8.19	11.52	546.83	11.79	530.14	106.68	0.0067	0.0095	0.4500	0.0097	0.4363	0.0878
6	Feni	***1.15***	11.52	701.19	6.48	851.73	12.80	0.0007	0.0073	0.4424	0.0041	0.5374	0.0081
7	Hatiya	***4.99***	***3.93***	814.80	8.00	1418.12	***4.61***	0.0022	0.0017	0.3614	0.0036	0.6290	0.0020
8	Ishurdi	9.74	14.97	594.97	16.53	576.25	351.98	0.0062	0.0096	0.3803	0.0106	0.3683	0.2250
9	Khepupara	***4.09***	6.34	842.09	***2.30***	1306.54	11.22	0.0019	0.0029	0.3876	0.0011	0.6014	0.0052
10	Kutubdia	8.51	***1.83***	651.42	12.47	960.72	10.04	0.0052	0.0011	0.3960	0.0076	0.5840	0.0061
11	Maijdicourt	***2.87***	7.38	684.81	***3.69***	922.78	19.69	0.0017	0.0045	0.4173	0.0022	0.5623	0.0120
12	Madaripur	***5.82***	17.72	631.44	7.13	584.78	62.46	0.0044	0.0135	0.4823	0.0054	0.4466	0.0477
13	Mongla	12.23	***3.00***	444.42	9.29	534.01	15.66	0.0120	0.0029	0.4363	0.0091	0.5243	0.0154
14	Mymensingh	***2.58***	11.86	544.78	***5.44***	533.41	11.73	0.0023	0.0107	0.4909	0.0049	0.4806	0.0106
15	Patuakhali	***2.28***	12.21	752.62	***0.61***	969.17	8.31	0.0013	0.0070	0.4313	0.0004	0.5553	0.0048
16	Rajshahi	9.99	14.62	558.27	11.74	507.72	93.31	0.0084	0.0122	0.4669	0.0098	0.4246	0.0780
17	Rangamati	***2.65***	***2.55***	682.58	***3.63***	939.82	***3.45***	0.0016	0.0016	0.4176	0.0022	0.5749	0.0021
18	Rangpur	10.37	14.62	533.67	16.05	485.18	139.42	0.0086	0.0122	0.4450	0.0134	0.4045	0.1162
19	Shitakunda	***5.77***	***2.55***	702.81	***5.39***	748.76	***3.19***	0.0039	0.0017	0.4786	0.0037	0.5099	0.0022
20	Srimongol	***1.95***	7.72	543.68	***1.40***	579.70	***1.05***	0.0017	0.0068	0.4788	0.0012	0.5105	0.0009
21	Sylhet	***1.27***	10.83	572.84	***1.27***	580.05	***1.16***	0.0011	0.0093	0.4907	0.0011	0.4969	0.0010
22	Tangail	7.71	10.27	424.18	9.11	409.61	31.03	0.0086	0.0115	0.4756	0.0102	0.4593	0.0348
23	Teknaf	***5.28***	6.34	1048.17	***5.39***	1814.61	7.45	0.0018	0.0093	0.3630	0.0019	0.6285	0.0026
24	Comilla	6.76	10.83	639.54	8.34	725.96	75.89	0.0046	0.0074	0.4359	0.0057	0.4948	0.0517
25	Dhaka	***3.17***	13.93	478.57	***2.21***	375.91	35.91	0.0035	0.0153	0.5261	0.0024	0.4132	0.0395
26	Chandpur	7.09	11.17	597.12	15.63	643.30	363.82	0.0043	0.0068	0.3645	0.0095	0.3927	0.2221
27	Jessore	***2.77***	11.52	567.80	***2.82***	561.29	36.53	0.0023	0.0097	0.4801	0.0024	0.4746	0.0309
28	Khulna	6.52	***3.93***	588.15	6.50	727.46	19.59	0.0048	0.0029	0.4350	0.0048	0.5380	0.0145
29	Satkhira	***2.57***	8.76	581.99	7.26	614.32	7.01	0.0021	0.0072	0.4763	0.0059	0.5028	0.0057
30	Barisal	6.58	***3.93***	715.09	12.84	1070.09	24.13	0.0036	0.0021	0.3902	0.0070	0.5839	0.0132
31	Bhola	***1.42***	10.83	688.26	***1.91***	822.00	9.28	0.0009	0.0072	0.4488	0.0012	0.5360	0.0061
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1384	0.2391	13.7339	0.1657	15.5248	1.2052

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B55. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

Yearly Average Monthly of Monthly Average Maximum

		Scaling					
	Rank	1	4	5	2	6	3
	Comparison	**1.00**	2.51	239.03	1.30	510.71	1.51

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	52.94	116.00	2096.47	69.87	155.58	***0.01***	0.0213	0.0466	0.8417	0.0281	0.0625	0.0000
2	Chittagong	***2.03***	***3.93***	1089.37	***2.42***	1867.97	***4.64***	0.0007	0.0013	0.3667	0.0008	0.6289	0.0016
3	Cox's Bazar	8.09	***3.93***	1193.00	6.12	2099.75	***5.17***	0.0024	0.0012	0.3598	0.0018	0.6332	0.0016
4	Dinajpur	***4.82***	12.55	2070.07	8.35	6018.05	***3.61***	0.0006	0.0015	0.2550	0.0010	0.7414	0.0004
5	Faridpur	***1.13***	10.48	1773.53	***0.28***	4589.21	***1.26***	0.0002	0.0016	0.2782	0.0000	0.7198	0.0002
6	Feni	***3.33***	7.38	2092.13	***2.10***	6953.39	13.65	0.0004	0.0008	0.2306	0.0002	0.7665	0.0015
7	Hatiya	***1.67***	6.00	1514.32	***3.19***	3281.69	***5.20***	0.0003	0.0012	0.3147	0.0007	0.6820	0.0011
8	Ishurdi	***1.99***	14.97	1806.93	***1.21***	4204.25	39.07	0.0003	0.0025	0.2978	0.0002	0.6928	0.0064
9	Khepupara	***0.53***	12.21	1836.75	***0.68***	4594.09	7.11	0.0001	0.0019	0.2847	0.0001	0.7121	0.0011
10	Kutubdia	***1.79***	7.67	1395.17	***3.80***	3597.46	22.97	0.0004	0.0015	0.2774	0.0008	0.7154	0.0046
11	Maijdicourt	***2.38***	12.21	1361.70	***3.60***	2640.03	6.57	0.0006	0.0030	0.3382	0.0009	0.6557	0.0016
12	Madaripur	***0.31***	7.72	2160.37	***0.74***	6410.70	***2.27***	0.0000	0.0009	0.2517	0.0001	0.7470	0.0003
13	Mongla	***2.38***	***5.73***	1416.29	***3.52***	3863.80	***1.63***	0.0004	0.0011	0.2676	0.0007	0.7299	0.0003
14	Mymensingh	***2.78***	6.00	1976.61	***4.12***	6119.59	***1.75***	0.0003	0.0007	0.2437	0.0005	0.7545	0.0002
15	Patuakhali	***0.26***	9.10	1390.61	***4.25***	2905.44	***4.19***	0.0001	0.0021	0.3224	0.0010	0.6735	0.0010
16	Rajshahi	***3.03***	7.38	2153.63	***2.76***	7170.32	***5.89***	0.0003	0.0008	0.2305	0.0003	0.7675	0.0006
17	Rangamati	***5.77***	***4.97***	1124.74	15.07	2116.01	***4.14***	0.0018	0.0015	0.3439	0.0046	0.6470	0.0013
18	Rangpur	***3.30***	***4.62***	2196.85	***2.94***	7524.63	***1.75***	0.0003	0.0005	0.2257	0.0003	0.7730	0.0002
19	Shitakunda	***2.14***	***3.93***	1002.05	***2.24***	1667.25	***3.81***	0.0008	0.0015	0.3737	0.0008	0.6218	0.0014
20	Srimongol	***4.34***	15.66	1797.44	***2.83***	3218.06	***1.48***	0.0009	0.0031	0.3566	0.0006	0.6385	0.0003
21	Sylhet	***4.88***	11.86	1463.50	6.40	2668.05	***5.45***	0.0012	0.0029	0.3518	0.0015	0.6413	0.0013
22	Tangail	***1.61***	8.00	1511.65	***2.99***	3916.33	***0.42***	0.0003	0.0015	0.2778	0.0005	0.7198	0.0001
23	Teknaf	***3.41***	***4.62***	1679.54	***4.89***	4826.50	6.52	0.0005	0.0029	0.2574	0.0007	0.7396	0.0010
24	Comilla	***0.61***	11.52	1808.17	***1.97***	4672.19	31.06	0.0001	0.0018	0.2771	0.0003	0.7160	0.0048
25	Dhaka	16.85	***5.31***	1535.40	18.78	2092.39	9.92	0.0046	0.0014	0.4174	0.0051	0.5688	0.0027
26	Chandpur	***0.49***	14.28	2181.89	***0.94***	6273.38	***1.20***	0.0001	0.0017	0.2575	0.0001	0.7405	0.0001
27	Jessore	***2.10***	23.93	2025.93	***0.53***	4272.50	***1.99***	0.0003	0.0038	0.3202	0.0001	0.6753	0.0003
28	Khulna	***5.06***	15.66	1851.13	***1.41***	4288.27	143.68	0.0008	0.0025	0.2936	0.0002	0.6801	0.0228
29	Satkhira	***0.79***	14.62	1386.05	***1.73***	2478.17	6.86	0.0002	0.0038	0.3565	0.0004	0.6374	0.0018
30	Barisal	***1.09***	11.52	1825.02	***1.19***	4724.91	6.71	0.0002	0.0018	0.2778	0.0002	0.7191	0.0010
31	Bhola	***4.63***	10.83	2004.00	***4.55***	5848.51	***2.99***	0.0006	0.0038	0.2545	0.0006	0.7426	0.0004
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0410	0.1030	9.8020	0.0533	20.9432	0.0619

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B56. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

Maximum Monthly Average Maximum Temperature of Total Pre-monsoon(Mar-May)

	Scaling					
Rank	2	3	5	1	6	4
Comparison	1.08	1.89	163.35	**1.00**	185.44	18.18

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	79.68	7.05	926.40	42.77	1616.74	13.05	0.0297	0.0026	0.3449	0.0159	0.6020	0.0049
2	Chittagong	***3.71***	***1.86***	1097.88	***5.97***	1969.14	***4.72***	0.0012	0.0006	0.3561	0.0019	0.6387	0.0015
3	Cox's Bazar	***4.59***	10.48	1059.85	***2.56***	1447.24	***1.29***	0.0018	0.0041	0.4196	0.0010	0.5729	0.0005
4	Dinajpur	7.84	***3.93***	555.35	7.01	423.65	***5.26***	0.0078	0.0039	0.5537	0.0070	0.4224	0.0052
5	Faridpur	***0.45***	7.38	588.33	***5.06***	474.97	***4.54***	0.0004	0.0068	0.5444	0.0047	0.4395	0.0042
6	Feni	***3.09***	7.38	1039.32	***4.79***	1502.82	8.71	0.0012	0.0029	0.4050	0.0019	0.5856	0.0034
7	Hatiya	***1.22***	6.69	1161.45	***0.50***	2012.51	***4.25***	0.0004	0.0021	0.3645	0.0002	0.6315	0.0013
8	Ishurdi	***3.82***	***4.97***	442.86	***1.91***	263.17	8.11	0.0053	0.0069	0.6110	0.0026	0.3631	0.0112
9	Khepupara	***0.73***	10.83	1012.18	***2.58***	1379.54	***1.81***	0.0003	0.0045	0.4204	0.0011	0.5730	0.0008
10	Kutubdia	***4.25***	***4.33***	926.05	***4.21***	1479.73	10.14	0.0018	0.0018	0.3813	0.0017	0.6093	0.0042
11	Maijdicourt	***2.01***	9.10	741.96	***2.31***	771.33	20.90	0.0013	0.0059	0.4794	0.0015	0.4984	0.0135
12	Madaripur	***1.14***	12.55	983.77	***1.41***	1178.57	***4.77***	0.0005	0.0058	0.4508	0.0006	0.5401	0.0022
13	Mongla	***3.39***	***3.45***	769.29	***5.93***	840.18	***4.15***	0.0021	0.0021	0.4730	0.0036	0.5166	0.0026
14	Mymensingh	***1.17***	***5.31***	614.71	***1.05***	587.38	6.81	0.0010	0.0044	0.5053	0.0009	0.4829	0.0056
15	Patuakhali	***1.47***	7.72	843.24	***1.12***	1023.74	***5.08***	0.0008	0.0041	0.4480	0.0006	0.5439	0.0027
16	Rajshahi	***3.64***	10.83	606.45	***3.72***	448.63	***1.21***	0.0034	0.0101	0.5644	0.0035	0.4175	0.0011
17	Rangamati	9.83	11.52	758.56	6.93	692.02	***4.50***	0.0066	0.0078	0.5114	0.0047	0.4665	0.0030
18	Rangpur	***3.08***	***3.24***	604.12	7.84	582.66	8.92	0.0025	0.0027	0.4993	0.0065	0.4816	0.0074
19	Shitakunda	***2.23***	7.03	844.65	***2.63***	974.08	***0.44***	0.0012	0.0038	0.4613	0.0014	0.5320	0.0002
20	Srimongol	***2.47***	10.83	770.41	***0.66***	730.45	***1.69***	0.0016	0.0071	0.5080	0.0004	0.4817	0.0011
21	Sylhet	14.45	20.14	1153.37	15.50	1427.54	51.84	0.0054	0.0075	0.4299	0.0058	0.5321	0.0193
22	Tangail	***3.76***	***2.55***	438.50	***3.77***	363.03	***3.57***	0.0046	0.0031	0.5379	0.0046	0.4453	0.0044
23	Teknaf	***2.49***	***4.62***	1606.93	***3.59***	3996.52	***5.39***	0.0004	0.0075	0.2860	0.0006	0.7112	0.0010
24	Comilla	***3.28***	20.48	1020.68	***2.98***	1108.97	478.62	0.0012	0.0078	0.3874	0.0011	0.4209	0.1816
25	Dhaka	***2.19***	***3.93***	593.08	***2.05***	541.69	***4.13***	0.0019	0.0034	0.5170	0.0018	0.4722	0.0036
26	Chandpur	***3.58***	9.10	1036.16	***3.98***	1510.66	***4.27***	0.0014	0.0035	0.4035	0.0016	0.5883	0.0017
27	Jessore	***0.88***	14.28	663.83	***0.19***	488.59	10.54	0.0007	0.0121	0.5634	0.0002	0.4147	0.0089
28	Khulna	8.69	21.86	1015.79	8.86	1005.40	1491523.35	0.0000	0.0000	0.0007	0.0000	0.0007	0.9986
29	Satkhira	***2.75***	18.41	918.89	***5.28***	866.97	187.53	0.0014	0.0092	0.4595	0.0026	0.4335	0.0938
30	Barisal	***3.75***	11.17	984.90	***3.25***	1263.22	201.73	0.0015	0.0045	0.3991	0.0013	0.5118	0.0817
31	Bhola	***3.40***	8.76	1099.23	6.65	1700.90	144.92	0.0011	0.0092	0.3709	0.0022	0.5739	0.0489
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0907	0.1579	13.6570	0.0836	15.5036	1.5201

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B57. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

Maximum Monthly Average Maximum Temperature of Total Monsoon(Jun-Oct)

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	1.57	3.50	319.24	1.42	494.13	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	9.69	23.93	1849.64	6.02	3193.62	***4.59***	0.0019	0.0047	0.3636	0.0012	0.6277	0.0009
2	Chittagong	***3.02***	25.31	1444.96	***3.49***	2062.66	***4.04***	0.0009	0.0071	0.4078	0.0010	0.5821	0.0011
3	Cox's Bazar	***3.53***	13.59	982.14	***2.95***	962.24	***2.83***	0.0018	0.0069	0.4992	0.0015	0.4891	0.0014
4	Dinajpur	17.91	***3.93***	1420.31	***4.60***	2533.53	12.01	0.0045	0.0010	0.3558	0.0012	0.6346	0.0030
5	Faridpur	***3.88***	10.83	1307.12	***3.95***	2114.86	***0.93***	0.0011	0.0031	0.3798	0.0011	0.6145	0.0003
6	Feni	***0.83***	7.72	1546.44	***4.36***	3472.52	***2.97***	0.0002	0.0015	0.3071	0.0009	0.6897	0.0006
7	Hatiya	7.66	6.00	1428.43	7.65	2348.36	11.00	0.0020	0.0016	0.3750	0.0020	0.6165	0.0029
8	Ishurdi	8.10	19.79	1115.72	12.35	1254.15	***3.26***	0.0034	0.0082	0.4623	0.0051	0.5197	0.0014
9	Khepupara	***2.59***	13.24	1465.96	***1.69***	2819.28	***0.31***	0.0006	0.0031	0.3407	0.0004	0.6552	0.0001
10	Kutubdia	***4.22***	14.33	1330.98	***4.03***	2112.06	***1.54***	0.0012	0.0041	0.3839	0.0012	0.6092	0.0004
11	Maijdicourt	***3.29***	6.34	909.34	***3.27***	1033.53	***4.65***	0.0017	0.0032	0.4638	0.0017	0.5272	0.0024
12	Madaripur	***5.32***	6.00	1370.17	6.56	2435.08	***2.12***	0.0014	0.0016	0.3582	0.0017	0.6366	0.0006
13	Mongla	6.75	7.55	974.85	6.57	1135.21	***2.69***	0.0032	0.0035	0.4569	0.0031	0.5321	0.0013
14	Mymensingh	***1.22***	18.07	1823.04	***1.97***	3846.01	***2.14***	0.0002	0.0032	0.3203	0.0003	0.6756	0.0004
15	Patuakhali	***2.74***	19.79	1368.81	***1.02***	2101.32	***0.12***	0.0008	0.0057	0.3918	0.0003	0.6014	0.0000
16	Rajshahi	21.34	22.55	1133.75	17.74	1288.15	11.29	0.0086	0.0090	0.4544	0.0071	0.5163	0.0045
17	Rangamati	11.12	***3.24***	1238.24	10.65	2531.38	6.75	0.0029	0.0009	0.3257	0.0028	0.6659	0.0018
18	Rangpur	10.41	22.90	2040.74	***2.70***	4087.06	16.97	0.0017	0.0037	0.3302	0.0004	0.6613	0.0027
19	Shitakunda	***5.64***	7.03	1074.56	***3.60***	1773.00	***2.54***	0.0020	0.0025	0.3749	0.0013	0.6186	0.0009
20	Srimongol	***2.40***	6.34	1528.98	***5.09***	3521.89	***2.38***	0.0005	0.0013	0.3017	0.0010	0.6951	0.0005
21	Sylhet	***2.81***	8.07	1125.97	***4.03***	1749.95	***4.17***	0.0010	0.0028	0.3889	0.0014	0.6045	0.0014
22	Tangail	***5.53***	18.45	1250.25	***3.53***	1904.68	***1.87***	0.0017	0.0058	0.3926	0.0011	0.5981	0.0006
23	Teknaf	***2.77***	22.21	1524.15	***2.76***	2499.51	***1.37***	0.0007	0.0028	0.3761	0.0007	0.6167	0.0003
24	Comilla	***1.73***	8.76	1231.38	***3.70***	2174.76	***3.79***	0.0005	0.0026	0.3596	0.0011	0.6351	0.0011
25	Dhaka	***4.99***	9.45	1170.17	***5.86***	1756.67	***2.40***	0.0017	0.0032	0.3967	0.0020	0.5956	0.0008
26	Chandpur	8.17	11.17	1559.74	***4.96***	2451.60	6.37	0.0020	0.0028	0.3859	0.0012	0.6065	0.0016
27	Jessore	7.08	22.90	991.82	***3.08***	842.18	***1.59***	0.0038	0.0123	0.5308	0.0017	0.4507	0.0009
28	Khulna	***3.47***	11.52	1169.05	***2.75***	1642.38	***1.40***	0.0012	0.0041	0.4130	0.0010	0.5802	0.0005
29	Satkhira	***4.66***	17.72	1203.18	10.27	1369.42	***1.71***	0.0018	0.0068	0.4615	0.0039	0.5253	0.0007
30	Barisal	15.87	32.55	1878.22	16.46	3087.98	7.90	0.0031	0.0065	0.3727	0.0033	0.6128	0.0016
31	Bhola	6.72	17.03	1776.98	***5.02***	3643.58	6.71	0.0012	0.0068	0.3257	0.0009	0.6678	0.0012
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0592	0.1322	12.0567	0.0534	18.6617	0.0378

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B58. Determination of Best Fit Distribution

Chi-square values of Temperature(Max) Data for different probability distributions

Maximum Monthly Average Maximum Temperature of Total Post-Monsoon(Nov-Feb)

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	1	4	5	2	6	3
	Comparison	**1.00**	3.51	214.27	1.04	282.82	3.00
1	Bogra	***2.40***	22.36	1136.79	***3.24***	1498.32	6.19
2	Chittagong	***3.02***	8.43	636.67	***3.65***	640.51	***4.62***
3	Cox's Bazar	***2.43***	16.29	750.91	***1.18***	682.61	***0.23***
4	Dinajpur	***2.15***	***5.93***	904.01	***2.66***	1490.76	7.45
5	Faridpur	***3.29***	25.93	1088.86	***5.36***	1317.51	***2.10***
6	Feni	***0.43***	9.50	1043.21	***1.59***	1671.89	***2.19***
7	Hatiya	19.38	9.50	1186.36	21.14	1937.89	18.14
8	Ishurdi	***4.66***	20.57	1349.31	***1.62***	2048.58	***2.13***
9	Khepupara	***5.04***	23.07	1247.61	***5.77***	1778.80	***5.80***
10	Kutubdia	***4.49***	14.61	729.51	***4.64***	821.73	40.16
11	Maijdicourt	***3.45***	17.71	925.48	***5.20***	1104.43	25.45
12	Madaripur	***2.95***	***5.21***	1000.09	***5.78***	1717.94	18.72
13	Mongla	7.94	21.14	818.67	6.13	866.93	***3.79***
14	Mymensingh	***2.82***	10.21	1128.80	***5.69***	1896.11	***0.88***
15	Patuakhali	***4.47***	24.50	968.21	***1.60***	1045.09	***2.92***
16	Rajshahi	***3.03***	19.14	1133.85	***2.65***	1596.28	***0.61***
17	Rangamati	8.42	20.57	713.93	8.32	600.66	9.79
18	Rangpur	***1.64***	8.07	1026.88	***1.25***	1821.30	***1.76***
19	Shitakunda	***2.42***	6.64	709.39	***1.44***	799.08	6.36
20	Srimongol	6.75	13.07	976.99	6.95	1411.08	***2.76***
21	Sylhet	***5.28***	19.86	1023.98	***4.22***	1096.22	***2.82***
22	Tangail	***3.51***	14.95	1165.52	***3.24***	2250.52	***2.79***
23	Teknaf	9.37	25.57	1252.11	8.23	1448.88	***3.64***
24	Comilla	10.89	13.07	1149.01	10.99	1869.89	273.40
25	Dhaka	***2.86***	15.21	990.25	***2.70***	1326.35	8.79
26	Chandpur	***2.12***	17.71	1173.20	***3.42***	1792.82	15.32
27	Jessore	***5.05***	22.36	949.51	***2.63***	984.37	***4.63***
28	Khulna	***1.39***	10.21	729.37	***5.66***	814.50	***5.80***
29	Satkhira	***1.11***	12.36	989.18	***2.28***	1419.13	***1.70***
30	Barisal	***4.49***	20.57	1190.42	***5.18***	1699.91	***4.28***
31	Bhola	***5.90***	17.71	1191.75	***5.80***	1792.36	***3.22***
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99
		0.0613	0.2150	13.1362	0.0637	17.3390	0.1839

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B59. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

January

		Scaling					
	Rank	2	3	5	1	6	4
	Comparison	1.07	2.07	60.71	**1.00**	71.54	2.33

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***3.79***	9.79	271.09	6.65	304.89	21.62	0.0061	0.0159	0.4388	0.0108	0.4935	0.0350
2	Chittagong	***2.44***	22.55	428.30	***4.44***	464.70	62.61	0.0025	0.0229	0.4348	0.0045	0.4718	0.0636
3	Cox's Bazar	8.10	14.62	502.56	9.90	659.15	18.22	0.0067	0.0121	0.4145	0.0082	0.5436	0.0150
4	Dinajpur	8.10	14.62	502.56	9.90	659.15	18.22	0.0067	0.0121	0.4145	0.0082	0.5436	0.0150
5	Faridpur	***4.06***	6.00	322.44	***4.14***	442.56	8.51	0.0052	0.0076	0.4093	0.0053	0.5618	0.0108
6	Feni	***4.83***	***2.90***	301.62	***2.54***	414.48	12.79	0.0065	0.0039	0.4081	0.0034	0.5607	0.0173
7	Hatiya	***5.46***	8.76	294.85	***4.10***	293.83	32.16	0.0085	0.0137	0.4613	0.0064	0.4597	0.0503
8	Ishurdi	***4.93***	6.34	206.72	***0.45***	224.21	14.92	0.0108	0.0139	0.4518	0.0010	0.4900	0.0326
9	Khepupara	10.83	6.00	391.71	15.59	549.52	22.97	0.0109	0.0060	0.3930	0.0156	0.5514	0.0230
10	Kutubdia	24.28	8.50	478.31	26.93	785.69	25.78	0.0180	0.0063	0.3544	0.0200	0.5822	0.0191
11	Maijdicourt	***2.13***	7.72	317.13	***3.03***	382.94	***5.82***	0.0030	0.0107	0.4412	0.0042	0.5328	0.0081
12	Madaripur	***3.82***	***5.31***	271.97	***2.17***	332.58	***5.92***	0.0061	0.0085	0.4374	0.0035	0.5349	0.0095
13	Mongla	***3.78***	***3.50***	287.82	8.01	485.98	7.44	0.0048	0.0044	0.3613	0.0101	0.6101	0.0093
14	Mymensingh	***4.55***	***5.66***	286.99	8.60	390.72	10.52	0.0064	0.0080	0.4059	0.0122	0.5526	0.0149
15	Patuakhali	12.55	10.14	361.89	9.97	421.23	35.83	0.0147	0.0119	0.4249	0.0117	0.4946	0.0421
16	Rajshahi	***5.64***	7.38	222.13	***5.73***	245.43	9.55	0.0114	0.0149	0.4480	0.0116	0.4949	0.0193
17	Rangamati	11.21	8.07	230.87	***5.87***	188.71	6.45	0.0248	0.0179	0.5117	0.0130	0.4183	0.0143
18	Rangpur	***4.41***	7.72	271.65	8.10	372.24	***3.94***	0.0066	0.0116	0.4066	0.0121	0.5572	0.0059
19	Shitakunda	***0.57***	12.90	233.25	***1.82***	201.32	***2.34***	0.0013	0.0285	0.5158	0.0040	0.4452	0.0052
20	Srimongol	***0.98***	10.48	175.65	***0.29***	134.16	***0.24***	0.0030	0.0326	0.5458	0.0009	0.4169	0.0008
21	Sylhet	***0.98***	10.48	175.65	***0.29***	134.16	***0.24***	0.0030	0.0326	0.5458	0.0009	0.4169	0.0008
22	Tangail	6.13	6.18	227.70	***5.29***	313.21	9.37	0.0108	0.0109	0.4010	0.0093	0.5515	0.0165
23	Teknaf	***4.35***	20.48	558.19	***3.03***	719.75	7.34	0.0033	0.0326	0.4251	0.0023	0.5481	0.0056
24	Comilla	***4.29***	7.38	289.29	***3.10***	378.66	6.54	0.0062	0.0107	0.4197	0.0045	0.5494	0.0095
25	Dhaka	6.54	***0.83***	248.89	***3.13***	287.24	7.25	0.0118	0.0015	0.4494	0.0057	0.5186	0.0131
26	Chandpur	6.32	***3.59***	349.89	11.22	556.64	6.26	0.0068	0.0038	0.3746	0.0120	0.5960	0.0067
27	Jessore	***5.24***	20.14	288.37	***5.76***	256.49	9.68	0.0089	0.0344	0.4924	0.0098	0.4379	0.0165
28	Khulna	***1.34***	14.28	254.66	***0.80***	237.78	***0.53***	0.0026	0.0280	0.4999	0.0016	0.4668	0.0010
29	Satkhira	6.54	11.17	305.68	***4.93***	322.20	7.67	0.0099	0.0170	0.4644	0.0075	0.4895	0.0117
30	Barisal	***3.04***	9.10	324.64	***2.00***	437.81	9.71	0.0039	0.0116	0.4129	0.0025	0.5568	0.0123
31	Bhola	7.69	16.00	418.22	***1.00***	558.30	17.04	0.0076	0.0170	0.4107	0.0010	0.5483	0.0167
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.2389	0.4633	13.5752	0.2236	15.9958	0.5215

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B60. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

February

		Scaling					
	Rank	1	4	6	2	5	3
	Comparison	**1.00**	4.51	99.51	1.02	81.59	1.05

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***1.16***	14.28	249.12	***0.37***	176.30	***0.44***	0.0026	0.0323	0.5641	0.0008	0.3992	0.0010
2	Chittagong	***4.17***	8.76	321.82	***3.50***	255.90	***5.34***	0.0070	0.0146	0.5368	0.0058	0.4269	0.0089
3	Cox's Bazar	8.52	15.66	583.52	7.50	728.57	10.02	0.0063	0.0116	0.4310	0.0055	0.5382	0.0074
4	Dinajpur	8.52	15.66	583.52	7.50	728.57	10.02	0.0063	0.0116	0.4310	0.0055	0.5382	0.0074
5	Faridpur	***0.77***	13.59	252.25	***1.02***	178.88	***2.38***	0.0017	0.0303	0.5619	0.0023	0.3985	0.0053
6	Feni	***1.51***	9.45	315.54	***1.06***	303.94	***3.14***	0.0024	0.0149	0.4972	0.0017	0.4789	0.0050
7	Hatiya	***3.05***	10.14	314.65	11.49	275.10	12.64	0.0049	0.0162	0.5018	0.0183	0.4387	0.0202
8	Ishurdi	7.74	10.14	244.66	***2.93***	143.35	6.49	0.0186	0.0244	0.5891	0.0071	0.3452	0.0156
9	Khepupara	***5.31***	13.59	420.67	***5.11***	448.03	***4.51***	0.0059	0.0151	0.4689	0.0057	0.4994	0.0050
10	Kutubdia	***3.50***	***5.58***	347.41	***3.44***	349.32	***2.05***	0.0049	0.0078	0.4884	0.0048	0.4911	0.0029
11	Maijdicourt	***2.01***	19.45	305.10	***3.00***	207.31	***2.68***	0.0037	0.0360	0.5655	0.0056	0.3842	0.0050
12	Madaripur	***0.81***	19.79	249.37	***3.69***	145.34	***3.18***	0.0019	0.0469	0.5907	0.0087	0.3443	0.0075
13	Mongla	***4.39***	10.50	327.60	***0.82***	382.66	***1.32***	0.0060	0.0144	0.4504	0.0011	0.5261	0.0018
14	Mymensingh	***3.98***	17.72	289.66	***3.65***	180.11	***0.96***	0.0080	0.0357	0.5839	0.0074	0.3631	0.0019
15	Patuakhali	***1.59***	11.86	397.65	***0.66***	420.33	***2.19***	0.0019	0.0142	0.4766	0.0008	0.5038	0.0026
16	Rajshahi	***2.33***	13.93	242.46	***0.59***	170.86	***4.64***	0.0054	0.0320	0.5576	0.0014	0.3930	0.0107
17	Rangamati	9.49	***2.55***	237.76	***5.61***	198.38	7.54	0.0206	0.0055	0.5154	0.0122	0.4300	0.0164
18	Rangpur	***1.03***	14.28	203.51	***0.47***	123.34	***2.43***	0.0030	0.0414	0.5898	0.0014	0.3574	0.0071
19	Shitakunda	***3.48***	7.03	260.44	***3.80***	244.91	***2.20***	0.0067	0.0135	0.4991	0.0073	0.4693	0.0042
20	Srimongol	***3.09***	15.66	256.46	***4.53***	151.43	***0.80***	0.0072	0.0362	0.5937	0.0105	0.3506	0.0018
21	Sylhet	***3.09***	15.66	256.46	***4.53***	151.43	***0.80***	0.0072	0.0362	0.5937	0.0105	0.3506	0.0018
22	Tangail	***3.27***	11.18	233.86	***2.76***	134.85	***0.69***	0.0085	0.0289	0.6049	0.0071	0.3488	0.0018
23	Teknaf	***3.01***	9.45	544.37	***4.70***	829.84	7.63	0.0022	0.0362	0.3891	0.0034	0.5932	0.0055
24	Comilla	***2.55***	16.34	353.95	***4.53***	292.82	***1.85***	0.0038	0.0243	0.5267	0.0067	0.4357	0.0027
25	Dhaka	***1.29***	14.28	295.23	***2.18***	211.31	***1.28***	0.0024	0.0272	0.5617	0.0041	0.4021	0.0024
26	Chandpur	***2.90***	17.72	333.66	***1.12***	242.87	***1.31***	0.0048	0.0296	0.5565	0.0019	0.4051	0.0022
27	Jessore	***1.47***	7.38	320.30	***3.67***	348.24	***3.50***	0.0022	0.0108	0.4679	0.0054	0.5087	0.0051
28	Khulna	***1.21***	16.00	286.11	***0.32***	208.08	***1.12***	0.0024	0.0312	0.5579	0.0006	0.4057	0.0022
29	Satkhira	***0.19***	9.10	262.93	***2.02***	212.18	***4.94***	0.0004	0.0185	0.5351	0.0041	0.4318	0.0101
30	Barisal	***1.36***	12.21	281.74	***3.27***	199.52	***0.58***	0.0027	0.0245	0.5650	0.0066	0.4001	0.0012
31	Bhola	***2.13***	19.10	371.71	***2.62***	333.81	***0.29***	0.0029	0.0185	0.5094	0.0036	0.4575	0.0004
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1644	0.7407	16.3608	0.1678	13.4151	0.1730

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B61. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

March

		Scaling					
	Rank	3	1	6	2	5	4
	Comparison	1.10	**1.00**	56.24	1.10	50.78	1.21

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***4.57***	***3.24***	383.48	7.54	396.10	***2.59***	0.0057	0.0041	0.4808	0.0095	0.4967	0.0032
2	Chittagong	11.42	6.00	384.30	8.92	384.88	13.19	0.0141	0.0074	0.4752	0.0110	0.4759	0.0163
3	Cox's Bazar	11.93	***4.62***	489.83	6.35	633.33	9.78	0.0103	0.0040	0.4238	0.0055	0.5479	0.0085
4	Dinajpur	11.93	***4.62***	489.83	6.35	633.33	9.78	0.0103	0.0040	0.4238	0.0055	0.5479	0.0085
5	Faridpur	7.40	***1.52***	341.31	8.01	350.61	***4.84***	0.0104	0.0021	0.4782	0.0112	0.4913	0.0068
6	Feni	***4.37***	***3.24***	321.49	***4.97***	235.12	***2.47***	0.0076	0.0057	0.5624	0.0087	0.4113	0.0043
7	Hatiya	***5.77***	7.72	484.25	8.74	500.49	10.02	0.0057	0.0076	0.4762	0.0086	0.4921	0.0099
8	Ishurdi	7.53	***3.24***	310.45	***3.65***	252.13	***4.53***	0.0129	0.0056	0.5338	0.0063	0.4336	0.0078
9	Khepupara	***4.32***	***3.24***	426.76	***5.82***	410.78	***5.28***	0.0050	0.0038	0.4984	0.0068	0.4798	0.0062
10	Kutubdia	13.30	***5.17***	456.39	13.39	630.58	10.63	0.0118	0.0046	0.4041	0.0119	0.5583	0.0094
11	Maijdicourt	***1.40***	11.86	288.73	6.12	179.04	11.20	0.0028	0.0238	0.5794	0.0123	0.3593	0.0225
12	Madaripur	7.56	***1.86***	318.06	9.71	294.51	***5.44***	0.0119	0.0029	0.4992	0.0152	0.4622	0.0085
13	Mongla	16.11	9.50	489.13	15.64	540.22	15.88	0.0148	0.0087	0.4502	0.0144	0.4972	0.0146
14	Mymensingh	7.17	7.38	392.53	7.14	344.25	***3.31***	0.0094	0.0097	0.5153	0.0094	0.4519	0.0043
15	Patuakhali	***3.05***	6.00	410.89	***5.47***	381.22	***5.64***	0.0038	0.0074	0.5058	0.0067	0.4693	0.0069
16	Rajshahi	6.92	***4.97***	324.15	***1.29***	320.78	***3.00***	0.0105	0.0075	0.4903	0.0019	0.4852	0.0045
17	Rangamati	***3.02***	11.17	293.20	***3.80***	193.50	18.37	0.0058	0.0214	0.5605	0.0073	0.3699	0.0351
18	Rangpur	***1.21***	12.21	337.58	***1.63***	249.91	***0.49***	0.0020	0.0202	0.5598	0.0027	0.4144	0.0008
19	Shitakunda	***3.66***	***3.24***	252.09	***4.02***	158.28	***3.50***	0.0086	0.0076	0.5934	0.0095	0.3726	0.0082
20	Srimongol	6.03	9.45	231.00	***2.56***	110.34	6.11	0.0165	0.0259	0.6320	0.0070	0.3019	0.0167
21	Sylhet	6.03	9.45	231.00	***2.56***	110.34	6.11	0.0165	0.0259	0.6320	0.0070	0.3019	0.0167
22	Tangail	***4.15***	***1.18***	245.72	***4.01***	253.09	***4.42***	0.0081	0.0023	0.4794	0.0078	0.4938	0.0086
23	Teknaf	***1.62***	***5.66***	467.31	***2.89***	530.97	7.03	0.0016	0.0259	0.4602	0.0028	0.5229	0.0069
24	Comilla	12.02	***5.31***	367.87	9.73	302.65	13.33	0.0169	0.0075	0.5175	0.0137	0.4257	0.0188
25	Dhaka	11.61	***4.62***	371.09	10.97	355.68	15.90	0.0151	0.0060	0.4820	0.0143	0.4620	0.0207
26	Chandpur	11.22	***1.17***	358.59	10.94	365.72	9.42	0.0148	0.0015	0.4737	0.0144	0.4831	0.0124
27	Jessore	***2.85***	6.69	367.64	***3.91***	353.49	***3.70***	0.0039	0.0091	0.4980	0.0053	0.4788	0.0050
28	Khulna	11.62	***1.52***	337.37	16.54	315.29	10.40	0.0168	0.0022	0.4870	0.0239	0.4551	0.0150
29	Satkhira	***4.95***	***3.59***	351.03	10.80	326.70	***3.84***	0.0071	0.0051	0.5008	0.0154	0.4661	0.0055
30	Barisal	11.20	***2.55***	318.68	9.48	294.90	9.72	0.0173	0.0039	0.4929	0.0147	0.4561	0.0150
31	Bhola	6.89	***0.48***	352.78	11.95	340.48	6.92	0.0096	0.0051	0.4903	0.0166	0.4732	0.0096
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3076	0.2784	15.6565	0.3072	14.1375	0.3375

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B62. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

April

		Scaling					
	Rank	1	3	6	2	5	4
	Comparison	**1.00**	4.64	171.07	1.53	165.68	38.45

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***3.23***	13.93	527.60	***2.89***	494.25	***3.44***	0.0031	0.0133	0.5047	0.0028	0.4728	0.0033
2	Chittagong	***5.83***	6.69	528.45	9.62	544.60	12.61	0.0053	0.0060	0.4770	0.0087	0.4916	0.0114
3	Cox's Bazar	6.71	10.48	680.55	12.50	858.93	44.35	0.0042	0.0065	0.4218	0.0077	0.5323	0.0275
4	Dinajpur	6.71	10.48	680.55	12.50	858.93	44.35	0.0042	0.0065	0.4218	0.0077	0.5323	0.0275
5	Faridpur	6.37	12.90	566.14	6.49	565.06	14.12	0.0054	0.0110	0.4834	0.0055	0.4825	0.0121
6	Feni	***1.49***	14.28	554.27	***3.83***	541.04	***4.21***	0.0013	0.0128	0.4953	0.0034	0.4835	0.0038
7	Hatiya	***3.28***	15.66	812.41	***2.47***	860.68	***1.04***	0.0019	0.0092	0.4791	0.0015	0.5076	0.0006
8	Ishurdi	***1.43***	12.90	408.07	***0.77***	299.66	***5.22***	0.0020	0.0177	0.5605	0.0011	0.4116	0.0072
9	Khepupara	***4.61***	22.55	686.73	8.68	643.76	1300.15	0.0017	0.0085	0.2575	0.0033	0.2414	0.4876
10	Kutubdia	***1.68***	10.58	460.01	***2.85***	451.93	162.23	0.0015	0.0097	0.4223	0.0026	0.4149	0.1489
11	Maijdicourt	***2.88***	11.86	554.16	***3.64***	564.92	19.08	0.0025	0.0103	0.4792	0.0032	0.4885	0.0165
12	Madaripur	***5.18***	11.86	529.46	***3.07***	502.45	18.02	0.0048	0.0111	0.4948	0.0029	0.4696	0.0168
13	Mongla	***2.46***	12.00	486.51	***4.76***	526.37	96.87	0.0022	0.0106	0.4309	0.0042	0.4662	0.0858
14	Mymensingh	***1.06***	12.21	523.20	***2.26***	524.06	***3.58***	0.0010	0.0114	0.4906	0.0021	0.4914	0.0034
15	Patuakhali	10.82	31.52	789.76	10.92	739.80	1384231.13	0.0000	0.0000	0.0006	0.0000	0.0005	0.9989
16	Rajshahi	***5.45***	19.79	515.27	***5.25***	415.77	***4.70***	0.0056	0.0205	0.5333	0.0054	0.4303	0.0049
17	Rangamati	***2.06***	11.86	394.62	***5.69***	288.04	11.27	0.0029	0.0166	0.5530	0.0080	0.4037	0.0158
18	Rangpur	9.40	23.24	677.12	10.16	681.77	12.21	0.0066	0.0164	0.4789	0.0072	0.4822	0.0086
19	Shitakunda	***1.67***	***5.66***	437.57	***2.45***	428.34	***5.66***	0.0019	0.0064	0.4965	0.0028	0.4860	0.0064
20	Srimongol	***3.56***	31.17	602.77	***4.63***	497.73	***4.57***	0.0031	0.0272	0.5267	0.0040	0.4349	0.0040
21	Sylhet	***3.56***	31.17	602.77	***4.63***	497.73	***4.57***	0.0031	0.0272	0.5267	0.0040	0.4349	0.0040
22	Tangail	***0.62***	11.64	378.16	***0.53***	342.72	***0.44***	0.0008	0.0159	0.5151	0.0007	0.4669	0.0006
23	Teknaf	***5.54***	10.83	682.82	***3.18***	845.64	23.61	0.0035	0.0272	0.4345	0.0020	0.5381	0.0150
24	Comilla	***0.70***	13.59	464.02	6.89	397.93	39.04	0.0008	0.0147	0.5032	0.0075	0.4315	0.0423
25	Dhaka	***3.29***	11.17	476.08	9.46	425.64	6.50	0.0035	0.0120	0.5107	0.0101	0.4566	0.0070
26	Chandpur	***2.04***	12.90	545.49	***1.38***	535.55	10.48	0.0018	0.0116	0.4924	0.0012	0.4834	0.0095
27	Jessore	***1.96***	13.59	605.67	9.31	653.01	18.06	0.0015	0.0104	0.4653	0.0071	0.5017	0.0139
28	Khulna	***0.45***	13.59	539.43	***0.91***	507.93	8.78	0.0004	0.0127	0.5036	0.0008	0.4742	0.0082
29	Satkhira	***5.89***	15.66	533.12	11.24	456.10	27202.74	0.0002	0.0006	0.0189	0.0004	0.0162	0.9638
30	Barisal	***3.55***	13.59	532.06	***5.35***	500.95	142.50	0.0030	0.0113	0.4441	0.0045	0.4182	0.1189
31	Bhola	***1.49***	12.90	610.38	***2.08***	664.81	60.35	0.0011	0.0006	0.4515	0.0015	0.4917	0.0446
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0811	0.3762	13.8740	0.1241	13.4373	3.1187

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B63. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

May

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.31	171.42	1.12	211.56	14.06

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***0.89***	***5.66***	616.03	***3.89***	788.97	***2.02***	0.0006	0.0040	0.4346	0.0027	0.5566	0.0014
2	Chittagong	***0.53***	11.52	675.11	***1.06***	743.56	***1.12***	0.0004	0.0080	0.4711	0.0007	0.5189	0.0008
3	Cox's Bazar	***2.53***	10.14	746.88	***2.96***	954.11	8.89	0.0015	0.0059	0.4328	0.0017	0.5529	0.0052
4	Dinajpur	***2.53***	10.14	746.88	***2.96***	954.11	8.89	0.0015	0.0059	0.4328	0.0017	0.5529	0.0052
5	Faridpur	***3.54***	16.00	671.03	***4.04***	719.13	20.42	0.0025	0.0112	0.4679	0.0028	0.5014	0.0142
6	Feni	***1.68***	16.69	712.93	***0.87***	812.50	***5.24***	0.0011	0.0108	0.4600	0.0006	0.5242	0.0034
7	Hatiya	***1.60***	15.66	855.53	***2.48***	1159.24	73.91	0.0008	0.0074	0.4058	0.0012	0.5498	0.0351
8	Ishurdi	***2.52***	13.59	657.89	***1.99***	714.02	***4.94***	0.0018	0.0097	0.4716	0.0014	0.5119	0.0035
9	Khepupara	***4.33***	8.41	686.12	***2.75***	823.06	11.67	0.0028	0.0055	0.4466	0.0018	0.5357	0.0076
10	Kutubdia	***3.41***	***5.58***	502.97	***3.36***	596.36	13.02	0.0030	0.0050	0.4472	0.0030	0.5302	0.0116
11	Maijdicourt	***5.93***	7.72	774.61	***2.74***	1028.89	***3.06***	0.0033	0.0042	0.4249	0.0015	0.5644	0.0017
12	Madaripur	***1.88***	7.72	599.78	***2.03***	722.46	***3.65***	0.0014	0.0058	0.4484	0.0015	0.5401	0.0027
13	Mongla	***2.45***	***4.00***	674.93	***2.68***	1203.15	***4.50***	0.0013	0.0021	0.3568	0.0014	0.6360	0.0024
14	Mymensingh	7.37	23.24	599.08	12.21	525.85	10263.02	0.0006	0.0020	0.0524	0.0011	0.0460	0.8978
15	Patuakhali	11.20	17.03	1282.08	8.06	2064.11	11.65	0.0033	0.0050	0.3777	0.0024	0.6081	0.0034
16	Rajshahi	***1.66***	9.45	587.58	***3.51***	580.51	***4.48***	0.0014	0.0080	0.4949	0.0030	0.4890	0.0038
17	Rangamati	***1.30***	9.10	495.17	***2.13***	483.71	12.31	0.0013	0.0091	0.4933	0.0021	0.4819	0.0123
18	Rangpur	***2.55***	6.34	572.20	***1.88***	691.87	***3.84***	0.0020	0.0050	0.4475	0.0015	0.5411	0.0030
19	Shitakunda	***2.54***	16.34	798.92	***2.98***	900.95	***1.71***	0.0015	0.0095	0.4636	0.0017	0.5228	0.0010
20	Srimongol	7.71	9.45	701.88	10.45	874.48	10.11	0.0048	0.0059	0.4348	0.0065	0.5418	0.0063
21	Sylhet	7.71	9.45	701.88	10.45	874.48	10.11	0.0048	0.0059	0.4348	0.0065	0.5418	0.0063
22	Tangail	***4.96***	***5.27***	554.59	7.87	812.65	***2.86***	0.0036	0.0038	0.3995	0.0057	0.5854	0.0021
23	Teknaf	***1.25***	6.69	895.77	***2.36***	1438.23	***2.46***	0.0005	0.0059	0.3817	0.0010	0.6129	0.0011
24	Comilla	6.95	***1.52***	721.75	11.00	1202.10	11.19	0.0036	0.0008	0.3693	0.0056	0.6150	0.0057
25	Dhaka	***4.77***	***2.55***	538.94	***2.60***	674.12	6.33	0.0039	0.0021	0.4384	0.0021	0.5484	0.0051
26	Chandpur	***3.25***	11.17	709.73	***3.49***	909.89	29.57	0.0019	0.0067	0.4257	0.0021	0.5458	0.0177
27	Jessore	6.64	16.34	916.08	***3.58***	955.03	8.41	0.0035	0.0086	0.4806	0.0019	0.5010	0.0044
28	Khulna	7.17	9.45	781.63	***4.64***	1098.71	10.17	0.0037	0.0049	0.4089	0.0024	0.5747	0.0053
29	Satkhira	10.68	***3.59***	700.06	12.10	666.88	10.00	0.0076	0.0026	0.4989	0.0086	0.4752	0.0071
30	Barisal	8.24	7.38	763.34	12.31	674.58	6.67	0.0056	0.0050	0.5184	0.0084	0.4581	0.0045
31	Bhola	***3.06***	***3.93***	704.92	***3.27***	970.34	6.45	0.0018	0.0026	0.4166	0.0019	0.5735	0.0038
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0772	0.1785	13.2378	0.0865	16.3378	1.0854

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B64. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

June

		Scaling					
	Rank	2	3	5	1	6	4
	Comparison	1.13	4.95	311.71	**1.00**	482.38	47.65

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***1.69***	11.17	1228.64	***2.99***	1947.36	***0.66***	0.0005	0.0035	0.3849	0.0009	0.6100	0.0002
2	Chittagong	***4.80***	12.55	1055.72	6.46	1640.57	***3.36***	0.0018	0.0046	0.3876	0.0024	0.6024	0.0012
3	Cox's Bazar	***3.17***	21.17	1035.92	***1.12***	1487.25	6.85	0.0012	0.0083	0.4054	0.0004	0.5820	0.0027
4	Dinajpur	***3.17***	21.17	1035.92	***1.12***	1487.25	6.85	0.0012	0.0083	0.4054	0.0004	0.5820	0.0027
5	Faridpur	***1.22***	11.86	902.94	***4.07***	1366.80	***2.28***	0.0005	0.0052	0.3944	0.0018	0.5971	0.0010
6	Feni	6.58	32.55	1478.48	6.92	2426.02	21.15	0.0017	0.0082	0.3723	0.0017	0.6108	0.0053
7	Hatiya	8.99	14.97	1482.27	6.21	2656.91	***3.54***	0.0022	0.0036	0.3552	0.0015	0.6367	0.0008
8	Ishurdi	13.25	27.72	1487.74	6.10	2391.19	***3.12***	0.0034	0.0071	0.3786	0.0016	0.6086	0.0008
9	Khepupara	***4.34***	30.83	1021.92	***2.44***	1172.68	61.78	0.0019	0.0134	0.4455	0.0011	0.5112	0.0269
10	Kutubdia	***2.54***	11.83	558.15	***5.63***	609.71	86.25	0.0020	0.0093	0.4381	0.0044	0.4785	0.0677
11	Maijdicourt	***4.63***	26.69	1170.55	***3.80***	1698.44	***1.41***	0.0016	0.0092	0.4029	0.0013	0.5846	0.0005
12	Madaripur	***0.67***	13.59	1105.50	***1.63***	1871.00	***1.70***	0.0002	0.0045	0.3692	0.0005	0.6249	0.0006
13	Mongla	***3.39***	9.00	912.08	***4.13***	932.88	***1.78***	0.0018	0.0048	0.4895	0.0022	0.5007	0.0010
14	Mymensingh	***2.92***	19.10	1071.70	11.50	1659.61	4475.44	0.0004	0.0026	0.1480	0.0016	0.2292	0.6181
15	Patuakhali	***3.18***	18.41	1247.18	***0.79***	2050.91	***0.64***	0.0010	0.0055	0.3755	0.0002	0.6175	0.0002
16	Rajshahi	9.12	22.21	1334.93	***5.35***	1915.09	***2.74***	0.0028	0.0068	0.4058	0.0016	0.5822	0.0008
17	Rangamati	6.44	28.07	882.61	8.02	954.41	43814.32	0.0001	0.0006	0.0193	0.0002	0.0209	0.9589
18	Rangpur	***4.74***	***1.86***	1277.96	***3.50***	3044.99	***5.49***	0.0011	0.0004	0.2946	0.0008	0.7018	0.0013
19	Shitakunda	***2.14***	6.34	1174.12	***1.30***	2571.96	***3.65***	0.0006	0.0017	0.3123	0.0003	0.6841	0.0010
20	Srimongol	***4.69***	23.59	1433.71	***5.80***	2749.07	6.05	0.0011	0.0056	0.3395	0.0014	0.6510	0.0014
21	Sylhet	***4.69***	23.59	1433.71	***5.80***	2749.07	6.05	0.0011	0.0056	0.3395	0.0014	0.6510	0.0014
22	Tangail	***4.05***	15.27	1046.03	***3.10***	1852.69	***1.12***	0.0014	0.0052	0.3580	0.0011	0.6340	0.0004
23	Teknaf	***1.11***	14.28	947.43	***0.59***	1391.44	***0.10***	0.0005	0.0056	0.4023	0.0003	0.5909	0.0000
24	Comilla	***1.72***	17.72	1420.96	***0.39***	3006.83	6.81	0.0004	0.0040	0.3190	0.0001	0.6750	0.0015
25	Dhaka	***3.04***	17.38	988.34	***1.52***	1310.98	***3.57***	0.0013	0.0075	0.4251	0.0007	0.5639	0.0015
26	Chandpur	8.42	50.83	1366.22	8.84	1564.58	120.78	0.0027	0.0163	0.4379	0.0028	0.5015	0.0387
27	Jessore	***3.03***	15.66	1268.10	***2.00***	2030.78	***2.19***	0.0009	0.0047	0.3818	0.0006	0.6114	0.0007
28	Khulna	6.95	15.66	1170.76	***3.09***	1836.33	***2.71***	0.0023	0.0052	0.3857	0.0010	0.6050	0.0009
29	Satkhira	***0.44***	14.28	1146.34	***1.18***	1994.33	***2.59***	0.0001	0.0045	0.3629	0.0004	0.6313	0.0008
30	Barisal	***2.71***	14.97	1344.66	***0.70***	2009.91	***0.33***	0.0008	0.0044	0.3986	0.0002	0.5958	0.0001
31	Bhola	8.24	11.52	1378.60	***4.93***	1660.86	***2.91***	0.0027	0.0045	0.4495	0.0016	0.5415	0.0009
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0412	0.1807	11.3843	0.0365	17.6174	1.7401

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B65. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

July

								Scaling						
								Rank	1	3	5	2	6	4
								Comparison	**1.00**	2.19	280.29	1.25	713.33	250.43
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Bogra	6.26	8.41	1617.47	6.30	4397.91	6.33		0.0010	0.0014	0.2677	0.0010	0.7278	0.0010
2	Chittagong	6.92	7.38	1517.84	8.63	4265.25	13.95		0.0012	0.0013	0.2608	0.0015	0.7329	0.0024
3	Cox's Bazar	***3.73***	13.24	1766.51	8.15	4973.76	11.13		0.0006	0.0020	0.2607	0.0012	0.7340	0.0016
4	Dinajpur	***3.73***	13.24	1766.51	8.15	4973.76	11.13		0.0006	0.0020	0.2607	0.0012	0.7340	0.0016
5	Faridpur	6.63	16.69	1302.34	***2.08***	2487.42	171.30		0.0017	0.0042	0.3267	0.0005	0.6240	0.0430
6	Feni	28.84	15.66	1877.24	29.41	5446.14	29.30		0.0039	0.0021	0.2528	0.0040	0.7333	0.0039
7	Hatiya	32.88	51.52	1826.13	37.97	2798.65	1.45E+11		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
8	Ishurdi	***5.34***	11.86	1563.34	***2.89***	3908.16	17.27		0.0010	0.0022	0.2838	0.0005	0.7094	0.0031
9	Khepupara	12.12	30.14	1348.75	18.49	2076.89	8.38E+06		0.0000	0.0000	0.0002	0.0000	0.0002	0.9996
10	Kutubdia	***5.14***	11.42	987.44	***5.40***	1876.90	55.81		0.0017	0.0039	0.3356	0.0018	0.6379	0.0190
11	Maijdicourt	***4.39***	25.66	1552.91	***3.65***	2991.02	830.37		0.0008	0.0047	0.2872	0.0007	0.5531	0.1535
12	Madaripur	***1.67***	13.24	1314.22	***3.20***	2748.65	10.92		0.0004	0.0032	0.3212	0.0008	0.6717	0.0027
13	Mongla	***2.84***	11.00	1544.40	6.44	5125.25	***0.25***		0.0004	0.0016	0.2308	0.0010	0.7661	0.0000
14	Mymensingh	6.79	26.00	1464.46	***5.96***	2596.52	41350.25		0.0001	0.0006	0.0322	0.0001	0.0571	0.9098
15	Patuakhali	***3.76***	16.00	1941.53	***4.37***	5582.25	70.33		0.0005	0.0021	0.2549	0.0006	0.7327	0.0092
16	Rajshahi	12.50	***3.59***	1397.14	14.43	3585.47	16.36		0.0025	0.0007	0.2778	0.0029	0.7129	0.0033
17	Rangamati	***4.25***	23.24	1226.16	***4.16***	2017.06	96.38		0.0013	0.0069	0.3637	0.0012	0.5983	0.0286
18	Rangpur	***2.41***	***4.62***	1439.38	6.26	3892.80	7.64		0.0004	0.0009	0.2689	0.0012	0.7272	0.0014
19	Shitakunda	***0.44***	9.45	1846.44	***1.02***	6067.64	9.99		0.0001	0.0012	0.2327	0.0001	0.7647	0.0013
20	Srimongol	***1.98***	7.03	1494.94	7.07	4303.69	23.09		0.0003	0.0012	0.2561	0.0012	0.7372	0.0040
21	Sylhet	***1.98***	7.03	1494.94	7.07	4303.69	23.09		0.0003	0.0012	0.2561	0.0012	0.7372	0.0040
22	Tangail	***0.86***	6.18	1389.85	***1.70***	4506.52	***1.83***		0.0001	0.0010	0.2353	0.0003	0.7629	0.0003
23	Teknaf	10.43	16.00	1503.68	11.15	3381.09	122.52		0.0021	0.0012	0.2981	0.0022	0.6702	0.0243
24	Comilla	***2.00***	17.03	2233.96	13.51	7190.14	9.33		0.0002	0.0018	0.2360	0.0014	0.7596	0.0010
25	Dhaka	***3.36***	***4.62***	1288.48	***4.44***	3297.20	15.67		0.0007	0.0010	0.2793	0.0010	0.7146	0.0034
26	Chandpur	45.03	41.17	1416.27	49.08	1913.15	2.60E+13		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
27	Jessore	16.56	45.31	1986.46	28.23	3526.80	3.85E+06		0.0000	0.0000	0.0005	0.0000	0.0009	0.9985
28	Khulna	***1.42***	15.31	1388.53	***2.97***	2906.79	10.72		0.0003	0.0035	0.3210	0.0007	0.6720	0.0025
29	Satkhira	10.81	36.34	1505.96	9.52	2327.17	442303.04		0.0000	0.0001	0.0034	0.0000	0.0052	0.9913
30	Barisal	11.06	13.59	1602.59	11.97	3911.83	13.50		0.0020	0.0024	0.2880	0.0022	0.7030	0.0024
31	Bhola	***3.13***	8.41	1595.44	***3.78***	4359.93	***3.60***		0.0005	0.0001	0.2671	0.0006	0.7298	0.0006
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.0248	0.0545	6.9589	0.0311	17.7100	6.2174

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B66. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

August

								Scaling						
								Rank	1	3	4	2	6	5
								Comparison	**1.00**	3.55	395.82	1.56	1061.44	459.69
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Bogra	***1.15***	16.34	2278.08	***1.43***	7356.85	***2.10***		0.0001	0.0017	0.2359	0.0001	0.7619	0.0002
2	Chittagong	***1.93***	19.10	1465.12	***0.53***	3007.43	***4.29***		0.0004	0.0042	0.3257	0.0001	0.6686	0.0010
3	Cox's Bazar	***3.33***	14.28	1815.72	11.34	5276.94	253.83		0.0005	0.0019	0.2462	0.0015	0.7155	0.0344
4	Dinajpur	***3.33***	14.28	1815.72	11.34	5276.94	253.83		0.0005	0.0019	0.2462	0.0015	0.7155	0.0344
5	Faridpur	7.45	19.79	1303.58	7.75	2314.30	8611.62		0.0006	0.0016	0.1063	0.0006	0.1887	0.7022
6	Feni	6.07	18.76	1456.21	14.93	3033.88	217.75		0.0013	0.0040	0.3067	0.0031	0.6390	0.0459
7	Hatiya	***0.95***	14.28	1317.19	6.59	2796.72	71.62		0.0002	0.0034	0.3131	0.0016	0.6647	0.0170
8	Ishurdi	***0.12***	13.93	1649.83	***2.68***	4274.75	6.48		0.0000	0.0023	0.2774	0.0005	0.7187	0.0011
9	Khepupara	***4.64***	23.24	1382.03	8.25	2453.57	1309.20		0.0009	0.0045	0.2668	0.0016	0.4736	0.2527
10	Kutubdia	9.19	18.92	1835.40	9.55	5295.59	5186.22		0.0007	0.0015	0.1486	0.0008	0.4286	0.4198
11	Maijdicourt	***4.89***	24.97	1536.81	8.98	2959.66	1142.62		0.0009	0.0044	0.2707	0.0016	0.5213	0.2012
12	Madaripur	***2.27***	13.93	1137.12	***1.85***	2031.03	2255.70		0.0004	0.0026	0.2090	0.0003	0.3732	0.4145
13	Mongla	***2.32***	13.50	1685.08	***2.39***	5582.48	***1.32***		0.0003	0.0019	0.2312	0.0003	0.7661	0.0002
14	Mymensingh	64.02	65.31	2365.19	96.24	3892.34	5.25E+15		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
15	Patuakhali	***1.13***	16.34	1963.04	***1.24***	5659.42	***0.62***		0.0001	0.0021	0.2569	0.0002	0.7406	0.0001
16	Rajshahi	8.97	***2.90***	1363.30	6.63	3281.61	10.53		0.0019	0.0006	0.2917	0.0014	0.7021	0.0023
17	Rangamati	22.38	35.66	1522.10	43.53	2507.12	1.65E+09		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
18	Rangpur	7.47	18.41	2073.82	7.67	5522.13	9.69		0.0010	0.0024	0.2715	0.0010	0.7229	0.0013
19	Shitakunda	***1.63***	20.48	2394.77	***0.79***	7934.84	63.04		0.0002	0.0020	0.2299	0.0001	0.7618	0.0061
20	Srimongol	***3.05***	18.41	2288.82	6.83	7590.66	260.90		0.0003	0.0018	0.2251	0.0007	0.7465	0.0257
21	Sylhet	***3.05***	18.41	2288.82	6.83	7590.66	260.90		0.0003	0.0018	0.2251	0.0007	0.7465	0.0257
22	Tangail	7.83	***2.09***	1834.02	***5.48***	8984.62	6.64		0.0007	0.0002	0.1692	0.0005	0.8288	0.0006
23	Teknaf	16.07	31.52	1045.95	16.92	1260.48	1.91E+08		0.0000	0.0018	0.0000	0.0000	0.0000	1.0000
24	Comilla	***4.06***	10.48	2234.40	***4.34***	7379.89	6.09		0.0004	0.0011	0.2318	0.0005	0.7656	0.0006
25	Dhaka	18.60	34.62	2502.09	29.67	6372.95	2779.52		0.0016	0.0029	0.2132	0.0025	0.5430	0.2368
26	Chandpur	58.70	34.28	1365.22	103.25	1962.07	4.44E+14		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
27	Jessore	***3.02***	7.72	2777.88	***2.20***	13058.24	***3.15***		0.0002	0.0005	0.1752	0.0001	0.8237	0.0002
28	Khulna	8.28	9.10	1469.76	8.62	3570.73	17.62		0.0016	0.0018	0.2891	0.0017	0.7023	0.0035
29	Satkhira	8.33	28.07	1654.78	13.31	3195.40	261408.86		0.0000	0.0001	0.0062	0.0000	0.0120	0.9816
30	Barisal	***3.42***	8.41	1585.18	***4.93***	2606.61	***3.71***		0.0008	0.0020	0.3763	0.0012	0.6188	0.0009
31	Bhola	***0.99***	14.28	2139.89	7.24	6898.27	6.22		0.0001	0.0001	0.2360	0.0008	0.7608	0.0007
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.0161	0.0572	6.3808	0.0251	17.1107	7.4104

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B67. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

September

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	3.20	326.86	1.50	786.29	216.19

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***1.34***	8.07	1128.15	8.16	2401.01	***3.03***	0.0004	0.0023	0.3178	0.0023	0.6764	0.0009
2	Chittagong	***3.76***	13.24	1766.50	12.21	4975.12	11.32	0.0006	0.0020	0.2605	0.0018	0.7336	0.0017
3	Cox's Bazar	***2.09***	10.83	2217.46	10.74	8336.53	***1.43***	0.0002	0.0010	0.2096	0.0010	0.7880	0.0001
4	Dinajpur	***2.09***	10.83	2217.46	10.74	8336.53	***1.43***	0.0002	0.0010	0.2096	0.0010	0.7880	0.0001
5	Faridpur	***3.85***	7.72	950.28	***4.95***	1683.30	10.34	0.0014	0.0029	0.3572	0.0019	0.6327	0.0039
6	Feni	***3.12***	18.76	1313.60	***2.28***	2521.56	14.78	0.0008	0.0048	0.3391	0.0006	0.6509	0.0038
7	Hatiya	9.43	12.55	1149.74	21.54	2097.89	16.03	0.0029	0.0038	0.3476	0.0065	0.6343	0.0048
8	Ishurdi	9.64	26.69	1346.24	12.50	2222.40	308805.11	0.0000	0.0001	0.0043	0.0000	0.0071	0.9884
9	Khepupara	9.89	23.59	2008.15	10.96	5115.54	120.25	0.0014	0.0032	0.2755	0.0015	0.7019	0.0165
10	Kutubdia	***3.58***	9.33	1404.48	***1.30***	4089.80	7.71	0.0006	0.0017	0.2546	0.0002	0.7414	0.0014
11	Maijdicourt	***3.04***	23.24	1610.34	***4.35***	3407.36	82.06	0.0006	0.0045	0.3139	0.0008	0.6642	0.0160
12	Madaripur	***5.00***	***3.93***	1403.38	***4.90***	3936.87	9.91	0.0009	0.0007	0.2616	0.0009	0.7339	0.0018
13	Mongla	***0.25***	9.50	1454.70	***5.37***	4810.77	9.37	0.0000	0.0015	0.2313	0.0009	0.7648	0.0015
14	Mymensingh	16.24	23.93	931.98	25.52	1119.46	1.55E+08	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
15	Patuakhali	***3.57***	23.59	2261.17	9.97	6490.60	9.74	0.0004	0.0027	0.2570	0.0011	0.7377	0.0011
16	Rajshahi	13.19	8.07	1248.32	10.17	2104.27	16.87	0.0039	0.0024	0.3671	0.0030	0.6187	0.0050
17	Rangamati	***2.83***	24.97	1158.52	***2.62***	1791.94	12.98	0.0009	0.0083	0.3870	0.0009	0.5985	0.0043
18	Rangpur	***4.98***	28.07	1365.60	***2.80***	2248.01	489.18	0.0012	0.0068	0.3300	0.0007	0.5432	0.1182
19	Shitakunda	***0.93***	16.00	2153.45	***1.94***	6964.15	***0.72***	0.0001	0.0018	0.2357	0.0002	0.7622	0.0001
20	Srimongol	***1.34***	12.55	1506.42	***3.78***	3896.07	43.73	0.0002	0.0023	0.2757	0.0007	0.7131	0.0080
21	Sylhet	***1.34***	12.55	1506.42	***3.78***	3896.07	43.73	0.0002	0.0023	0.2757	0.0007	0.7131	0.0080
22	Tangail	***5.66***	***4.36***	1117.56	***5.93***	2602.89	8.78	0.0015	0.0012	0.2984	0.0016	0.6950	0.0023
23	Teknaf	27.00	21.86	1118.22	46.09	1719.10	3.95E+10	0.0000	0.0023	0.0000	0.0000	0.0000	1.0000
24	Comilla	***1.52***	6.69	1484.16	6.34	4168.03	8.46	0.0003	0.0012	0.2615	0.0011	0.7344	0.0015
25	Dhaka	***3.32***	18.07	1235.53	***3.19***	2197.69	632.59	0.0008	0.0044	0.3021	0.0008	0.5373	0.1547
26	Chandpur	46.27	34.97	1139.37	115.13	1375.94	2.85E+13	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
27	Jessore	***1.30***	***5.66***	1454.17	***1.69***	4191.34	9.36	0.0002	0.0010	0.2568	0.0003	0.7401	0.0017
28	Khulna	***5.58***	13.59	1465.22	6.53	3357.53	20.80	0.0011	0.0028	0.3009	0.0013	0.6895	0.0043
29	Satkhira	***5.29***	23.93	1498.94	10.94	2901.93	8663.50	0.0004	0.0018	0.1144	0.0008	0.2214	0.6611
30	Barisal	***4.13***	7.72	1356.86	***4.62***	3300.50	***2.08***	0.0009	0.0017	0.2902	0.0010	0.7059	0.0004
31	Bhola	7.81	21.86	2187.84	8.74	6268.14	74.24	0.0009	0.0018	0.2553	0.0010	0.7315	0.0087
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0232	0.0743	7.5902	0.0347	18.2588	5.0203

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B68. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

October

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.86	212.99	1.24	296.85	27.37

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	6.05	***3.24***	684.67	6.92	1100.48	8.32	0.0033	0.0018	0.3783	0.0038	0.6081	0.0046
2	Chittagong	***2.10***	6.00	831.07	***1.06***	1336.83	***1.81***	0.0010	0.0028	0.3814	0.0005	0.6135	0.0008
3	Cox's Bazar	***3.21***	***4.62***	1062.58	***3.03***	1919.18	***3.08***	0.0011	0.0015	0.3547	0.0010	0.6406	0.0010
4	Dinajpur	***3.21***	***4.62***	1062.58	***3.03***	1919.18	***3.08***	0.0011	0.0015	0.3547	0.0010	0.6406	0.0010
5	Faridpur	***2.01***	14.28	788.93	***0.56***	1061.41	10.51	0.0011	0.0076	0.4202	0.0003	0.5653	0.0056
6	Feni	***2.11***	***3.93***	703.03	***3.00***	1043.14	***4.29***	0.0012	0.0022	0.3996	0.0017	0.5929	0.0024
7	Hatiya	8.66	6.69	866.78	7.88	1384.39	20.37	0.0038	0.0029	0.3777	0.0034	0.6033	0.0089
8	Ishurdi	***2.09***	15.66	588.50	***1.84***	616.66	***0.93***	0.0017	0.0128	0.4801	0.0015	0.5031	0.0008
9	Khepupara	7.46	11.86	1085.96	9.81	1902.92	12.36	0.0025	0.0039	0.3584	0.0032	0.6280	0.0041
10	Kutubdia	***2.78***	***4.75***	692.34	8.36	1047.08	***0.77***	0.0016	0.0027	0.3943	0.0048	0.5963	0.0004
11	Maijdicourt	***4.22***	***5.31***	828.46	***2.20***	1250.97	***3.57***	0.0020	0.0025	0.3955	0.0010	0.5972	0.0017
12	Madaripur	***5.46***	9.45	785.43	***2.87***	1110.13	***2.08***	0.0028	0.0049	0.4101	0.0015	0.5796	0.0011
13	Mongla	***4.15***	6.00	629.92	***4.99***	772.82	***5.86***	0.0029	0.0042	0.4424	0.0035	0.5428	0.0041
14	Mymensingh	***2.89***	17.72	663.15	***2.87***	699.91	10.52	0.0021	0.0127	0.4747	0.0021	0.5010	0.0075
15	Patuakhali	***3.75***	21.52	887.21	***5.79***	1130.88	205.55	0.0017	0.0095	0.3935	0.0026	0.5016	0.0912
16	Rajshahi	***4.07***	11.52	502.62	***5.34***	505.66	***5.60***	0.0039	0.0111	0.4857	0.0052	0.4886	0.0054
17	Rangamati	***1.91***	8.41	581.56	6.32	702.63	***2.85***	0.0015	0.0065	0.4461	0.0048	0.5390	0.0022
18	Rangpur	***4.45***	17.03	706.06	6.24	841.57	30.12	0.0028	0.0106	0.4398	0.0039	0.5242	0.0188
19	Shitakunda	***4.02***	6.00	756.90	6.05	1266.42	17.63	0.0020	0.0029	0.3680	0.0029	0.6157	0.0086
20	Srimongol	***2.04***	7.38	564.10	***2.34***	731.76	***3.45***	0.0016	0.0056	0.4303	0.0018	0.5581	0.0026
21	Sylhet	***2.04***	7.38	564.10	***2.34***	731.76	***3.45***	0.0016	0.0056	0.4303	0.0018	0.5581	0.0026
22	Tangail	***1.33***	9.36	555.17	***1.55***	755.45	***1.89***	0.0010	0.0071	0.4191	0.0012	0.5703	0.0014
23	Teknaf	***3.49***	17.38	625.93	6.56	613.92	779.75	0.0017	0.0056	0.3058	0.0032	0.2999	0.3809
24	Comilla	***1.74***	7.38	635.84	***4.03***	813.45	8.90	0.0012	0.0050	0.4322	0.0027	0.5529	0.0060
25	Dhaka	***0.69***	6.69	598.02	***1.17***	744.61	***3.38***	0.0005	0.0049	0.4415	0.0009	0.5497	0.0025
26	Chandpur	6.54	21.17	672.75	8.62	667.00	88332.16	0.0001	0.0002	0.0075	0.0001	0.0074	0.9847
27	Jessore	***1.39***	7.38	665.38	***4.26***	940.18	***0.93***	0.0009	0.0046	0.4109	0.0026	0.5805	0.0006
28	Khulna	***4.07***	***5.66***	764.25	***3.25***	1263.98	6.19	0.0020	0.0028	0.3733	0.0016	0.6174	0.0030
29	Satkhira	6.75	10.83	746.38	7.04	1080.14	6.08	0.0036	0.0058	0.4019	0.0038	0.5816	0.0033
30	Barisal	***0.94***	11.52	822.58	***1.18***	1261.70	8.45	0.0004	0.0055	0.3905	0.0006	0.5990	0.0040
31	Bhola	6.42	8.07	876.78	***3.77***	1424.37	***5.56***	0.0028	0.0058	0.3771	0.0016	0.6126	0.0024
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0572	0.1634	12.1752	0.0706	16.9688	1.5643

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B69. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

November

		Scaling					
	Rank	2	3	6	1	5	4
	Comparison	1.13	2.87	126.23	**1.00**	114.74	19.57

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***3.58***	13.93	463.87	***3.07***	441.39	***4.16***	0.0039	0.0150	0.4988	0.0033	0.4746	0.0045
2	Chittagong	***4.64***	6.34	342.02	***0.70***	243.28	9.38	0.0077	0.0105	0.5640	0.0012	0.4012	0.0155
3	Cox's Bazar	***1.07***	9.45	378.69	***0.77***	316.15	***2.68***	0.0015	0.0133	0.5343	0.0011	0.4460	0.0038
4	Dinajpur	***1.07***	9.45	378.69	***0.77***	316.15	***2.68***	0.0015	0.0133	0.5343	0.0011	0.4460	0.0038
5	Faridpur	***4.11***	7.38	408.22	9.71	434.34	6.03	0.0047	0.0085	0.4693	0.0112	0.4994	0.0069
6	Feni	6.55	***2.90***	312.02	8.83	257.08	7.25	0.0110	0.0049	0.5247	0.0148	0.4323	0.0122
7	Hatiya	***3.91***	11.86	398.13	***5.15***	336.11	12.86	0.0051	0.0154	0.5184	0.0067	0.4376	0.0168
8	Ishurdi	***2.21***	6.00	297.65	***0.79***	202.67	***3.79***	0.0043	0.0117	0.5801	0.0015	0.3950	0.0074
9	Khepupara	***3.32***	22.55	480.31	***3.95***	395.08	68.20	0.0034	0.0232	0.4934	0.0041	0.4059	0.0701
10	Kutubdia	***3.11***	6.83	328.73	***1.29***	292.49	6.80	0.0049	0.0107	0.5142	0.0020	0.4575	0.0106
11	Maijdicourt	***4.92***	10.14	390.06	***1.17***	330.68	17.07	0.0065	0.0134	0.5173	0.0016	0.4386	0.0226
12	Madaripur	***4.42***	8.76	446.81	***2.03***	413.81	***4.66***	0.0050	0.0099	0.5075	0.0023	0.4700	0.0053
13	Mongla	***1.00***	7.00	411.22	***2.07***	521.91	***1.79***	0.0011	0.0074	0.4352	0.0022	0.5523	0.0019
14	Mymensingh	***5.58***	18.41	465.03	***2.11***	447.84	15.98	0.0058	0.0193	0.4870	0.0022	0.4690	0.0167
15	Patuakhali	***2.19***	17.72	591.42	***1.09***	684.83	***0.46***	0.0017	0.0137	0.4557	0.0008	0.5277	0.0004
16	Rajshahi	***4.14***	23.24	440.15	***2.68***	371.06	***4.82***	0.0049	0.0275	0.5202	0.0032	0.4386	0.0057
17	Rangamati	7.55	***1.52***	339.77	9.26	311.92	***4.32***	0.0112	0.0023	0.5039	0.0137	0.4626	0.0064
18	Rangpur	***1.86***	***4.97***	354.42	***3.07***	382.97	***3.92***	0.0025	0.0066	0.4718	0.0041	0.5098	0.0052
19	Shitakunda	***2.82***	***3.24***	310.97	***2.30***	273.16	***3.54***	0.0047	0.0054	0.5217	0.0039	0.4583	0.0059
20	Srimongol	***5.97***	22.21	251.47	15.65	123.16	27158.56	0.0002	0.0008	0.0091	0.0006	0.0045	0.9848
21	Sylhet	***5.97***	22.21	251.47	15.65	123.16	27158.56	0.0002	0.0008	0.0091	0.0006	0.0045	0.9848
22	Tangail	***3.14***	7.09	421.95	***2.41***	579.20	***2.43***	0.0031	0.0070	0.4152	0.0024	0.5700	0.0024
23	Teknaf	***0.46***	9.45	277.64	***1.57***	172.14	20.26	0.0010	0.0008	0.5766	0.0033	0.3575	0.0421
24	Comilla	***5.96***	***3.24***	303.54	***3.74***	269.33	***5.61***	0.0101	0.0055	0.5132	0.0063	0.4554	0.0095
25	Dhaka	***2.38***	14.62	522.98	***0.83***	500.80	***1.78***	0.0023	0.0140	0.5012	0.0008	0.4800	0.0017
26	Chandpur	***4.94***	***5.31***	421.21	8.37	468.07	16.11	0.0053	0.0057	0.4559	0.0091	0.5066	0.0174
27	Jessore	***3.75***	8.41	377.81	***3.96***	244.39	***3.42***	0.0058	0.0131	0.5887	0.0062	0.3808	0.0053
28	Khulna	***1.13***	11.17	373.79	***0.54***	341.00	***2.51***	0.0015	0.0153	0.5119	0.0007	0.4670	0.0034
29	Satkhira	***3.49***	9.10	315.05	***1.93***	273.73	***3.56***	0.0057	0.0150	0.5191	0.0032	0.4511	0.0059
30	Barisal	***1.82***	7.72	379.72	***0.06***	391.98	***1.35***	0.0023	0.0099	0.4852	0.0001	0.5008	0.0017
31	Bhola	***2.16***	6.69	359.64	***1.97***	356.48	***2.22***	0.0030	0.0150	0.4932	0.0027	0.4889	0.0030
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1320	0.3349	14.7304	0.1167	13.3893	2.2838

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B70. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

December

		Scaling					
	Rank	2	3	6	1	5	4
	Comparison	1.11	3.68	89.11	**1.00**	87.26	4.62

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***0.21***	11.17	312.42	***0.25***	323.26	***0.85***	0.0003	0.0172	0.4820	0.0004	0.4987	0.0013
2	Chittagong	***3.35***	***2.55***	327.30	***5.78***	356.90	***3.68***	0.0048	0.0036	0.4679	0.0083	0.5102	0.0053
3	Cox's Bazar	***1.00***	14.28	389.84	***2.62***	363.37	***2.25***	0.0013	0.0185	0.5041	0.0034	0.4699	0.0029
4	Dinajpur	***1.00***	14.28	389.84	***2.62***	363.37	***2.25***	0.0013	0.0185	0.5041	0.0034	0.4699	0.0029
5	Faridpur	***0.98***	12.90	297.54	***3.81***	276.40	101.15	0.0014	0.0186	0.4295	0.0055	0.3990	0.1460
6	Feni	***3.57***	***5.31***	311.40	***2.79***	356.11	6.16	0.0052	0.0077	0.4544	0.0041	0.5196	0.0090
7	Hatiya	***4.33***	10.83	405.46	6.34	497.24	***1.65***	0.0047	0.0117	0.4379	0.0068	0.5371	0.0018
8	Ishurdi	***2.44***	***5.31***	208.18	***1.73***	193.45	***2.93***	0.0059	0.0128	0.5028	0.0042	0.4672	0.0071
9	Khepupara	***0.62***	10.14	498.46	***1.66***	671.13	***1.84***	0.0005	0.0086	0.4210	0.0014	0.5669	0.0016
10	Kutubdia	9.08	19.75	237.95	9.20	105.21	***3.46***	0.0236	0.0513	0.6186	0.0239	0.2735	0.0090
11	Maijdicourt	***5.33***	19.45	337.81	***4.88***	258.58	491.20	0.0048	0.0174	0.3024	0.0044	0.2314	0.4396
12	Madaripur	***4.27***	***5.31***	306.97	***3.38***	361.83	6.92	0.0062	0.0077	0.4457	0.0049	0.5254	0.0100
13	Mongla	***1.62***	***4.00***	363.36	***3.09***	609.35	***1.88***	0.0016	0.0041	0.3695	0.0031	0.6197	0.0019
14	Mymensingh	***4.59***	13.59	316.98	***0.70***	306.91	10.86	0.0070	0.0208	0.4850	0.0011	0.4696	0.0166
15	Patuakhali	***1.66***	***5.66***	431.41	***1.98***	573.88	***5.12***	0.0016	0.0055	0.4231	0.0019	0.5628	0.0050
16	Rajshahi	10.98	8.07	238.68	***3.71***	188.37	14.68	0.0236	0.0174	0.5138	0.0080	0.4055	0.0316
17	Rangamati	***0.72***	10.14	258.80	***0.69***	182.50	***0.67***	0.0016	0.0224	0.5707	0.0015	0.4024	0.0015
18	Rangpur	***0.50***	8.41	256.04	***1.83***	228.40	***0.84***	0.0010	0.0170	0.5162	0.0037	0.4605	0.0017
19	Shitakunda	***1.84***	8.41	373.44	***5.02***	506.06	6.81	0.0020	0.0093	0.4142	0.0056	0.5613	0.0076
20	Srimongol	***5.62***	26.00	219.30	***2.22***	130.49	***1.79***	0.0146	0.0675	0.5690	0.0058	0.3386	0.0047
21	Sylhet	***5.62***	26.00	219.30	***2.22***	130.49	***1.79***	0.0146	0.0675	0.5690	0.0058	0.3386	0.0047
22	Tangail	***1.57***	9.24	275.71	***3.35***	334.97	***1.35***	0.0025	0.0148	0.4403	0.0054	0.5349	0.0022
23	Teknaf	***4.29***	8.41	490.62	***5.26***	528.55	***2.68***	0.0041	0.0675	0.4718	0.0051	0.5083	0.0026
24	Comilla	***1.57***	7.72	223.79	***1.18***	187.14	***4.13***	0.0037	0.0182	0.5259	0.0028	0.4398	0.0097
25	Dhaka	***2.73***	***4.62***	249.49	***1.81***	229.75	7.12	0.0055	0.0093	0.5035	0.0037	0.4636	0.0144
26	Chandpur	6.74	***2.55***	302.85	9.95	327.98	9.29	0.0102	0.0039	0.4593	0.0151	0.4974	0.0141
27	Jessore	***5.78***	***3.59***	259.45	***2.78***	242.99	***2.50***	0.0112	0.0069	0.5018	0.0054	0.4699	0.0048
28	Khulna	***4.44***	***4.62***	253.71	***5.30***	177.87	***2.82***	0.0099	0.0103	0.5654	0.0118	0.3964	0.0063
29	Satkhira	***1.33***	12.90	271.97	***2.18***	257.34	***0.54***	0.0024	0.0236	0.4979	0.0040	0.4711	0.0010
30	Barisal	***4.67***	6.34	313.89	***2.07***	389.48	***0.94***	0.0065	0.0088	0.4375	0.0029	0.5429	0.0013
31	Bhola	***1.02***	7.72	377.02	***3.00***	505.49	***1.20***	0.0011	0.0236	0.4210	0.0033	0.5645	0.0013
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1850	0.6119	14.8252	0.1664	14.5166	0.7694

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B71. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

Yearly Maximum Monthly of Monthly Average Minimum

		Scaling					
	Rank	2	3	5	1	6	4
	Comparison	1.23	3.85	324.55	**1.00**	633.76	69.72

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***5.98***	6.34	2716.56	***4.37***	12734.39	***1.94***	0.0004	0.0004	0.1756	0.0003	0.8232	0.0001
2	Chittagong	12.37	14.28	1208.47	10.04	2047.45	***5.93***	0.0038	0.0043	0.3664	0.0030	0.6207	0.0018
3	Cox's Bazar	6.19	13.93	1450.20	6.93	2940.48	***1.98***	0.0014	0.0032	0.3281	0.0016	0.6653	0.0004
4	Dinajpur	6.19	13.93	1450.20	6.93	2940.48	***1.98***	0.0014	0.0032	0.3281	0.0016	0.6653	0.0004
5	Faridpur	***3.87***	16.00	1197.48	8.71	2114.78	99.80	0.0011	0.0047	0.3480	0.0025	0.6146	0.0290
6	Feni	***5.25***	32.90	1616.67	***5.44***	2880.62	82.48	0.0011	0.0071	0.3497	0.0012	0.6231	0.0178
7	Hatiya	***4.86***	10.48	1343.61	***2.98***	3108.98	***4.95***	0.0011	0.0023	0.3002	0.0007	0.6946	0.0011
8	Ishurdi	16.91	36.00	2544.42	***2.75***	5955.38	6.36	0.0020	0.0042	0.2972	0.0003	0.6956	0.0007
9	Khepupara	***5.70***	17.72	1631.50	***3.89***	1562.10	***1.10***	0.0018	0.0055	0.5064	0.0012	0.4848	0.0003
10	Kutubdia	***5.51***	6.42	1031.63	***5.23***	1660.36	***5.17***	0.0020	0.0024	0.3801	0.0019	0.6117	0.0019
11	Maijdicourt	***3.03***	19.79	1284.04	***2.73***	2184.21	***3.50***	0.0009	0.0057	0.3672	0.0008	0.6245	0.0010
12	Madaripur	***3.43***	12.55	1605.83	***3.32***	4123.97	***1.39***	0.0006	0.0022	0.2793	0.0006	0.7171	0.0002
13	Mongla	10.07	21.50	1848.59	***5.32***	917.61	***2.27***	0.0036	0.0077	0.6589	0.0019	0.3271	0.0008
14	Mymensingh	51.21	41.17	1893.16	62.07	3361.46	1.46E+14	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
15	Patuakhali	9.49	17.72	1625.55	***4.46***	2469.51	***1.22***	0.0023	0.0043	0.3938	0.0011	0.5982	0.0003
16	Rajshahi	11.45	34.28	2026.25	***5.22***	3986.36	18.11	0.0019	0.0056	0.3332	0.0009	0.6555	0.0030
17	Rangamati	***0.56***	14.97	1323.56	***1.55***	2778.74	***1.13***	0.0001	0.0036	0.3212	0.0004	0.6744	0.0003
18	Rangpur	***5.14***	18.76	2091.22	***3.89***	5912.95	6.97	0.0006	0.0023	0.2601	0.0005	0.7355	0.0009
19	Shitakunda	7.71	23.59	1993.24	6.30	3554.22	***3.16***	0.0014	0.0042	0.3567	0.0011	0.6360	0.0006
20	Srimongol	***4.32***	30.83	2902.62	***5.69***	9605.33	47.63	0.0003	0.0024	0.2304	0.0005	0.7625	0.0038
21	Sylhet	***4.32***	30.83	2902.62	***5.69***	9605.33	47.63	0.0003	0.0024	0.2304	0.0005	0.7625	0.0038
22	Tangail	***1.58***	11.18	1447.90	***0.43***	4210.02	***1.65***	0.0003	0.0020	0.2552	0.0001	0.7421	0.0003
23	Teknaf	***4.62***	12.90	1280.08	***5.59***	1449.62	***4.95***	0.0017	0.0024	0.4642	0.0020	0.5257	0.0018
24	Comilla	***3.11***	26.00	2701.07	***3.99***	8936.32	***3.37***	0.0003	0.0022	0.2314	0.0003	0.7655	0.0003
25	Dhaka	11.77	33.59	1845.40	8.23	3491.53	***3.75***	0.0022	0.0062	0.3421	0.0015	0.6473	0.0007
26	Chandpur	12.05	34.28	1088.89	24.03	1246.51	4.81E+06	0.0000	0.0000	0.0002	0.0000	0.0003	0.9995
27	Jessore	9.63	30.14	2063.41	***2.97***	4335.10	***2.86***	0.0015	0.0047	0.3202	0.0005	0.6727	0.0004
28	Khulna	***2.80***	20.48	1585.56	***3.30***	3251.75	6.46	0.0006	0.0042	0.3256	0.0007	0.6677	0.0013
29	Satkhira	***3.71***	30.14	1604.94	***4.91***	2856.25	76.80	0.0008	0.0066	0.3507	0.0011	0.6241	0.0168
30	Barisal	***3.96***	12.55	1580.63	***2.45***	3086.96	***2.22***	0.0008	0.0027	0.3371	0.0005	0.6584	0.0005
31	Bhola	***3.29***	17.38	2026.54	6.19	4878.18	***1.48***	0.0005	0.0066	0.2923	0.0009	0.7036	0.0002
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0367	0.1153	9.7299	0.0300	18.9997	2.0902

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B72. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

Yearly Minimum Monthly of Monthly Average Minimum

		Scaling					
	Rank	2	3	5	1	6	4
	Comparison	1.14	1.43	54.08	**1.00**	67.98	2.48

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***3.79***	9.79	271.09	6.65	304.89	21.62	0.0061	0.0159	0.4388	0.0108	0.4935	0.0350
2	Chittagong	***2.44***	22.55	428.30	***4.44***	464.70	62.61	0.0025	0.0229	0.4348	0.0045	0.4718	0.0636
3	Cox's Bazar	8.09	14.62	502.57	9.85	659.05	18.32	0.0067	0.0121	0.4145	0.0081	0.5435	0.0151
4	Dinajpur	8.09	14.62	502.57	9.85	659.05	18.32	0.0067	0.0121	0.4145	0.0081	0.5435	0.0151
5	Faridpur	***4.06***	6.00	322.44	***4.14***	442.56	8.51	0.0052	0.0076	0.4093	0.0053	0.5618	0.0108
6	Feni	***3.70***	***4.28***	314.98	***2.38***	434.05	12.24	0.0048	0.0055	0.4082	0.0031	0.5625	0.0159
7	Hatiya	6.40	9.45	316.16	***4.88***	331.91	55.67	0.0088	0.0130	0.4364	0.0067	0.4581	0.0768
8	Ishurdi	***4.62***	8.76	222.72	***0.40***	241.74	15.44	0.0094	0.0177	0.4511	0.0008	0.4897	0.0313
9	Khepupara	10.83	6.00	391.71	15.59	549.52	22.97	0.0109	0.0060	0.3930	0.0156	0.5514	0.0230
10	Kutubdia	24.28	8.50	478.32	23.27	785.40	25.90	0.0180	0.0063	0.3554	0.0173	0.5836	0.0192
11	Maijdicourt	***2.04***	6.34	301.72	***4.72***	356.89	8.07	0.0030	0.0093	0.4438	0.0069	0.5250	0.0119
12	Madaripur	***3.82***	***5.31***	271.97	***2.17***	332.58	***5.92***	0.0061	0.0085	0.4374	0.0035	0.5349	0.0095
13	Mongla	***3.78***	***3.50***	287.82	8.01	485.98	7.44	0.0048	0.0044	0.3613	0.0101	0.6101	0.0093
14	Mymensingh	***4.67***	9.79	326.51	7.35	440.29	12.20	0.0058	0.0122	0.4077	0.0092	0.5498	0.0152
15	Patuakhali	12.53	10.14	361.89	9.95	421.14	35.94	0.0147	0.0119	0.4250	0.0117	0.4945	0.0422
16	Rajshahi	7.45	10.48	246.20	***5.67***	270.85	11.80	0.0135	0.0190	0.4456	0.0103	0.4903	0.0214
17	Rangamati	11.22	8.07	230.87	***5.84***	188.59	6.52	0.0249	0.0179	0.5118	0.0129	0.4181	0.0144
18	Rangpur	***4.41***	7.72	271.65	8.10	372.24	***3.94***	0.0066	0.0116	0.4066	0.0121	0.5572	0.0059
19	Shitakunda	***5.73***	11.86	283.51	7.75	294.86	15.03	0.0093	0.0192	0.4582	0.0125	0.4765	0.0243
20	Srimongol	7.30	***2.55***	203.01	***3.47***	254.36	7.28	0.0153	0.0053	0.4247	0.0073	0.5322	0.0152
21	Sylhet	7.30	***2.55***	203.01	***3.47***	254.36	7.28	0.0153	0.0053	0.4247	0.0073	0.5322	0.0152
22	Tangail	8.50	11.18	294.39	***4.54***	424.95	13.02	0.0112	0.0148	0.3891	0.0060	0.5617	0.0172
23	Teknaf	***3.52***	12.55	520.07	***1.91***	770.32	***5.27***	0.0027	0.0053	0.3959	0.0015	0.5864	0.0040
24	Comilla	6.58	6.69	276.59	***3.45***	368.40	***5.51***	0.0099	0.0100	0.4145	0.0052	0.5521	0.0083
25	Dhaka	7.10	***0.48***	241.93	***3.85***	282.23	***5.60***	0.0131	0.0009	0.4470	0.0071	0.5215	0.0103
26	Chandpur	6.32	***3.59***	349.89	11.22	556.64	6.26	0.0068	0.0038	0.3746	0.0120	0.5960	0.0067
27	Jessore	6.31	13.59	301.97	***4.37***	342.75	14.91	0.0092	0.0199	0.4415	0.0064	0.5012	0.0218
28	Khulna	***2.99***	9.79	261.80	***1.76***	284.41	***3.73***	0.0053	0.0173	0.4638	0.0031	0.5038	0.0066
29	Satkhira	6.31	6.69	299.45	7.03	370.81	***5.50***	0.0091	0.0096	0.4304	0.0101	0.5329	0.0079
30	Barisal	***1.74***	8.41	314.13	***4.19***	427.50	7.10	0.0023	0.0110	0.4117	0.0055	0.5602	0.0093
31	Bhola	7.69	16.00	418.22	***1.00***	558.30	17.04	0.0076	0.0096	0.4107	0.0010	0.5483	0.0167
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.2753	0.3462	13.0824	0.2419	16.4445	0.5994

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B73. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

Yearly Average Monthly of Monthly Average Minimum

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.96	348.41	1.26	942.09	181.18

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***4.77***	14.28	1320.78	6.31	3438.51	7.07	0.0010	0.0030	0.2756	0.0013	0.7176	0.0015
2	Chittagong	***2.79***	***5.31***	1082.03	***5.97***	2785.26	***5.70***	0.0007	0.0014	0.2784	0.0015	0.7165	0.0015
3	Cox's Bazar	***0.77***	14.28	1262.87	***0.92***	2916.49	8.74	0.0002	0.0034	0.3004	0.0002	0.6937	0.0021
4	Dinajpur	***0.77***	14.28	1262.87	***0.92***	2916.49	8.74	0.0002	0.0034	0.3004	0.0002	0.6937	0.0021
5	Faridpur	***1.97***	13.59	1192.40	***2.08***	2783.62	280.36	0.0005	0.0032	0.2790	0.0005	0.6513	0.0656
6	Feni	***2.00***	8.76	1317.69	***3.34***	3717.75	12.82	0.0004	0.0017	0.2603	0.0007	0.7344	0.0025
7	Hatiya	***5.94***	***4.62***	1073.17	***3.83***	2762.26	11.42	0.0015	0.0012	0.2779	0.0010	0.7154	0.0030
8	Ishurdi	***0.54***	7.72	975.00	***1.07***	2262.36	12.48	0.0002	0.0024	0.2992	0.0003	0.6942	0.0038
9	Khepupara	***2.33***	10.48	1653.06	***3.74***	5458.32	50.51	0.0003	0.0015	0.2303	0.0005	0.7604	0.0070
10	Kutubdia	***2.62***	***5.91***	834.20	***2.88***	1962.24	***1.28***	0.0009	0.0021	0.2970	0.0010	0.6985	0.0005
11	Maijdicourt	9.82	17.38	1214.45	11.79	2534.96	83.26	0.0025	0.0045	0.3137	0.0030	0.6547	0.0215
12	Madaripur	***4.86***	9.10	1065.56	***3.86***	2463.62	41.76	0.0014	0.0025	0.2969	0.0011	0.6865	0.0116
13	Mongla	***3.34***	6.50	1993.12	***0.97***	11512.76	***4.16***	0.0002	0.0005	0.1474	0.0001	0.8515	0.0003
14	Mymensingh	46.14	31.52	1285.25	22.84	2278.80	1.60E+13	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
15	Patuakhali	***5.93***	23.93	2218.65	6.37	7388.61	31433.12	0.0001	0.0006	0.0540	0.0002	0.1799	0.7652
16	Rajshahi	***4.59***	6.69	1058.51	***5.67***	2655.78	16.80	0.0012	0.0018	0.2824	0.0015	0.7086	0.0045
17	Rangamati	***4.25***	14.97	852.75	***3.16***	1381.22	8.98	0.0019	0.0066	0.3764	0.0014	0.6097	0.0040
18	Rangpur	6.18	6.34	1032.30	8.00	2694.18	18.28	0.0016	0.0017	0.2742	0.0021	0.7155	0.0049
19	Shitakunda	***5.69***	15.66	1560.27	***5.69***	4486.43	18.79	0.0009	0.0026	0.2561	0.0009	0.7364	0.0031
20	Srimongol	***1.21***	11.52	1493.33	***3.79***	4994.15	11.15	0.0002	0.0018	0.2292	0.0006	0.7665	0.0017
21	Sylhet	***1.21***	11.52	1493.33	***3.79***	4994.15	11.15	0.0002	0.0018	0.2292	0.0006	0.7665	0.0017
22	Tangail	7.59	18.91	1258.05	***4.54***	3236.18	3.16E+04	0.0002	0.0005	0.0348	0.0001	0.0895	0.8748
23	Teknaf	***2.48***	14.62	1405.75	***0.98***	3657.43	36.11	0.0005	0.0018	0.2747	0.0002	0.7147	0.0071
24	Comilla	***0.72***	8.41	1280.68	***1.53***	3759.71	***3.68***	0.0001	0.0017	0.2534	0.0003	0.7438	0.0007
25	Dhaka	***2.14***	***5.66***	1236.28	***3.24***	3359.01	***5.99***	0.0005	0.0012	0.2680	0.0007	0.7283	0.0013
26	Chandpur	23.80	29.10	1106.17	14.53	1706.26	1.36E+10	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
27	Jessore	11.04	***5.31***	2066.06	11.15	8032.92	***4.31***	0.0011	0.0005	0.2039	0.0011	0.7929	0.0004
28	Khulna	6.41	6.69	1113.04	11.02	2722.43	***3.45***	0.0017	0.0017	0.2881	0.0029	0.7047	0.0009
29	Satkhira	***1.14***	10.83	1252.08	8.64	3251.48	39.31	0.0003	0.0024	0.2744	0.0019	0.7125	0.0086
30	Barisal	***2.59***	14.97	1533.67	***2.29***	4495.81	***0.20***	0.0004	0.0025	0.2535	0.0004	0.7432	0.0000
31	Bhola	***0.37***	14.28	2079.49	***1.17***	8069.71	12.09	0.0000	0.0024	0.2043	0.0001	0.7929	0.0012
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0210	0.0621	7.3131	0.0264	19.7742	3.8030

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B74. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

Minimum Monthly Average Minimum Temperature of Total Pre-Monsoon(Mar-May)

		Scaling					
	Rank	2	1	6	3	5	4
	Comparison	1.07	**1.00**	59.29	1.12	53.37	1.18

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***4.57***	***3.24***	383.48	7.54	396.10	***2.59***	0.0057	0.0041	0.4808	0.0095	0.4967	0.0032
2	Chittagong	11.42	6.00	384.30	8.92	384.88	13.19	0.0141	0.0074	0.4752	0.0110	0.4759	0.0163
3	Cox's Bazar	11.93	***4.62***	489.83	6.35	633.33	9.78	0.0103	0.0040	0.4238	0.0055	0.5479	0.0085
4	Dinajpur	11.93	***4.62***	489.83	6.35	633.33	9.78	0.0103	0.0040	0.4238	0.0055	0.5479	0.0085
5	Faridpur	7.40	***1.52***	341.31	8.01	350.61	***4.84***	0.0104	0.0021	0.4782	0.0112	0.4913	0.0068
6	Feni	***4.84***	***4.62***	337.43	***4.29***	249.74	***2.61***	0.0080	0.0077	0.5591	0.0071	0.4138	0.0043
7	Hatiya	***5.77***	7.72	484.25	8.74	500.49	10.02	0.0057	0.0076	0.4762	0.0086	0.4921	0.0099
8	Ishurdi	7.53	***3.24***	310.45	***3.65***	252.13	***4.53***	0.0129	0.0056	0.5338	0.0063	0.4336	0.0078
9	Khepupara	***4.25***	***3.24***	426.77	***5.76***	410.44	***5.23***	0.0050	0.0038	0.4987	0.0067	0.4797	0.0061
10	Kutubdia	***3.06***	8.50	668.72	***3.51***	648.78	***0.71***	0.0023	0.0064	0.5016	0.0026	0.4866	0.0005
11	Maijdicourt	***1.38***	11.86	288.73	6.17	178.97	11.27	0.0028	0.0238	0.5793	0.0124	0.3591	0.0226
12	Madaripur	7.56	***1.86***	318.06	9.71	294.51	***5.44***	0.0119	0.0029	0.4992	0.0152	0.4622	0.0085
13	Mongla	13.86	8.50	469.26	15.46	515.35	13.38	0.0134	0.0082	0.4530	0.0149	0.4975	0.0129
14	Mymensingh	7.17	7.38	392.53	7.14	344.25	***3.31***	0.0094	0.0097	0.5153	0.0094	0.4519	0.0043
15	Patuakhali	***3.04***	6.00	410.90	***5.46***	381.02	***5.58***	0.0037	0.0074	0.5060	0.0067	0.4692	0.0069
16	Rajshahi	6.92	***4.97***	324.15	***1.29***	320.78	***3.00***	0.0105	0.0075	0.4903	0.0019	0.4852	0.0045
17	Rangamati	***3.02***	11.17	293.20	***3.80***	193.50	18.37	0.0058	0.0214	0.5605	0.0073	0.3699	0.0351
18	Rangpur	***1.21***	12.21	337.58	***1.63***	249.91	***0.49***	0.0020	0.0202	0.5598	0.0027	0.4144	0.0008
19	Shitakunda	***3.66***	***3.24***	252.09	***4.02***	158.28	***3.50***	0.0086	0.0076	0.5934	0.0095	0.3726	0.0082
20	Srimongol	***3.74***	7.72	229.38	***2.57***	127.96	***3.84***	0.0100	0.0206	0.6113	0.0068	0.3410	0.0102
21	Sylhet	***3.74***	7.72	229.38	***2.57***	127.96	***3.84***	0.0100	0.0206	0.6113	0.0068	0.3410	0.0102
22	Tangail	***4.15***	***1.18***	245.72	***4.01***	253.09	***4.42***	0.0081	0.0023	0.4794	0.0078	0.4938	0.0086
23	Teknaf	***1.62***	***5.66***	467.31	***2.89***	530.97	7.03	0.0016	0.0206	0.4602	0.0028	0.5229	0.0069
24	Comilla	11.92	***5.31***	367.87	9.84	302.53	13.14	0.0168	0.0075	0.5177	0.0138	0.4257	0.0185
25	Dhaka	11.61	***4.62***	371.09	10.97	355.68	15.90	0.0151	0.0060	0.4820	0.0143	0.4620	0.0207
26	Chandpur	11.28	***1.17***	358.60	10.92	365.54	9.69	0.0149	0.0015	0.4736	0.0144	0.4828	0.0128
27	Jessore	***2.85***	6.69	367.64	***3.91***	353.49	***3.70***	0.0039	0.0091	0.4980	0.0053	0.4788	0.0050
28	Khulna	11.62	***1.52***	337.37	16.54	315.29	10.40	0.0168	0.0022	0.4870	0.0239	0.4551	0.0150
29	Satkhira	***3.79***	***3.24***	345.25	10.13	321.58	***2.29***	0.0055	0.0047	0.5031	0.0148	0.4686	0.0033
30	Barisal	11.27	***2.55***	318.69	9.44	294.68	9.94	0.0174	0.0039	0.4929	0.0146	0.4558	0.0154
31	Bhola	6.87	***0.48***	352.79	11.91	340.38	7.00	0.0096	0.0047	0.4904	0.0165	0.4731	0.0097
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.2823	0.2651	15.7150	0.2960	14.1483	0.3123

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B75. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

Minimum Monthly Average Minimum Temperature of Total Monsoon(Jun-Oct)

								Scaling						
								Rank	1	3	5	2	6	4
								Comparison	**1.00**	2.48	177.93	1.11	246.84	24.50
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Bogra	6.05	***3.24***	684.67	6.92	1100.48	8.32		0.0033	0.0018	0.3783	0.0038	0.6081	0.0046
2	Chittagong	***2.10***	6.00	831.07	***1.06***	1336.83	***1.81***		0.0010	0.0028	0.3814	0.0005	0.6135	0.0008
3	Cox's Bazar	***4.62***	7.03	1138.49	***4.26***	1914.62	***2.78***		0.0015	0.0023	0.3706	0.0014	0.6233	0.0009
4	Dinajpur	***4.62***	7.03	1138.49	***4.26***	1914.62	***2.78***		0.0015	0.0023	0.3706	0.0014	0.6233	0.0009
5	Faridpur	***2.01***	14.28	788.93	***0.56***	1061.41	10.51		0.0011	0.0076	0.4202	0.0003	0.5653	0.0056
6	Feni	***2.11***	***3.93***	703.03	***3.00***	1043.14	***4.29***		0.0012	0.0022	0.3996	0.0017	0.5929	0.0024
7	Hatiya	6.95	6.34	931.60	6.07	1687.23	19.00		0.0026	0.0024	0.3506	0.0023	0.6350	0.0072
8	Ishurdi	***2.09***	15.66	588.50	***1.84***	616.66	***0.93***		0.0017	0.0128	0.4801	0.0015	0.5031	0.0008
9	Khepupara	6.05	9.45	1017.94	9.19	1774.90	10.64		0.0021	0.0033	0.3599	0.0032	0.6276	0.0038
10	Kutubdia	6.93	***5.50***	287.40	6.53	331.60	***2.33***		0.0108	0.0086	0.4489	0.0102	0.5179	0.0036
11	Maijdicourt	***1.61***	***5.66***	837.16	***2.05***	1265.63	***2.16***		0.0008	0.0027	0.3960	0.0010	0.5986	0.0010
12	Madaripur	***5.46***	9.45	785.43	***2.87***	1110.13	***2.08***		0.0028	0.0049	0.4101	0.0015	0.5796	0.0011
13	Mongla	***4.15***	6.00	629.92	***4.99***	772.82	***5.86***		0.0029	0.0042	0.4424	0.0035	0.5428	0.0041
14	Mymensingh	***2.89***	17.72	663.15	***2.87***	699.91	10.52		0.0021	0.0127	0.4747	0.0021	0.5010	0.0075
15	Patuakhali	***3.72***	21.52	887.21	***5.73***	1130.79	221.79		0.0016	0.0095	0.3907	0.0025	0.4980	0.0977
16	Rajshahi	***4.07***	11.52	502.62	***5.34***	505.66	***5.60***		0.0039	0.0111	0.4857	0.0052	0.4886	0.0054
17	Rangamati	7.48	8.07	610.92	8.39	763.40	10.15		0.0053	0.0057	0.4338	0.0060	0.5420	0.0072
18	Rangpur	***4.45***	17.03	706.06	6.24	841.57	30.12		0.0028	0.0106	0.4398	0.0039	0.5242	0.0188
19	Shitakunda	***4.02***	6.00	756.90	6.05	1266.42	17.63		0.0020	0.0029	0.3680	0.0029	0.6157	0.0086
20	Srimongol	***2.04***	7.38	564.10	***2.34***	731.76	***3.45***		0.0016	0.0056	0.4303	0.0018	0.5581	0.0026
21	Sylhet	***2.04***	7.38	564.10	***2.34***	731.76	***3.45***		0.0016	0.0056	0.4303	0.0018	0.5581	0.0026
22	Tangail	***1.33***	9.36	555.17	***1.55***	755.45	***1.89***		0.0010	0.0071	0.4191	0.0012	0.5703	0.0014
23	Teknaf	***3.75***	19.79	660.18	6.79	646.86	1231.24		0.0015	0.0056	0.2570	0.0026	0.2518	0.4793
24	Comilla	***1.74***	7.38	635.84	***4.03***	813.45	8.90		0.0012	0.0050	0.4322	0.0027	0.5529	0.0060
25	Dhaka	***1.12***	8.41	668.87	***0.82***	903.89	***2.82***		0.0007	0.0053	0.4218	0.0005	0.5699	0.0018
26	Chandpur	6.54	21.17	672.75	8.62	667.00	88332.16		0.0001	0.0002	0.0075	0.0001	0.0074	0.9847
27	Jessore	***1.39***	7.38	665.38	***4.26***	940.18	***0.93***		0.0009	0.0046	0.4109	0.0026	0.5805	0.0006
28	Khulna	***4.07***	***5.66***	764.25	***3.25***	1263.98	6.19		0.0020	0.0028	0.3733	0.0016	0.6174	0.0030
29	Satkhira	6.75	10.83	746.38	7.04	1080.14	6.08		0.0036	0.0058	0.4019	0.0038	0.5816	0.0033
30	Barisal	***0.94***	11.52	822.58	***1.18***	1261.70	8.45		0.0004	0.0055	0.3905	0.0006	0.5990	0.0040
31	Bhola	6.42	8.07	876.78	***3.77***	1424.37	***5.56***		0.0028	0.0058	0.3771	0.0016	0.6126	0.0024
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.0683	0.1694	12.1530	0.0758	16.8601	1.6737

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B76. Determination of Best Fit Distribution

Chi-square values of Temperature(Min) Data for different probability distributions

Minimum Monthly Average Minimum Temperature of Total Post-Monsoon(Nov-Feb)

		Scaling					
	Rank	2	3	5	1	6	4
	Comparison	1.07	1.32	55.90	**1.00**	70.15	2.37

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Bogra	***4.95***	10.21	268.82	7.24	301.56	21.07	0.0081	0.0166	0.4379	0.0118	0.4913	0.0343
2	Chittagong	***2.35***	19.14	413.58	***3.98***	469.84	97.59	0.0023	0.0190	0.4109	0.0040	0.4668	0.0970
3	Cox's Bazar	8.87	13.79	511.58	6.51	713.67	18.31	0.0070	0.0108	0.4020	0.0051	0.5607	0.0144
4	Dinajpur	8.87	13.79	511.58	6.51	713.67	18.31	0.0070	0.0108	0.4020	0.0051	0.5607	0.0144
5	Faridpur	***3.70***	***5.21***	303.84	***3.44***	415.19	6.99	0.0050	0.0071	0.4115	0.0047	0.5623	0.0095
6	Feni	***3.70***	***3.79***	299.22	***1.39***	410.36	9.30	0.0051	0.0052	0.4112	0.0019	0.5639	0.0128
7	Hatiya	***5.21***	9.50	293.06	***3.87***	291.19	27.84	0.0083	0.0151	0.4647	0.0061	0.4617	0.0441
8	Ishurdi	***4.94***	***5.21***	193.45	***0.46***	208.21	14.41	0.0116	0.0122	0.4534	0.0011	0.4880	0.0338
9	Khepupara	10.16	6.64	387.70	14.21	539.63	21.72	0.0104	0.0068	0.3956	0.0145	0.5506	0.0222
10	Kutubdia	13.30	***5.17***	456.39	13.39	630.58	10.63	0.0118	0.0046	0.4041	0.0119	0.5583	0.0094
11	Maijdicourt	***2.80***	7.36	305.72	***3.25***	368.65	6.35	0.0040	0.0106	0.4404	0.0047	0.5311	0.0092
12	Madaripur	***4.84***	***5.21***	263.51	***2.86***	320.87	6.41	0.0080	0.0086	0.4365	0.0047	0.5315	0.0106
13	Mongla	***3.09***	***3.89***	283.05	6.91	474.54	9.78	0.0040	0.0050	0.3623	0.0088	0.6074	0.0125
14	Mymensingh	***4.63***	***4.50***	267.10	7.61	364.04	9.00	0.0071	0.0069	0.4066	0.0116	0.5542	0.0137
15	Patuakhali	13.30	9.86	350.85	11.66	404.89	34.23	0.0161	0.0120	0.4254	0.0141	0.4909	0.0415
16	Rajshahi	***4.62***	***5.93***	204.21	***4.77***	225.52	8.35	0.0102	0.0131	0.4504	0.0105	0.4974	0.0184
17	Rangamati	8.03	9.14	231.43	***4.39***	186.52	***4.69***	0.0181	0.0206	0.5210	0.0099	0.4199	0.0106
18	Rangpur	***3.84***	6.64	256.52	7.48	349.31	***4.06***	0.0061	0.0106	0.4086	0.0119	0.5564	0.0065
19	Shitakunda	***2.92***	14.97	237.85	***0.75***	195.21	***2.89***	0.0064	0.0329	0.5232	0.0017	0.4294	0.0063
20	Srimongol	***4.56***	***0.93***	183.49	***3.20***	226.42	***5.37***	0.0108	0.0022	0.4328	0.0076	0.5340	0.0127
21	Sylhet	***4.56***	***0.93***	183.49	***3.20***	226.42	***5.37***	0.0108	0.0022	0.4328	0.0076	0.5340	0.0127
22	Tangail	8.32	7.33	231.53	***4.64***	317.15	10.63	0.0143	0.0127	0.3995	0.0080	0.5472	0.0183
23	Teknaf	***3.67***	18.07	517.25	***2.41***	663.86	6.44	0.0030	0.0022	0.4269	0.0020	0.5479	0.0053
24	Comilla	***3.45***	***5.21***	275.41	***2.20***	386.29	***5.33***	0.0051	0.0077	0.4063	0.0033	0.5698	0.0079
25	Dhaka	***4.04***	***2.36***	256.05	***1.91***	309.08	***4.75***	0.0070	0.0041	0.4428	0.0033	0.5346	0.0082
26	Chandpur	7.17	***3.43***	337.69	7.98	536.26	7.15	0.0080	0.0038	0.3753	0.0089	0.5961	0.0079
27	Jessore	***4.47***	***5.93***	262.35	11.66	347.41	10.04	0.0070	0.0092	0.4087	0.0182	0.5413	0.0156
28	Khulna	***0.65***	7.36	248.12	***2.49***	284.58	***3.16***	0.0012	0.0135	0.4541	0.0046	0.5209	0.0058
29	Satkhira	14.50	6.64	365.44	24.22	572.15	12.57	0.0146	0.0067	0.3671	0.0243	0.5747	0.0126
30	Barisal	***3.77***	8.79	314.31	***1.82***	422.50	10.09	0.0050	0.0115	0.4129	0.0024	0.5550	0.0133
31	Bhola	6.88	13.79	385.60	***0.94***	515.65	14.29	0.0073	0.0067	0.4115	0.0010	0.5502	0.0152
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.2503	0.3108	13.1382	0.2350	16.4882	0.5567

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B77. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

January

		Scaling					
	Rank	3	4	5	1	6	2
	Comparison	1.55	3.03	4.45	**1.00**	17.96	1.01

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	8.91	12.55	15.09	***5.16***	168.04	***4.02***
2	Bhola	64.62	20.14	163.65	64.21	3048.90	39.97
3	Bogra	6.58	13.93	107.80	12.78	66.98	30.20
4	Chandpur	6.12	18.41	43.68	***4.95***	352.11	8.69
5	Chittagong	11.38	***2.55***	16.20	***2.93***	53.46	8.88
6	Comilla	***2.15***	13.93	22.59	***2.53***	101.46	***0.49***
7	Cox's Bazar	17.44	12.90	41.90	16.00	71.66	18.47
8	Dhaka	***1.28***	9.10	22.17	***4.03***	162.07	***0.65***
9	Dinajpur	***5.03***	51.17	28.34	***5.41***	17.22	11.97
10	Faridpur	7.50	12.21	45.20	21.80	190.35	10.70
11	Feni	***5.35***	9.79	21.24	***5.11***	195.81	***1.50***
12	Hatiya	6.10	66.69	30.44	8.43	6.13	11.13
13	Ishurdi	***2.55***	17.03	67.29	10.67	427.36	18.25
14	Jessore	17.34	19.10	30.38	***5.57***	145.16	6.08
15	Khepupara	40.01	27.03	22.04	6.43	44.83	10.22
16	Khulna	6.78	12.90	17.93	6.52	59.40	***2.47***
17	Kutubdia	***2.34***	9.79	41.96	11.32	134.91	***3.79***
18	Madaripur	8.67	6.00	20.92	13.22	178.74	6.24
19	M.Court	14.41	***3.24***	31.87	11.81	209.02	13.58
20	Mongla	7.64	12.00	23.24	9.05	105.59	***2.95***
21	Mymensingh	***5.21***	11.86	71.40	***4.97***	567.54	9.61
22	Patuakhali	8.86	19.79	15.52	***2.51***	34.50	***1.49***
23	Rajshahi	***0.91***	11.52	35.84	***2.79***	141.11	***1.53***
24	Rangamati	6.91	29.45	32.29	***1.66***	150.51	***1.77***
25	Rangpur	***3.22***	12.21	55.72	11.06	299.74	***5.01***
26	Sandwip	26.75	27.72	29.40	***3.97***	57.25	***3.54***
27	Satkhira	12.74	32.90	14.99	***1.72***	14.75	***5.49***
28	Shitakunda	11.39	17.03	12.82	***2.77***	59.94	***4.46***
29	Srimongol	24.18	17.72	35.05	28.11	290.24	17.64
30	Sylhet	***3.95***	6.34	77.28	6.22	513.67	***1.76***
31	Tangail	***3.95***	6.34	77.28	6.22	513.67	***1.76***
32	Teknaf	33.70	30.48	31.54	***3.57***	36.88	8.66
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
0.0417	0.0587	0.0706	0.0242	0.7860	0.0188
0.0190	0.0059	0.0481	0.0189	0.8963	0.0118
0.0276	0.0585	0.4524	0.0536	0.2811	0.1267
0.0141	0.0424	0.1006	0.0114	0.8114	0.0200
0.1193	0.0267	0.1698	0.0307	0.5603	0.0931
0.0150	0.0973	0.1578	0.0177	0.7087	0.0034
0.0978	0.0723	0.2349	0.0897	0.4017	0.1035
0.0064	0.0457	0.1113	0.0202	0.8132	0.0033
0.0064	0.0457	0.1113	0.0202	0.8132	0.0033
0.0422	0.4295	0.2379	0.0454	0.1445	0.1005
0.0261	0.0424	0.1571	0.0758	0.6615	0.0372
0.0224	0.0410	0.0890	0.0214	0.8200	0.0063
0.0473	0.5173	0.2361	0.0654	0.0475	0.0863
0.0047	0.0314	0.1239	0.0196	0.7868	0.0336
0.0775	0.0854	0.1358	0.0249	0.6491	0.0272
0.2658	0.1796	0.1464	0.0427	0.2977	0.0679
0.0639	0.1217	0.1692	0.0615	0.5604	0.0233
0.0115	0.0480	0.2056	0.0554	0.6610	0.0186
0.0508	0.0114	0.1123	0.0416	0.7362	0.0478
0.0371	0.0257	0.0895	0.0565	0.7646	0.0267
0.0476	0.0748	0.1448	0.0564	0.6580	0.0184
0.0078	0.0177	0.1065	0.0074	0.8463	0.0143
0.1071	0.2394	0.1877	0.0303	0.4174	0.0180
0.0047	0.0595	0.1850	0.0144	0.7285	0.0079
0.0311	0.1323	0.1451	0.0074	0.6762	0.0079
0.0083	0.0315	0.1440	0.0286	0.7746	0.0130
0.1800	0.1865	0.1978	0.0267	0.3851	0.0238
0.1543	0.3984	0.1815	0.0208	0.1786	0.0665
0.1051	0.1571	0.1183	0.0255	0.5529	0.0412
0.0585	0.0429	0.0849	0.0681	0.7029	0.0427
0.0065	0.0104	0.1268	0.0102	0.8432	0.0029
0.0065	0.0104	0.1268	0.0102	0.8432	0.0029
1.7139	3.3475	4.9087	1.1030	19.8081	1.1188

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B78. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

February

Appendix B

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	1.36	2.05	4.50	1.08	16.50	**1.00**

	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	8.40	***1.17***	27.01	***3.37***	313.34	9.75	0.0231	0.0032	0.0744	0.0093	0.8631	0.0269
2	Bhola	19.82	42.21	90.51	***3.90***	212.63	***4.90***	0.0530	0.1129	0.2420	0.0104	0.5686	0.0131
3	Bogra	19.14	19.45	209.93	23.92	198.29	255.50	0.0264	0.0268	0.2891	0.0329	0.2730	0.3518
4	Chandpur	***3.23***	14.28	23.95	***1.62***	190.03	***1.32***	0.0138	0.0609	0.1022	0.0069	0.8106	0.0056
5	Chittagong	8.16	***1.17***	23.48	12.85	45.04	10.22	0.0808	0.0116	0.2326	0.1273	0.4463	0.1012
6	Comilla	6.21	16.00	31.87	7.54	143.81	***2.20***	0.0299	0.0771	0.1535	0.0363	0.6926	0.0106
7	Cox's Bazar	9.38	13.93	30.70	***2.70***	59.07	***3.33***	0.0787	0.1170	0.2577	0.0227	0.4960	0.0280
8	Dhaka	***2.28***	7.72	39.04	***3.19***	299.26	***1.51***	0.0065	0.0219	0.1106	0.0090	0.8478	0.0043
9	Dinajpur	68.37	47.03	41.05	***2.54***	26.71	***4.75***	0.0065	0.0219	0.1106	0.0090	0.8478	0.0043
10	Faridpur	***2.50***	6.69	17.15	7.85	79.11	***1.46***	0.3590	0.2470	0.2155	0.0133	0.1403	0.0250
11	Feni	***3.10***	14.28	15.15	6.99	56.49	***0.48***	0.0218	0.0583	0.1495	0.0684	0.6894	0.0127
12	Hatiya	***4.66***	***4.62***	17.07	11.19	34.27	***4.75***	0.0321	0.1480	0.1570	0.0724	0.5855	0.0050
13	Ishurdi	7.67	9.45	59.56	***3.92***	385.78	***4.56***	0.0609	0.0603	0.2230	0.1462	0.4476	0.0620
14	Jessore	***1.09***	14.28	30.72	6.87	127.12	***0.12***	0.0163	0.0201	0.1265	0.0083	0.8192	0.0097
15	Khepupara	***4.14***	17.72	31.87	***4.87***	95.64	***1.05***	0.0060	0.0792	0.1705	0.0381	0.7055	0.0007
16	Khulna	10.80	7.38	16.16	***3.68***	52.35	9.41	0.0267	0.1141	0.2052	0.0314	0.6159	0.0068
17	Kutubdia	6.89	17.03	74.07	15.43	214.18	12.83	0.1083	0.0740	0.1620	0.0369	0.5246	0.0943
18	Madaripur	10.96	10.83	20.54	***5.16***	177.95	***4.15***	0.0202	0.0500	0.2176	0.0453	0.6291	0.0377
19	M.Court	***5.89***	23.24	53.70	7.01	229.80	9.77	0.0179	0.0706	0.1630	0.0213	0.6976	0.0297
20	Mongla	***4.27***	10.50	41.33	14.26	152.95	11.96	0.0478	0.0472	0.0895	0.0225	0.7751	0.0181
21	Mymensingh	10.47	***4.97***	65.57	12.23	423.52	7.03	0.0181	0.0446	0.1757	0.0606	0.6501	0.0509
22	Patuakhali	25.48	18.41	34.35	11.37	82.17	13.14	0.0200	0.0095	0.1252	0.0233	0.8086	0.0134
23	Rajshahi	***3.46***	10.48	21.48	7.79	56.64	***2.90***	0.1378	0.0996	0.1857	0.0615	0.4443	0.0711
24	Rangamati	***1.20***	10.83	32.27	8.82	159.68	***3.02***	0.0337	0.1020	0.2090	0.0758	0.5512	0.0282
25	Rangpur	***2.63***	15.66	47.47	***2.82***	182.94	***2.92***	0.0056	0.0502	0.1495	0.0409	0.7399	0.0140
26	Sandwip	***3.82***	13.24	23.11	10.31	54.27	***1.90***	0.0103	0.0615	0.1866	0.0111	0.7190	0.0115
27	Satkhira	16.32	27.38	15.02	8.33	16.74	6.95	0.0358	0.1241	0.2166	0.0967	0.5088	0.0178
28	Shitakunda	10.93	17.72	13.44	***0.92***	34.00	***3.70***	0.1798	0.3017	0.1655	0.0918	0.1845	0.0766
29	Srimongol	7.93	8.07	31.81	***5.38***	273.23	***4.44***	0.1354	0.2196	0.1665	0.0114	0.4213	0.0458
30	Sylhet	***2.18***	***3.93***	66.05	9.98	343.37	***3.77***	0.0240	0.0244	0.0962	0.0163	0.8258	0.0134
31	Tangail	***2.18***	***3.93***	66.05	9.98	343.37	***3.77***	0.0051	0.0092	0.1539	0.0233	0.7999	0.0088
32	Teknaf	***3.16***	10.83	23.03	***1.78***	76.92	***2.54***	0.0051	0.0092	0.1539	0.0233	0.7999	0.0088
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.6462	2.4774	5.4362	1.3040	19.9287	1.2076

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B79. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

March

		Scaling					
	Rank	3	4	5	1	6	2
	Comparison	1.11	2.11	3.88	**1.00**	8.92	1.09

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***5.76***	14.62	28.93	6.36	83.93	***2.79***	0.0404	0.1027	0.2032	0.0447	0.5894	0.0196
2	Bhola	***5.40***	10.48	47.11	6.61	330.09	***1.35***	0.0135	0.0261	0.1175	0.0165	0.8231	0.0034
3	Bogra	20.10	46.00	326.28	92.89	291.12	1.85E+08	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
4	Chandpur	***5.38***	19.10	17.94	7.07	58.63	***1.22***	0.0492	0.1747	0.1641	0.0647	0.5362	0.0111
5	Chittagong	***2.76***	15.66	23.75	***5.24***	15.39	***0.32***	0.0437	0.2480	0.3763	0.0831	0.2438	0.0051
6	Comilla	32.62	15.66	55.07	13.84	164.83	19.46	0.1082	0.0519	0.1827	0.0459	0.5468	0.0645
7	Cox's Bazar	7.51	22.55	46.12	***5.26***	85.46	***4.21***	0.0439	0.1318	0.2695	0.0307	0.4994	0.0246
8	Dhaka	***5.04***	17.72	33.39	***2.05***	101.88	***1.67***	0.0311	0.1096	0.2064	0.0127	0.6298	0.0103
9	Dinajpur	63.73	33.24	26.31	6.32	16.15	***4.39***	0.0311	0.1096	0.2064	0.0127	0.6298	0.0103
10	Faridpur	***2.39***	8.76	28.72	13.00	65.45	***2.51***	0.4245	0.2214	0.1752	0.0421	0.1075	0.0292
11	Feni	20.05	10.83	26.18	***4.75***	76.46	13.03	0.0198	0.0725	0.2377	0.1076	0.5417	0.0208
12	Hatiya	***4.88***	11.17	45.98	10.38	75.80	9.00	0.1326	0.0716	0.1730	0.0314	0.5054	0.0861
13	Ishurdi	12.06	10.48	60.82	13.30	157.26	6.29	0.0310	0.0711	0.2925	0.0660	0.4822	0.0572
14	Jessore	***4.01***	9.45	21.19	***2.90***	30.34	***4.66***	0.0463	0.0403	0.2337	0.0511	0.6043	0.0242
15	Khepupara	9.99	13.93	39.30	14.72	79.13	***4.79***	0.0552	0.1302	0.2921	0.0400	0.4182	0.0643
16	Khulna	7.45	23.59	20.42	***3.63***	16.52	***3.42***	0.0617	0.0861	0.2428	0.0909	0.4889	0.0296
17	Kutubdia	***5.75***	14.97	47.26	9.47	82.55	***5.72***	0.0994	0.3144	0.2721	0.0484	0.2202	0.0455
18	Madaripur	8.92	14.28	9.07	***4.39***	35.52	***3.78***	0.0347	0.0903	0.2852	0.0571	0.4982	0.0345
19	M.Court	***4.96***	17.72	23.35	***5.15***	49.26	***2.24***	0.0483	0.1726	0.2274	0.0501	0.4797	0.0218
20	Mongla	***2.48***	12.50	35.48	10.41	73.54	***4.66***	0.1174	0.1879	0.1194	0.0578	0.4676	0.0498
21	Mymensingh	7.84	8.76	57.62	***4.44***	236.00	***3.06***	0.0179	0.0899	0.2551	0.0748	0.5288	0.0335
22	Patuakhali	7.66	13.93	19.94	***2.58***	37.67	***2.52***	0.0247	0.0276	0.1814	0.0140	0.7428	0.0096
23	Rajshahi	***3.11***	***4.28***	22.33	13.90	74.93	***3.05***	0.0909	0.1652	0.2365	0.0306	0.4468	0.0299
24	Rangamati	***0.34***	11.86	31.51	12.45	83.92	***5.84***	0.0256	0.0352	0.1836	0.1144	0.6162	0.0251
25	Rangpur	***2.89***	10.14	49.39	13.64	159.73	***1.90***	0.0024	0.0813	0.2160	0.0853	0.5751	0.0400
26	Sandwip	***1.08***	9.45	13.91	14.26	13.00	***0.87***	0.0121	0.0427	0.2078	0.0574	0.6720	0.0080
27	Satkhira	8.67	12.90	9.41	6.25	8.34	***4.55***	0.0205	0.1797	0.2647	0.2712	0.2474	0.0165
28	Shitakunda	9.76	23.59	24.13	***1.39***	25.68	***2.52***	0.1730	0.2573	0.1878	0.1248	0.1664	0.0908
29	Srimongol	12.59	28.07	45.02	***3.51***	157.75	***5.12***	0.1121	0.2709	0.2771	0.0160	0.2949	0.0289
30	Sylhet	***1.43***	11.86	92.24	***2.77***	369.33	***1.90***	0.0499	0.1114	0.1786	0.0139	0.6259	0.0203
31	Tangail	***1.43***	11.86	92.24	***2.77***	369.33	***1.90***	0.0030	0.0247	0.1924	0.0058	0.7702	0.0040
32	Teknaf	***1.77***	10.48	35.72	20.26	80.42	12.63	0.0030	0.0247	0.1924	0.0058	0.7702	0.0040
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.9672	3.7234	6.8506	1.7674	15.7689	1.9226

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B80. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

April

								Scaling					
								Rank	3	4	5	2	6	1
								Comparison	2.16	3.09	8.74	1.57	14.41	**1.00**
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***5.39***	7.03	52.51	***3.26***	169.31	***5.68***		0.0222	0.0289	0.2159	0.0134	0.6962	0.0234
2	Bhola	78.70	36.34	45.78	***4.30***	42.68	***5.82***		0.3684	0.1701	0.2143	0.0201	0.1998	0.0272
3	Bogra	8.97	***4.62***	235.06	8.55	419.81	16.51		0.0129	0.0067	0.3389	0.0123	0.6053	0.0238
4	Chandpur	6.43	***2.21***	23.65	8.33	100.94	***5.10***		0.0438	0.0150	0.1613	0.0568	0.6883	0.0348
5	Chittagong	10.10	***2.55***	19.61	14.62	12.19	6.08		0.1550	0.0392	0.3010	0.2244	0.1871	0.0934
6	Comilla	20.95	21.86	56.78	***4.99***	90.21	10.53		0.1020	0.1065	0.2765	0.0243	0.4394	0.0513
7	Cox's Bazar	***4.65***	6.34	30.01	6.60	46.35	***2.35***		0.0482	0.0659	0.3116	0.0685	0.4813	0.0244
8	Dhaka	***2.59***	10.83	34.06	***3.42***	66.90	***0.74***		0.0219	0.0913	0.2873	0.0288	0.5644	0.0063
9	Dinajpur	35.95	30.48	28.62	***1.47***	29.05	***4.41***		0.0219	0.0913	0.2873	0.0288	0.5644	0.0063
10	Faridpur	***1.90***	10.83	31.61	***2.71***	38.26	***0.62***		0.2766	0.2345	0.2202	0.0113	0.2235	0.0340
11	Feni	***5.68***	***5.31***	26.98	***1.99***	72.31	***3.36***		0.0221	0.1260	0.3679	0.0316	0.4452	0.0072
12	Hatiya	6.20	***5.31***	21.90	6.04	18.98	***5.19***		0.0491	0.0459	0.2333	0.0172	0.6253	0.0290
13	Ishurdi	6.15	17.38	34.28	***2.48***	25.45	***3.41***		0.0974	0.0835	0.3443	0.0949	0.2983	0.0815
14	Jessore	***2.41***	6.69	26.54	***3.61***	16.35	***2.16***		0.0690	0.1950	0.3846	0.0278	0.2855	0.0382
15	Khepupara	***5.69***	12.90	51.27	***3.47***	72.06	***2.02***		0.0417	0.1158	0.4595	0.0625	0.2831	0.0373
16	Khulna	14.86	28.76	40.59	***3.27***	31.19	7.30		0.0386	0.0875	0.3478	0.0235	0.4889	0.0137
17	Kutubdia	9.06	***1.86***	33.80	8.90	74.29	***5.49***		0.1180	0.2283	0.3222	0.0260	0.2476	0.0580
18	Madaripur	11.73	16.00	27.78	***3.69***	68.95	***5.35***		0.0679	0.0140	0.2534	0.0667	0.5569	0.0412
19	M.Court	***2.04***	9.45	29.84	***2.07***	80.01	***1.69***		0.0163	0.0755	0.2385	0.0165	0.6396	0.0135
20	Mongla	7.82	***5.00***	48.60	27.62	132.58	9.07		0.0879	0.1199	0.2081	0.0276	0.5165	0.0400
21	Mymensingh	***3.02***	15.66	69.47	***2.57***	149.12	***1.40***		0.0339	0.0217	0.2107	0.1197	0.5747	0.0393
22	Patuakhali	6.30	***4.62***	20.85	***2.71***	35.31	***2.81***		0.0125	0.0649	0.2880	0.0107	0.6181	0.0058
23	Rajshahi	***2.27***	12.55	25.31	***2.68***	25.26	***0.50***		0.0868	0.0636	0.2872	0.0373	0.4863	0.0387
24	Rangamati	6.09	30.14	45.31	***4.94***	55.47	***3.97***		0.0331	0.1831	0.3691	0.0390	0.3684	0.0074
25	Rangpur	6.08	12.90	64.50	6.63	114.57	6.58		0.0417	0.2066	0.3105	0.0338	0.3801	0.0272
26	Sandwip	***3.55***	***3.59***	15.08	8.67	14.83	***3.48***		0.0288	0.0610	0.3053	0.0314	0.5423	0.0312
27	Satkhira	10.83	24.62	23.92	17.01	11.04	***5.03***		0.0721	0.0729	0.3066	0.1762	0.3015	0.0707
28	Shitakunda	8.35	11.86	25.09	***4.82***	46.46	***3.38***		0.1172	0.2663	0.2587	0.1840	0.1194	0.0544
29	Srimongol	***3.37***	17.38	34.80	***4.53***	92.51	***3.80***		0.0835	0.1187	0.2510	0.0482	0.4648	0.0339
30	Sylhet	***2.46***	10.83	62.81	***4.35***	196.79	***2.24***		0.0215	0.1111	0.2225	0.0290	0.5916	0.0243
31	Tangail	***2.46***	10.83	62.81	***4.35***	196.79	***2.24***		0.0088	0.0387	0.2247	0.0156	0.7042	0.0080
32	Teknaf	***5.87***	28.07	33.01	8.32	59.83	***1.50***		0.0088	0.0387	0.2247	0.0156	0.7042	0.0080
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		2.2297	3.1882	9.0330	1.6237	14.8922	1.0333

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B81. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

May

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	2.31	3.83	9.08	1.43	14.56	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***4.89***	***5.31***	29.51	***3.58***	95.00	***4.59***	0.0342	0.0372	0.2065	0.0251	0.6649	0.0321
2	Bhola	9.16	23.93	35.02	***2.04***	80.28	***2.89***	0.0597	0.1561	0.2284	0.0133	0.5236	0.0188
3	Bogra	6.95	14.28	121.42	***5.80***	94.71	39.42	0.0246	0.0505	0.4297	0.0205	0.3352	0.1395
4	Chandpur	6.50	7.38	29.99	19.18	95.51	6.29	0.0394	0.0448	0.1819	0.1163	0.5794	0.0382
5	Chittagong	7.31	14.62	45.61	14.45	20.66	11.06	0.0643	0.1286	0.4011	0.1271	0.1817	0.0972
6	Comilla	***5.40***	20.48	40.60	***2.85***	38.26	***1.57***	0.0494	0.1876	0.3719	0.0261	0.3505	0.0144
7	Cox's Bazar	11.66	***1.86***	32.30	8.40	65.85	8.33	0.0908	0.0145	0.2515	0.0654	0.5129	0.0649
8	Dhaka	***3.95***	14.28	42.84	***4.82***	100.39	***0.62***	0.0236	0.0855	0.2567	0.0289	0.6015	0.0037
9	Dinajpur	389.14	44.28	65.43	***5.29***	63.91	8.53	0.0236	0.0855	0.2567	0.0289	0.6015	0.0037
10	Faridpur	6.13	8.76	28.20	***2.02***	39.67	***3.03***	0.6749	0.0768	0.1135	0.0092	0.1108	0.0148
11	Feni	***4.22***	***3.24***	18.02	***5.51***	45.09	***3.88***	0.0698	0.0997	0.3212	0.0230	0.4518	0.0345
12	Hatiya	15.96	20.14	53.94	***3.96***	39.27	***5.75***	0.0527	0.0405	0.2254	0.0689	0.5639	0.0485
13	Ishurdi	10.66	14.97	35.43	***1.82***	33.01	***5.37***	0.1148	0.1449	0.3880	0.0285	0.2825	0.0414
14	Jessore	11.58	10.14	41.07	10.01	39.41	6.50	0.1052	0.1478	0.3499	0.0180	0.3260	0.0531
15	Khepupara	7.26	13.24	27.73	6.46	19.02	***2.09***	0.0976	0.0854	0.3460	0.0843	0.3320	0.0547
16	Khulna	***1.57***	10.83	15.47	***1.91***	10.80	***0.20***	0.0958	0.1747	0.3658	0.0852	0.2509	0.0275
17	Kutubdia	***1.78***	7.03	40.32	***0.92***	84.61	***1.18***	0.0385	0.2655	0.3793	0.0469	0.2648	0.0050
18	Madaripur	9.55	22.21	14.68	***3.58***	15.74	***4.09***	0.0131	0.0518	0.2968	0.0068	0.6229	0.0087
19	M.Court	***2.88***	6.34	41.35	***4.59***	142.72	***1.95***	0.0144	0.0318	0.2069	0.0230	0.7142	0.0098
20	Mongla	***1.49***	***4.00***	26.16	***2.28***	54.36	***2.62***	0.1367	0.3180	0.2102	0.0512	0.2254	0.0585
21	Mymensingh	***0.85***	6.69	47.28	***3.10***	100.58	***3.16***	0.0164	0.0440	0.2877	0.0250	0.5980	0.0288
22	Patuakhali	***2.04***	12.90	21.83	***4.60***	16.12	***0.39***	0.0053	0.0414	0.2924	0.0192	0.6222	0.0196
23	Rajshahi	7.03	22.90	24.04	6.07	12.35	***2.49***	0.0352	0.2228	0.3772	0.0795	0.2785	0.0068
24	Rangamati	12.48	14.28	38.89	7.28	80.38	7.02	0.0939	0.3058	0.3211	0.0811	0.1650	0.0332
25	Rangpur	8.40	***3.24***	42.26	8.16	143.73	6.91	0.0779	0.0890	0.2426	0.0454	0.5014	0.0438
26	Sandwip	***3.05***	14.28	32.04	14.72	38.62	***0.49***	0.0395	0.0152	0.1987	0.0384	0.6758	0.0325
27	Satkhira	***3.83***	17.72	12.60	***0.42***	***3.51***	***0.47***	0.0296	0.1383	0.3105	0.1426	0.3743	0.0047
28	Shitakunda	***5.82***	19.10	39.16	***4.34***	60.00	***1.56***	0.0993	0.4596	0.3268	0.0110	0.0910	0.0123
29	Srimongol	***0.68***	12.55	37.84	***5.84***	156.27	***2.79***	0.0448	0.1470	0.3013	0.0334	0.4616	0.0120
30	Sylhet	***5.38***	14.28	93.47	***4.50***	345.64	***4.27***	0.0031	0.0581	0.1752	0.0270	0.7236	0.0129
31	Tangail	***5.38***	14.28	93.47	***4.50***	345.64	***4.27***	0.0115	0.0305	0.1999	0.0096	0.7393	0.0091
32	Teknaf	***1.16***	8.76	26.79	16.41	102.53	***1.00***	0.0115	0.0305	0.1999	0.0096	0.7393	0.0091
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	2.2913	3.8095	9.0208	1.4185	14.4662	0.9937

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B82. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

June

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	1.89	2.72	8.60	1.50	16.61	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	9.83	11.86	58.25	***1.24***	218.03	***4.56***	0.0324	0.0390	0.1917	0.0041	0.7177	0.0150
2	Bhola	***4.37***	12.90	81.42	***0.87***	542.57	***1.74***	0.0068	0.0200	0.1264	0.0013	0.8427	0.0027
3	Bogra	***2.61***	***4.62***	88.32	10.07	119.29	***1.59***	0.0115	0.0204	0.3899	0.0445	0.5267	0.0070
4	Chandpur	6.43	28.07	48.01	***3.17***	160.33	***1.48***	0.0260	0.1134	0.1940	0.0128	0.6478	0.0060
5	Chittagong	14.17	7.38	42.70	14.34	17.70	27.45	0.1146	0.0596	0.3451	0.1159	0.1430	0.2218
6	Comilla	10.04	19.10	88.25	***1.31***	175.42	6.12	0.0334	0.0636	0.2939	0.0044	0.5843	0.0204
7	Cox's Bazar	***5.28***	***3.93***	58.00	16.63	114.78	8.16	0.0255	0.0190	0.2805	0.0804	0.5551	0.0395
8	Dhaka	***2.07***	6.34	52.45	7.63	155.69	9.50	0.0088	0.0272	0.2244	0.0326	0.6662	0.0407
9	Dinajpur	208.19	38.41	53.22	11.47	49.06	6.29	0.0088	0.0272	0.2244	0.0326	0.6662	0.0407
10	Faridpur	***5.19***	***4.97***	25.61	7.04	49.11	***2.49***	0.5678	0.1048	0.1451	0.0313	0.1338	0.0171
11	Feni	***4.09***	23.24	51.27	6.42	96.16	***0.73***	0.0550	0.0526	0.2713	0.0745	0.5203	0.0264
12	Hatiya	***1.88***	***5.66***	59.99	***5.17***	102.99	***4.04***	0.0225	0.1278	0.2819	0.0353	0.5286	0.0040
13	Ishurdi	6.70	17.38	35.51	***1.26***	35.44	***1.26***	0.0104	0.0315	0.3338	0.0288	0.5731	0.0225
14	Jessore	***4.21***	9.10	61.95	***3.68***	93.33	***5.81***	0.0687	0.1781	0.3640	0.0130	0.3633	0.0129
15	Khepupara	7.71	11.52	42.92	7.47	38.77	***5.68***	0.0236	0.0511	0.3479	0.0207	0.5241	0.0326
16	Khulna	7.22	13.24	19.23	***1.66***	23.30	***2.02***	0.0676	0.1010	0.3763	0.0655	0.3399	0.0498
17	Kutubdia	6.72	***5.66***	76.46	***5.61***	196.29	6.26	0.1082	0.1986	0.2885	0.0249	0.3495	0.0304
18	Madaripur	17.42	13.59	23.59	6.11	80.91	9.30	0.0226	0.0190	0.2575	0.0189	0.6609	0.0211
19	M.Court	***2.30***	19.10	72.51	***1.31***	138.94	***4.83***	0.0096	0.0799	0.3034	0.0055	0.5814	0.0202
20	Mongla	***0.13***	9.00	36.55	***5.52***	73.86	***3.22***	0.1155	0.0900	0.1563	0.0405	0.5361	0.0616
21	Mymensingh	***1.52***	10.83	47.03	6.72	80.57	***0.38***	0.0010	0.0702	0.2850	0.0430	0.5758	0.0251
22	Patuakhali	***0.87***	7.38	22.81	***3.52***	33.08	***1.16***	0.0104	0.0736	0.3198	0.0457	0.5479	0.0026
23	Rajshahi	27.08	31.52	31.80	***4.20***	13.35	***3.91***	0.0126	0.1072	0.3314	0.0512	0.4807	0.0169
24	Rangamati	7.38	21.86	34.72	6.38	45.26	***2.43***	0.2421	0.2818	0.2843	0.0375	0.1194	0.0349
25	Rangpur	***2.95***	14.97	56.85	***3.74***	128.14	***0.36***	0.0626	0.1852	0.2941	0.0541	0.3834	0.0206
26	Sandwip	***3.80***	23.59	55.04	72.01	42.02	7.31	0.0143	0.0723	0.2746	0.0181	0.6190	0.0017
27	Satkhira	***5.08***	8.76	13.69	***5.47***	6.37	***4.25***	0.0186	0.1157	0.2701	0.3534	0.2062	0.0359
28	Shitakunda	***5.95***	15.31	53.98	***1.98***	134.48	***1.28***	0.1164	0.2008	0.3139	0.1253	0.1461	0.0975
29	Srimongol	13.41	44.28	110.98	11.47	415.70	25.08	0.0279	0.0719	0.2535	0.0093	0.6314	0.0060
30	Sylhet	***1.53***	***4.62***	66.90	8.59	348.12	***3.47***	0.0216	0.0713	0.1787	0.0185	0.6695	0.0404
31	Tangail	***1.53***	***4.62***	66.90	8.59	348.12	***3.47***	0.0035	0.0107	0.1544	0.0198	0.8036	0.0080
32	Teknaf	7.73	14.28	29.11	***3.72***	63.05	***2.45***	0.0035	0.0107	0.1544	0.0198	0.8036	0.0080
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.8740	2.6953	8.5106	1.4831	16.4472	0.9899

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B83. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

July

								Scaling					
								Rank	2	4	5	3	6	1
								Comparison	1.19	2.83	8.61	1.52	16.87	**1.00**
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***3.38***	13.24	74.19	***2.05***	307.74	***1.70***		0.0084	0.0329	0.1844	0.0051	0.7650	0.0042
2	Bhola	***5.86***	10.48	107.52	10.71	565.16	***2.13***		0.0084	0.0149	0.1532	0.0153	0.8052	0.0030
3	Bogra	***4.63***	6.34	63.24	***2.78***	69.97	7.52		0.0300	0.0411	0.4093	0.0180	0.4529	0.0487
4	Chandpur	6.92	***3.59***	51.58	12.25	323.33	***5.06***		0.0172	0.0089	0.1281	0.0304	0.8029	0.0126
5	Chittagong	19.52	10.83	47.70	43.23	24.95	21.65		0.1163	0.0645	0.2842	0.2575	0.1486	0.1289
6	Comilla	13.84	13.59	61.02	7.93	98.35	7.10		0.0686	0.0673	0.3023	0.0393	0.4873	0.0352
7	Cox's Bazar	6.39	***3.24***	51.53	11.54	105.04	8.18		0.0344	0.0174	0.2772	0.0621	0.5650	0.0440
8	Dhaka	10.07	***4.62***	55.26	18.73	175.98	17.00		0.0358	0.0164	0.1962	0.0665	0.6248	0.0604
9	Dinajpur	***3.86***	60.83	66.17	7.08	27.75	9.51		0.0358	0.0164	0.1962	0.0665	0.6248	0.0604
10	Faridpur	***1.69***	6.34	32.21	***5.68***	51.87	***3.24***		0.0220	0.3472	0.3777	0.0404	0.1584	0.0543
11	Feni	***1.73***	***4.97***	46.53	***3.56***	135.55	***5.65***		0.0167	0.0628	0.3188	0.0563	0.5134	0.0320
12	Hatiya	***1.01***	9.79	74.43	***1.58***	131.62	***4.57***		0.0087	0.0251	0.2350	0.0180	0.6847	0.0285
13	Ishurdi	***4.71***	16.69	38.59	8.31	44.17	***0.80***		0.0045	0.0439	0.3337	0.0071	0.5902	0.0205
14	Jessore	***1.32***	7.03	42.91	***0.95***	64.20	***2.80***		0.0416	0.1473	0.3407	0.0734	0.3899	0.0071
15	Khepupara	***2.23***	9.10	42.57	***5.81***	63.43	***0.65***		0.0111	0.0590	0.3599	0.0080	0.5385	0.0235
16	Khulna	***3.87***	17.72	24.17	***0.45***	21.36	***0.81***		0.0180	0.0735	0.3438	0.0470	0.5124	0.0053
17	Kutubdia	***1.16***	6.69	54.04	***5.12***	94.09	***2.62***		0.0567	0.2592	0.3534	0.0066	0.3124	0.0118
18	Madaripur	***1.63***	9.45	16.14	***4.43***	39.91	***0.97***		0.0071	0.0409	0.3300	0.0313	0.5747	0.0160
19	M.Court	***1.61***	16.69	80.55	***1.05***	242.86	***0.75***		0.0047	0.0486	0.2345	0.0031	0.7070	0.0022
20	Mongla	***5.58***	11.50	46.78	***4.27***	87.45	***5.79***		0.0225	0.1302	0.2225	0.0611	0.5502	0.0134
21	Mymensingh	***2.11***	9.10	54.12	7.09	97.87	***3.01***		0.0346	0.0713	0.2899	0.0265	0.5419	0.0359
22	Patuakhali	***4.44***	7.38	24.13	8.71	34.80	***2.33***		0.0122	0.0525	0.3123	0.0409	0.5647	0.0174
23	Rajshahi	21.70	46.00	54.60	***2.38***	20.30	***5.10***		0.0543	0.0902	0.2950	0.1065	0.4255	0.0285
24	Rangamati	22.20	37.03	42.88	***5.51***	58.14	***5.44***		0.1446	0.3065	0.3638	0.0158	0.1353	0.0340
25	Rangpur	***1.68***	12.90	55.88	***3.76***	184.59	***0.44***		0.1297	0.2163	0.2505	0.0322	0.3396	0.0318
26	Sandwip	***1.65***	11.86	52.38	20.45	75.00	9.57		0.0065	0.0497	0.2155	0.0145	0.7120	0.0017
27	Satkhira	11.18	19.79	12.60	9.39	10.93	***4.46***		0.0097	0.0694	0.3065	0.1196	0.4388	0.0560
28	Shitakunda	***2.78***	8.07	36.07	6.56	65.74	***3.64***		0.1636	0.2895	0.1843	0.1374	0.1599	0.0653
29	Srimongol	9.80	26.00	77.19	13.08	354.24	32.98		0.0226	0.0657	0.2936	0.0534	0.5351	0.0296
30	Sylhet	***3.65***	9.45	66.68	***5.64***	277.65	***4.25***		0.0191	0.0507	0.1504	0.0255	0.6901	0.0642
31	Tangail	***3.65***	9.45	66.68	***5.64***	277.65	***4.25***		0.0099	0.0257	0.1815	0.0154	0.7559	0.0116
32	Teknaf	9.50	16.34	28.80	***1.12***	72.20	***3.39***		0.0099	0.0257	0.1815	0.0154	0.7559	0.0116
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		1.1850	2.8309	8.6060	1.5158	16.8628	0.9994

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B84. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

August

								Scaling					
								Rank	2	4	5	3	6	1
								Comparison	1.24	2.34	7.60	1.87	17.02	**1.00**
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***2.78***	***3.93***	79.00	7.05	476.77	***3.33***		0.0049	0.0069	0.1379	0.0123	0.8323	0.0058
2	Bhola	16.61	28.07	137.29	***3.30***	1011.23	14.76		0.0137	0.0232	0.1133	0.0027	0.8349	0.0122
3	Bogra	6.39	7.72	89.41	7.01	98.72	10.70		0.0291	0.0351	0.4065	0.0319	0.4488	0.0487
4	Chandpur	6.53	9.45	35.49	7.70	162.28	***3.66***		0.0290	0.0420	0.1577	0.0342	0.7209	0.0163
5	Chittagong	12.36	8.07	44.63	25.92	21.44	22.01		0.0920	0.0600	0.3320	0.1928	0.1595	0.1638
6	Comilla	8.57	20.83	81.94	***1.64***	159.05	8.24		0.0306	0.0743	0.2924	0.0059	0.5675	0.0294
7	Cox's Bazar	***5.71***	***3.93***	59.33	19.41	147.53	***5.68***		0.0236	0.0163	0.2456	0.0803	0.6107	0.0235
8	Dhaka	***2.78***	13.59	45.63	12.22	116.56	6.58		0.0141	0.0688	0.2312	0.0619	0.5906	0.0333
9	Dinajpur	9.03	8.76	36.96	11.13	176.36	6.83		0.0141	0.0688	0.2312	0.0619	0.5906	0.0333
10	Faridpur	***5.12***	18.41	31.01	***3.39***	29.13	***3.52***		0.0362	0.0352	0.1484	0.0447	0.7081	0.0274
11	Feni	***3.27***	11.86	39.40	***4.37***	96.96	***1.03***		0.0565	0.2033	0.3423	0.0375	0.3216	0.0388
12	Hatiya	***4.97***	9.10	50.94	***5.74***	94.28	***4.66***		0.0209	0.0756	0.2511	0.0279	0.6180	0.0066
13	Ishurdi	8.36	10.48	37.17	13.23	90.14	***3.47***		0.0293	0.0536	0.3002	0.0338	0.5556	0.0275
14	Jessore	***1.97***	6.69	38.02	***4.96***	68.84	***1.45***		0.0513	0.0644	0.2282	0.0812	0.5536	0.0213
15	Khepupara	***4.16***	***5.66***	41.14	10.41	62.48	***4.74***		0.0161	0.0549	0.3118	0.0407	0.5646	0.0119
16	Khulna	***4.23***	12.55	18.29	***4.92***	14.27	***2.54***		0.0323	0.0440	0.3200	0.0810	0.4859	0.0368
17	Kutubdia	***3.54***	21.17	67.32	***3.31***	98.37	***2.11***		0.0745	0.2209	0.3220	0.0866	0.2512	0.0447
18	Madaripur	***3.63***	18.76	34.45	6.74	54.76	6.02		0.0181	0.1081	0.3438	0.0169	0.5023	0.0108
19	M.Court	9.12	21.86	61.65	***2.56***	129.76	***3.07***		0.0400	0.0959	0.2704	0.0112	0.5691	0.0135
20	Mongla	***2.99***	***4.00***	38.05	***3.74***	130.79	***2.50***		0.0292	0.1509	0.2770	0.0542	0.4403	0.0484
21	Mymensingh	***4.48***	7.38	39.85	***3.50***	108.23	***3.33***		0.0164	0.0220	0.2090	0.0205	0.7184	0.0137
22	Patuakhali	***4.80***	8.76	19.84	***2.21***	36.90	***1.22***		0.0269	0.0442	0.2390	0.0210	0.6490	0.0200
23	Rajshahi	11.60	9.10	33.39	10.19	59.60	***5.57***		0.0651	0.1188	0.2691	0.0299	0.5006	0.0165
24	Rangamati	31.62	57.38	61.63	11.88	97.08	19.96		0.0896	0.0703	0.2580	0.0787	0.4604	0.0430
25	Rangpur	7.78	8.76	53.64	***4.29***	211.57	6.73		0.1131	0.2053	0.2205	0.0425	0.3473	0.0714
26	Sandwip	***0.83***	17.38	41.03	82.57	38.01	***3.34***		0.0266	0.0299	0.1832	0.0147	0.7226	0.0230
27	Satkhira	14.14	11.52	11.01	9.12	14.64	***5.87***		0.0045	0.0949	0.2240	0.4508	0.2075	0.0182
28	Shitakunda	***3.50***	8.76	37.91	9.54	70.67	***4.71***		0.2133	0.1737	0.1660	0.1376	0.2208	0.0886
29	Srimongol	***3.70***	6.69	39.23	10.20	294.55	***2.61***		0.0259	0.0648	0.2806	0.0706	0.5231	0.0349
30	Sylhet	6.55	14.97	87.59	7.05	307.37	8.50		0.0104	0.0187	0.1099	0.0286	0.8251	0.0073
31	Tangail	6.55	14.97	87.59	7.05	307.37	8.50		0.0152	0.0346	0.2027	0.0163	0.7115	0.0197
32	Teknaf	8.86	28.41	37.01	***5.34***	73.82	***4.09***		0.0152	0.0346	0.2027	0.0163	0.7115	0.0197
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		1.2775	2.4141	7.8278	1.9272	17.5236	1.0299

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B85. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

September

								Scaling						
								Rank	2	4	5	3	6	1
								Comparison	1.31	2.66	7.63	1.63	22.57	**1.00**
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***3.02***	9.10	76.85	***5.92***	627.30	11.20		0.0041	0.0124	0.1048	0.0081	0.8553	0.0153
2	Bhola	***2.29***	11.86	48.91	6.33	425.49	***0.45***		0.0046	0.0239	0.0987	0.0128	0.8590	0.0009
3	Bogra	***1.43***	7.72	79.20	6.92	76.76	8.85		0.0079	0.0427	0.4378	0.0383	0.4243	0.0489
4	Chandpur	9.84	***4.28***	28.62	8.25	274.95	***5.22***		0.0297	0.0129	0.0864	0.0249	0.8303	0.0158
5	Chittagong	7.81	13.24	45.69	12.03	32.77	17.69		0.0604	0.1025	0.3535	0.0931	0.2536	0.1369
6	Comilla	8.20	16.34	52.94	15.64	81.15	***5.64***		0.0456	0.0909	0.2942	0.0869	0.4511	0.0313
7	Cox's Bazar	***1.44***	***4.97***	48.11	7.51	156.51	***3.08***		0.0065	0.0224	0.2171	0.0339	0.7062	0.0139
8	Dhaka	***3.31***	11.52	41.81	6.28	179.53	***3.38***		0.0135	0.0469	0.1701	0.0255	0.7303	0.0138
9	Dinajpur	***4.29***	23.93	47.68	***1.97***	195.97	***1.99***		0.0135	0.0469	0.1701	0.0255	0.7303	0.0138
10	Faridpur	8.12	8.76	28.93	7.44	78.70	***3.69***		0.0156	0.0868	0.1728	0.0071	0.7105	0.0072
11	Feni	***1.62***	9.45	33.33	9.04	116.01	***1.72***		0.0599	0.0646	0.2133	0.0548	0.5802	0.0272
12	Hatiya	***2.05***	***5.31***	44.98	***5.41***	137.21	***4.18***		0.0095	0.0552	0.1947	0.0528	0.6777	0.0100
13	Ishurdi	7.75	19.45	40.48	***1.23***	75.31	***2.71***		0.0103	0.0267	0.2259	0.0272	0.6890	0.0210
14	Jessore	***4.09***	6.69	35.96	8.71	81.34	***4.03***		0.0528	0.1324	0.2755	0.0083	0.5126	0.0184
15	Khepupara	***4.46***	10.14	26.68	***4.54***	54.39	***3.56***		0.0291	0.0475	0.2553	0.0618	0.5776	0.0286
16	Khulna	***5.63***	10.83	22.21	***4.51***	44.48	***2.95***		0.0430	0.0977	0.2571	0.0437	0.5242	0.0343
17	Kutubdia	***5.02***	17.38	61.79	***5.99***	132.66	6.84		0.0622	0.1195	0.2451	0.0498	0.4909	0.0326
18	Madaripur	***4.76***	12.90	28.06	***3.27***	104.47	***2.84***		0.0219	0.0757	0.2690	0.0261	0.5776	0.0298
19	M.Court	***4.74***	8.41	28.16	***4.37***	103.16	***4.30***		0.0309	0.0549	0.1839	0.0285	0.6736	0.0281
20	Mongla	***2.84***	***2.50***	32.90	6.91	137.75	***1.51***		0.0305	0.0825	0.1795	0.0209	0.6684	0.0182
21	Mymensingh	***5.00***	19.45	59.82	6.68	142.05	***2.29***		0.0154	0.0136	0.1784	0.0375	0.7470	0.0082
22	Patuakhali	7.29	16.34	21.72	9.96	38.69	***4.17***		0.0213	0.0827	0.2542	0.0284	0.6037	0.0098
23	Rajshahi	6.15	8.76	24.48	7.73	55.25	***3.47***		0.0743	0.1665	0.2212	0.1015	0.3941	0.0425
24	Rangamati	14.67	22.55	24.86	10.56	67.61	6.70		0.0581	0.0828	0.2313	0.0730	0.5220	0.0327
25	Rangpur	33.64	9.79	100.79	21.70	532.66	20.36		0.0998	0.1535	0.1692	0.0719	0.4601	0.0456
26	Sandwip	***1.44***	15.31	50.43	***2.93***	142.48	***2.73***		0.0468	0.0136	0.1402	0.0302	0.7409	0.0283
27	Satkhira	12.01	19.10	9.75	7.23	13.40	***4.49***		0.0067	0.0711	0.2342	0.0136	0.6617	0.0127
28	Shitakunda	8.52	20.14	46.27	13.18	96.87	8.45		0.1821	0.2895	0.1477	0.1096	0.2031	0.0680
29	Srimongol	7.85	***1.86***	20.12	29.23	204.55	6.17		0.0440	0.1041	0.2392	0.0681	0.5008	0.0437
30	Sylhet	***1.84***	14.28	56.75	6.87	250.27	***1.52***		0.0291	0.0069	0.0746	0.1083	0.7582	0.0229
31	Tangail	***1.84***	14.28	56.75	6.87	250.27	***1.52***		0.0055	0.0431	0.1712	0.0207	0.7549	0.0046
32	Teknaf	***3.71***	6.69	26.87	6.60	161.70	***3.51***		0.0055	0.0431	0.1712	0.0207	0.7549	0.0046
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		1.1399	2.3151	6.6377	1.4137	19.6242	0.8694

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B86. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

October

								Scaling					
								Rank	3	4	5	2	6	1
								Comparison	1.80	3.08	5.74	1.37	21.09	**1.00**
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	8.21	6.00	21.28	40.34	302.82	***3.93***		0.0215	0.0157	0.0556	0.1054	0.7915	0.0103
2	Bhola	***5.81***	14.62	51.39	22.81	685.07	7.53		0.0074	0.0186	0.0653	0.0290	0.8702	0.0096
3	Bogra	***2.48***	8.76	104.33	***4.17***	81.37	***5.04***		0.0120	0.0425	0.5061	0.0202	0.3947	0.0245
4	Chandpur	21.14	7.38	23.31	33.36	176.93	12.48		0.0770	0.0269	0.0849	0.1215	0.6443	0.0454
5	Chittagong	13.48	10.48	37.02	15.95	65.61	10.53		0.0881	0.0685	0.2419	0.1042	0.4286	0.0688
6	Comilla	9.27	20.48	22.53	***1.74***	66.22	***1.40***		0.0762	0.1684	0.1852	0.0143	0.5444	0.0115
7	Cox's Bazar	***2.74***	8.07	30.70	6.79	113.48	***1.40***		0.0168	0.0494	0.1881	0.0416	0.6954	0.0086
8	Dhaka	7.13	16.34	36.14	***3.30***	299.65	***2.26***		0.0195	0.0448	0.0991	0.0090	0.8214	0.0062
9	Dinajpur	19.06	18.41	25.80	***3.03***	91.33	***5.09***		0.0195	0.0448	0.0991	0.0090	0.8214	0.0062
10	Faridpur	6.22	16.00	22.32	***4.66***	87.67	***2.25***		0.1171	0.1132	0.1585	0.0186	0.5613	0.0313
11	Feni	***1.81***	12.21	43.78	***4.13***	293.56	***2.46***		0.0447	0.1150	0.1604	0.0335	0.6301	0.0162
12	Hatiya	***3.85***	18.07	24.53	***1.77***	40.82	***1.52***		0.0051	0.0341	0.1223	0.0115	0.8201	0.0069
13	Ishurdi	***3.59***	6.69	42.13	***5.50***	282.10	7.00		0.0425	0.1995	0.2709	0.0195	0.4507	0.0168
14	Jessore	8.21	11.86	29.69	17.53	143.38	***4.30***		0.0103	0.0193	0.1214	0.0159	0.8130	0.0202
15	Khepupara	10.71	26.00	32.99	***5.19***	121.46	***3.97***		0.0382	0.0552	0.1381	0.0815	0.6670	0.0200
16	Khulna	16.08	33.24	40.34	6.31	95.48	8.33		0.0535	0.1298	0.1647	0.0259	0.6063	0.0198
17	Kutubdia	***2.67***	8.07	27.70	7.77	100.88	***2.62***		0.0805	0.1664	0.2019	0.0316	0.4779	0.0417
18	Madaripur	8.91	19.79	26.47	8.23	73.52	***5.37***		0.0178	0.0539	0.1850	0.0519	0.6739	0.0175
19	M.Court	34.45	10.14	83.79	23.53	648.53	32.56		0.0414	0.0122	0.1006	0.0282	0.7785	0.0391
20	Mongla	***2.44***	12.00	39.93	13.24	107.45	15.01		0.0626	0.1391	0.1860	0.0578	0.5167	0.0377
21	Mymensingh	16.00	20.48	45.80	***1.24***	153.92	***3.45***		0.0129	0.0631	0.2101	0.0696	0.5653	0.0790
22	Patuakhali	***4.17***	8.41	16.58	9.53	58.11	***5.34***		0.0664	0.0850	0.1901	0.0052	0.6389	0.0143
23	Rajshahi	6.53	9.10	16.10	6.59	79.41	***4.01***		0.0408	0.0824	0.1623	0.0933	0.5689	0.0522
24	Rangamati	21.37	33.24	31.31	6.04	103.20	11.25		0.0537	0.0748	0.1323	0.0541	0.6522	0.0329
25	Rangpur	***1.00***	8.41	26.87	***3.23***	113.10	***3.20***		0.1035	0.1611	0.1517	0.0293	0.5000	0.0545
26	Sandwip	7.03	24.97	38.52	***2.65***	128.44	***1.01***		0.0064	0.0540	0.1725	0.0207	0.7259	0.0205
27	Satkhira	15.73	17.03	10.06	***3.34***	15.25	7.18		0.0347	0.1232	0.1901	0.0131	0.6339	0.0050
28	Shitakunda	26.34	38.76	22.91	***2.05***	27.52	***3.81***		0.2293	0.2484	0.1466	0.0487	0.2223	0.1047
29	Srimongol	10.67	7.38	24.90	17.48	137.81	12.84		0.2170	0.3193	0.1887	0.0169	0.2267	0.0314
30	Sylhet	***4.85***	26.69	80.27	***3.90***	290.88	***5.27***		0.0506	0.0350	0.1179	0.0828	0.6529	0.0608
31	Tangail	***4.85***	26.69	80.27	***3.90***	290.88	***5.27***		0.0118	0.0648	0.1949	0.0095	0.7062	0.0128
32	Teknaf	6.01	12.21	27.15	***3.86***	142.21	***3.15***		0.0118	0.0648	0.1949	0.0095	0.7062	0.0128
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		1.6905	2.8930	5.3873	1.2830	19.8072	0.9391

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B87. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

November

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	2.58	4.69	6.31	1.96	26.46	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	8.04	12.21	8.50	22.81	133.00	***4.62***	0.0425	0.0645	0.0450	0.1206	0.7030	0.0244
2	Bhola	10.44	28.07	24.75	20.92	418.82	7.79	0.0204	0.0550	0.0484	0.0410	0.8199	0.0153
3	Bogra	***0.73***	11.86	157.89	***3.24***	160.92	***3.61***	0.0022	0.0351	0.4668	0.0096	0.4757	0.0107
4	Chandpur	8.89	17.38	15.60	11.16	95.15	***2.17***	0.0591	0.1156	0.1038	0.0742	0.6328	0.0144
5	Chittagong	***1.62***	***4.28***	13.79	***2.41***	32.28	***2.21***	0.0287	0.0756	0.2436	0.0426	0.5705	0.0390
6	Comilla	26.71	29.10	36.72	***1.89***	121.47	***4.77***	0.1211	0.1319	0.1664	0.0086	0.5505	0.0216
7	Cox's Bazar	***5.81***	***1.52***	27.83	19.80	126.92	***4.56***	0.0312	0.0081	0.1493	0.1062	0.6808	0.0244
8	Dhaka	***4.96***	19.45	26.35	***2.77***	214.68	***2.00***	0.0183	0.0720	0.0975	0.0103	0.7945	0.0074
9	Dinajpur	***3.20***	14.28	28.17	13.37	155.71	***2.27***	0.0183	0.0720	0.0975	0.0103	0.7945	0.0074
10	Faridpur	***1.76***	***5.66***	12.45	***3.21***	71.29	***1.77***	0.0148	0.0658	0.1298	0.0616	0.7176	0.0105
11	Feni	***2.63***	6.69	19.61	***5.00***	146.48	***1.73***	0.0183	0.0588	0.1295	0.0334	0.7415	0.0184
12	Hatiya	***3.22***	16.34	13.79	***0.71***	22.36	***0.56***	0.0144	0.0367	0.1077	0.0274	0.8042	0.0095
13	Ishurdi	14.97	***3.59***	43.85	13.05	345.81	13.86	0.0564	0.2869	0.2420	0.0125	0.3924	0.0098
14	Jessore	***3.49***	7.72	10.22	9.04	48.51	***2.55***	0.0344	0.0082	0.1008	0.0300	0.7947	0.0318
15	Khepupara	***2.67***	13.93	12.58	***1.33***	43.99	***0.32***	0.0428	0.0948	0.1253	0.1108	0.5950	0.0313
16	Khulna	***2.28***	11.52	9.72	8.47	46.55	***1.22***	0.0357	0.1862	0.1682	0.0177	0.5879	0.0043
17	Kutubdia	***0.45***	9.45	28.00	***4.81***	77.87	***4.03***	0.0286	0.1444	0.1219	0.1062	0.5837	0.0153
18	Madaripur	11.36	10.48	11.16	6.80	117.26	***4.82***	0.0036	0.0758	0.2247	0.0386	0.6249	0.0324
19	M.Court	10.49	14.62	23.20	***2.09***	101.18	7.13	0.0661	0.0921	0.1462	0.0132	0.6375	0.0449
20	Mongla	***5.35***	8.50	21.33	12.20	60.34	6.73	0.0702	0.0648	0.0689	0.0420	0.7244	0.0298
21	Mymensingh	***4.70***	21.86	50.67	6.19	330.43	***3.28***	0.0467	0.0743	0.1864	0.1066	0.5272	0.0588
22	Patuakhali	7.63	19.10	8.74	***0.85***	16.52	***1.55***	0.0113	0.0524	0.1215	0.0148	0.7922	0.0079
23	Rajshahi	***4.65***	15.66	28.30	11.30	74.94	***0.58***	0.1403	0.3512	0.1606	0.0156	0.3037	0.0285
24	Rangamati	78.39	31.17	13.88	***4.32***	23.95	***4.92***	0.0343	0.1156	0.2090	0.0835	0.5534	0.0043
25	Rangpur	***5.37***	22.90	36.04	***5.22***	112.46	***1.37***	0.5005	0.1990	0.0886	0.0276	0.1529	0.0314
26	Sandwip	***3.44***	16.34	32.88	8.59	107.05	***5.30***	0.0293	0.1249	0.1966	0.0285	0.6133	0.0075
27	Satkhira	15.47	22.90	11.42	7.61	15.47	7.24	0.0198	0.0941	0.1894	0.0495	0.6166	0.0305
28	Shitakunda	13.78	30.14	9.96	***2.64***	21.79	***3.96***	0.1931	0.2858	0.1426	0.0950	0.1932	0.0903
29	Srimongol	***4.65***	17.03	18.45	18.77	198.43	***1.93***	0.1676	0.3663	0.1210	0.0321	0.2649	0.0481
30	Sylhet	14.10	7.72	109.09	6.95	815.90	13.15	0.0179	0.0657	0.0712	0.0724	0.7654	0.0074
31	Tangail	14.10	7.72	109.09	6.95	815.90	13.15	0.0146	0.0080	0.1128	0.0072	0.8438	0.0136
32	Teknaf	7.58	21.17	28.94	***1.72***	110.62	***2.67***	0.0146	0.0080	0.1128	0.0072	0.8438	0.0136
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.9171	3.4895	4.6958	1.4566	19.6965	0.7444

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B88. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

December

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	2.36	2.75	4.21	1.53	18.43	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***5.87***	11.52	6.26	26.24	103.06	***4.55***	0.0373	0.0731	0.0397	0.1666	0.6544	0.0289
2	Bhola	8.75	26.69	28.45	13.47	509.47	6.55	0.0148	0.0450	0.0479	0.0227	0.8586	0.0110
3	Bogra	17.24	21.17	169.51	29.01	137.92	90.51	0.0371	0.0455	0.3643	0.0623	0.2964	0.1945
4	Chandpur	7.43	10.83	18.03	27.89	142.27	***3.38***	0.0354	0.0516	0.0859	0.1329	0.6780	0.0161
5	Chittagong	15.10	11.52	27.24	***4.82***	49.04	13.38	0.1247	0.0951	0.2249	0.0398	0.4049	0.1105
6	Comilla	15.73	28.07	24.46	***5.40***	56.62	***1.64***	0.1192	0.2128	0.1854	0.0409	0.4292	0.0124
7	Cox's Bazar	***4.20***	***5.31***	30.05	11.90	86.94	7.59	0.0288	0.0364	0.2058	0.0815	0.5955	0.0520
8	Dhaka	20.43	38.07	67.80	20.47	182.94	10.14	0.0601	0.1120	0.1995	0.0602	0.5383	0.0298
9	Dinajpur	7.41	16.69	33.07	***4.14***	220.70	***4.55***	0.0601	0.1120	0.1995	0.0602	0.5383	0.0298
10	Faridpur	8.91	***1.86***	27.70	***0.98***	212.59	***5.51***	0.0259	0.0582	0.1154	0.0144	0.7702	0.0159
11	Feni	9.31	19.45	12.07	***0.81***	53.48	***2.99***	0.0346	0.0072	0.1075	0.0038	0.8254	0.0214
12	Hatiya	***2.10***	6.00	13.86	***1.34***	48.58	***1.30***	0.0949	0.1982	0.1230	0.0082	0.5451	0.0305
13	Ishurdi	***1.39***	10.48	44.02	6.96	318.82	***1.34***	0.0288	0.0820	0.1894	0.0184	0.6638	0.0177
14	Jessore	***3.00***	11.52	17.28	10.87	71.41	***4.15***	0.0036	0.0274	0.1149	0.0182	0.8324	0.0035
15	Khepupara	9.57	16.69	38.73	***4.37***	156.63	15.35	0.0254	0.0974	0.1462	0.0920	0.6040	0.0351
16	Khulna	***4.10***	14.28	10.08	9.13	44.53	***1.64***	0.0397	0.0692	0.1605	0.0181	0.6490	0.0636
17	Kutubdia	***2.52***	14.97	42.04	6.19	146.35	***3.69***	0.0490	0.1705	0.1203	0.1090	0.5316	0.0196
18	Madaripur	11.25	***1.17***	14.57	29.33	156.60	9.72	0.0117	0.0694	0.1949	0.0287	0.6783	0.0171
19	M.Court	9.85	14.97	36.25	***4.88***	278.30	9.13	0.0279	0.0424	0.1026	0.0138	0.7876	0.0258
20	Mongla	***1.69***	6.50	16.76	16.15	78.49	***0.79***	0.0505	0.0053	0.0655	0.1317	0.7033	0.0437
21	Mymensingh	14.57	9.45	37.25	9.17	277.17	10.83	0.0140	0.0540	0.1392	0.1341	0.6520	0.0066
22	Patuakhali	9.94	26.00	10.68	***1.19***	35.08	***3.74***	0.0406	0.0264	0.1039	0.0256	0.7733	0.0302
23	Rajshahi	***1.57***	6.69	40.45	11.73	212.35	***2.40***	0.1148	0.3001	0.1233	0.0137	0.4050	0.0431
24	Rangamati	2031.38	34.28	22.55	***2.20***	40.51	7.85	0.0057	0.0243	0.1470	0.0426	0.7716	0.0087
25	Rangpur	***4.70***	8.41	52.57	14.62	342.78	***5.38***	0.9498	0.0160	0.0105	0.0010	0.0189	0.0037
26	Sandwip	9.96	25.31	23.49	***3.85***	58.99	***3.43***	0.0110	0.0196	0.1227	0.0341	0.8000	0.0126
27	Satkhira	13.50	19.10	9.01	***5.63***	13.80	6.43	0.0796	0.2024	0.1879	0.0308	0.4718	0.0274
28	Shitakunda	10.20	19.79	9.87	***1.49***	39.05	***1.26***	0.2000	0.2831	0.1335	0.0835	0.2046	0.0952
29	Srimongol	8.11	13.59	6.27	19.87	161.95	***5.30***	0.1250	0.2424	0.1208	0.0182	0.4782	0.0154
30	Sylhet	***1.22***	12.55	62.77	***2.74***	286.12	***1.82***	0.0377	0.0632	0.0292	0.0924	0.7529	0.0246
31	Tangail	***1.22***	12.55	62.77	***2.74***	286.12	***1.82***	0.0033	0.0342	0.1709	0.0075	0.7791	0.0050
32	Teknaf	***3.95***	16.00	36.05	***2.07***	156.41	6.54	0.0033	0.0342	0.1709	0.0075	0.7791	0.0050
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	2.4942	2.9105	4.4530	1.6147	19.4710	1.0566

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B89. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

Yearly Average

								Scaling					
								Rank	3	4	5	2	6	1
								Comparison	1.15	1.73	6.49	1.03	24.31	**1.00**
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***3.34***	9.79	152.35	***3.94***	1885.14	***0.84***		0.0016	0.0048	0.0741	0.0019	0.9172	0.0004
2	Bhola	10.73	19.79	106.99	***5.02***	911.43	***3.64***		0.0101	0.0187	0.1012	0.0047	0.8618	0.0034
3	Bogra	***4.01***	16.00	299.30	***4.78***	584.83	26.11		0.0043	0.0171	0.3201	0.0051	0.6255	0.0279
4	Chandpur	***3.04***	***3.24***	36.80	***1.82***	315.04	***3.84***		0.0084	0.0089	0.1011	0.0050	0.8660	0.0105
5	Chittagong	14.47	14.97	53.60	38.58	53.75	26.24		0.0718	0.0742	0.2659	0.1914	0.2666	0.1301
6	Comilla	7.73	30.14	100.17	***0.23***	329.77	***2.65***		0.0164	0.0640	0.2128	0.0005	0.7006	0.0056
7	Cox's Bazar	6.40	8.76	65.52	12.56	210.29	7.08		0.0206	0.0282	0.2109	0.0404	0.6770	0.0228
8	Dhaka	8.06	***4.62***	75.80	13.18	525.21	10.67		0.0126	0.0072	0.1189	0.0207	0.8238	0.0167
9	Dinajpur	20.51	24.97	36.08	***5.72***	74.99	***3.09***		0.0126	0.0072	0.1189	0.0207	0.8238	0.0167
10	Faridpur	***0.60***	7.72	35.92	***4.67***	104.76	***1.78***		0.1240	0.1510	0.2182	0.0346	0.4535	0.0187
11	Feni	***2.42***	6.69	41.84	***4.92***	187.98	***5.21***		0.0038	0.0497	0.2311	0.0301	0.6739	0.0115
12	Hatiya	***1.02***	11.52	57.74	***3.18***	135.21	***1.16***		0.0097	0.0269	0.1680	0.0197	0.7548	0.0209
13	Ishurdi	11.54	16.00	71.80	***4.92***	247.49	***5.16***		0.0049	0.0549	0.2752	0.0152	0.6444	0.0055
14	Jessore	***1.88***	***4.62***	36.27	***4.51***	90.11	***4.34***		0.0323	0.0448	0.2012	0.0138	0.6934	0.0145
15	Khepupara	***2.31***	6.69	54.23	***3.57***	177.03	***4.51***		0.0132	0.0326	0.2559	0.0318	0.6358	0.0306
16	Khulna	12.34	13.59	26.41	***3.68***	44.93	8.09		0.0093	0.0269	0.2184	0.0144	0.7129	0.0182
17	Kutubdia	***3.02***	16.00	79.34	***5.52***	234.87	***4.73***		0.1132	0.1246	0.2422	0.0338	0.4120	0.0742
18	Madaripur	11.27	9.45	25.21	9.46	165.47	***4.95***		0.0088	0.0466	0.2310	0.0161	0.6838	0.0138
19	M.Court	8.34	14.62	126.81	***4.39***	794.02	10.87		0.0087	0.0152	0.1322	0.0046	0.8279	0.0113
20	Mongla	11.20	***4.50***	54.83	15.70	235.62	28.69		0.0499	0.0418	0.1116	0.0419	0.7328	0.0219
21	Mymensingh	***3.34***	6.34	67.50	***3.14***	337.89	***3.73***		0.0319	0.0128	0.1564	0.0448	0.6722	0.0818
22	Patuakhali	11.97	8.41	28.00	6.43	101.51	***5.74***		0.0079	0.0150	0.1600	0.0074	0.8008	0.0088
23	Rajshahi	***5.13***	12.21	26.78	***2.33***	45.70	***4.21***		0.0738	0.0519	0.1728	0.0396	0.6264	0.0354
24	Rangamati	14.72	32.55	50.25	7.67	202.88	6.28		0.0532	0.1267	0.2779	0.0242	0.4743	0.0437
25	Rangpur	***3.43***	***4.62***	77.74	***5.41***	466.28	***0.75***		0.0468	0.1036	0.1598	0.0244	0.6454	0.0200
26	Sandwip	***4.11***	***5.66***	50.59	11.29	147.65	16.84		0.0061	0.0083	0.1393	0.0097	0.8353	0.0013
27	Satkhira	14.35	24.28	19.10	6.47	14.62	6.94		0.0174	0.0239	0.2142	0.0478	0.6253	0.0713
28	Shitakunda	7.26	8.76	27.26	12.85	106.01	***4.26***		0.1674	0.2831	0.2227	0.0754	0.1705	0.0809
29	Srimongol	16.17	18.07	90.44	9.22	692.36	27.29		0.0436	0.0526	0.1638	0.0772	0.6371	0.0256
30	Sylhet	13.75	***4.28***	106.96	6.07	782.20	9.13		0.0189	0.0212	0.1060	0.0108	0.8112	0.0320
31	Tangail	13.75	***4.28***	106.96	6.07	782.20	9.13		0.0149	0.0046	0.1160	0.0066	0.8480	0.0099
32	Teknaf	***2.37***	19.10	58.58	***1.63***	235.46	***1.85***		0.0149	0.0046	0.1160	0.0066	0.8480	0.0099
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		1.0335	1.5540	5.8137	0.9208	21.7819	0.8960

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B90. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

Yearly Maximum Monthly

Appendix B

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	2.10	3.00	11.13	1.39	18.59	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***2.81***	***3.24***	75.86	10.79	298.80	***4.19***	0.0071	0.0082	0.1917	0.0273	0.7551	0.0106
2	Bhola	39.25	36.34	62.19	***3.07***	62.31	6.07	0.1876	0.1737	0.2972	0.0147	0.2978	0.0290
3	Bogra	7.86	13.59	412.34	6.10	859.22	***5.00***	0.0060	0.0104	0.3162	0.0047	0.6589	0.0038
4	Chandpur	***4.69***	***5.31***	42.85	8.58	208.14	***1.40***	0.0173	0.0196	0.1581	0.0317	0.7681	0.0052
5	Chittagong	22.04	8.76	56.56	57.76	33.62	20.30	0.1107	0.0440	0.2842	0.2902	0.1689	0.1020
6	Comilla	***1.18***	8.76	42.86	***4.87***	55.28	***1.52***	0.0103	0.0765	0.3745	0.0425	0.4829	0.0132
7	Cox's Bazar	11.78	***2.55***	74.33	11.88	163.64	15.21	0.0422	0.0091	0.2660	0.0425	0.5857	0.0544
8	Dhaka	***1.33***	9.10	44.43	***2.19***	86.66	***2.62***	0.0091	0.0622	0.3036	0.0150	0.5922	0.0179
9	Dinajpur	78.66	36.34	41.08	***3.45***	31.81	***5.75***	0.0091	0.0622	0.3036	0.0150	0.5922	0.0179
10	Faridpur	***5.41***	6.69	31.32	***1.54***	50.86	***2.67***	0.3991	0.1844	0.2084	0.0175	0.1614	0.0292
11	Feni	***1.09***	7.38	51.94	***5.06***	114.46	***0.95***	0.0550	0.0679	0.3180	0.0156	0.5164	0.0272
12	Hatiya	***4.83***	19.79	60.75	***1.35***	36.85	***1.04***	0.0060	0.0408	0.2872	0.0280	0.6328	0.0052
13	Ishurdi	12.30	11.86	49.38	***5.74***	60.32	9.24	0.0387	0.1588	0.4875	0.0109	0.2957	0.0084
14	Jessore	***4.97***	8.76	53.14	9.48	47.18	***1.01***	0.0827	0.0797	0.3318	0.0386	0.4053	0.0620
15	Khepupara	***3.92***	10.83	44.84	***2.08***	48.88	***0.72***	0.0399	0.0703	0.4267	0.0761	0.3788	0.0081
16	Khulna	13.18	12.21	32.49	***1.39***	25.80	8.63	0.0352	0.0973	0.4030	0.0187	0.4393	0.0065
17	Kutubdia	***1.75***	***4.62***	67.21	7.05	132.59	***2.82***	0.1407	0.1303	0.3468	0.0148	0.2753	0.0921
18	Madaripur	***2.89***	11.52	22.21	6.55	39.72	***1.56***	0.0081	0.0214	0.3111	0.0326	0.6137	0.0131
19	M.Court	***1.23***	12.21	85.71	6.94	223.16	***0.69***	0.0037	0.0370	0.2598	0.0210	0.6764	0.0021
20	Mongla	6.10	12.50	77.24	9.03	177.55	6.51	0.0342	0.1364	0.2630	0.0775	0.4704	0.0185
21	Mymensingh	***1.31***	7.03	63.51	***2.79***	134.85	***2.25***	0.0211	0.0433	0.2673	0.0313	0.6145	0.0225
22	Patuakhali	***3.90***	8.76	28.51	***2.28***	33.91	***3.48***	0.0062	0.0332	0.2999	0.0132	0.6368	0.0106
23	Rajshahi	14.26	26.69	39.62	***1.04***	14.56	***2.61***	0.0483	0.1083	0.3527	0.0282	0.4194	0.0431
24	Rangamati	10.21	13.93	40.75	***5.78***	66.39	***5.98***	0.1444	0.2702	0.4011	0.0105	0.1474	0.0265
25	Rangpur	7.73	10.14	76.11	6.98	157.62	6.48	0.0714	0.0974	0.2849	0.0404	0.4641	0.0418
26	Sandwip	***2.92***	***4.97***	35.80	***3.55***	52.28	***3.25***	0.0292	0.0382	0.2871	0.0263	0.5947	0.0245
27	Satkhira	6.20	17.03	16.54	8.04	6.39	***3.00***	0.0284	0.0483	0.3484	0.0345	0.5088	0.0316
28	Shitakunda	***4.61***	***3.24***	37.83	***2.60***	79.89	***5.48***	0.1084	0.2978	0.2892	0.1405	0.1117	0.0525
29	Srimongol	8.85	12.21	42.44	***0.56***	142.16	***3.66***	0.0345	0.0243	0.2830	0.0194	0.5978	0.0410
30	Sylhet	6.55	16.69	101.49	***2.62***	350.28	***5.35***	0.0422	0.0582	0.2022	0.0026	0.6774	0.0174
31	Tangail	6.55	16.69	101.49	***2.62***	350.28	***5.35***	0.0136	0.0346	0.2101	0.0054	0.7253	0.0111
32	Teknaf	6.36	16.00	56.29	***2.62***	139.97	***4.01***	0.0136	0.0346	0.2101	0.0054	0.7253	0.0111
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.8038	2.5787	9.5745	1.1926	15.9905	0.8600

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B91. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

Yearly Minimum Monthly

		Scaling					
	Rank	2	4	5	3	6	1
	Comparison	1.70	2.46	3.92	1.89	24.35	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	25.79	26.00	48.93	52.92	924.05	18.35	0.0235	0.0237	0.0446	0.0483	0.8431	0.0167
2	Bhola	28.57	35.66	103.13	75.20	1207.92	40.67	0.0192	0.0239	0.0692	0.0504	0.8101	0.0273
3	Bogra	***1.81***	6.69	88.54	***4.01***	161.36	***5.69***	0.0067	0.0250	0.3303	0.0149	0.6019	0.0212
4	Chandpur	20.90	24.62	9.70	35.77	123.39	15.58	0.0909	0.1071	0.0422	0.1556	0.5366	0.0678
5	Chittagong	***4.10***	13.24	14.33	***3.19***	39.67	***4.48***	0.0519	0.1676	0.1814	0.0404	0.5020	0.0567
6	Comilla	***5.26***	***4.62***	20.51	28.55	411.03	***2.34***	0.0111	0.0098	0.0434	0.0604	0.8703	0.0050
7	Cox's Bazar	***1.21***	7.38	34.02	10.82	150.70	***2.53***	0.0059	0.0357	0.1646	0.0524	0.7292	0.0122
8	Dhaka	11.13	13.59	51.16	20.53	739.13	8.17	0.0132	0.0161	0.0606	0.0243	0.8761	0.0097
9	Dinajpur	18.49	20.48	45.40	9.87	239.18	6.99	0.0132	0.0161	0.0606	0.0243	0.8761	0.0097
10	Faridpur	13.95	***2.55***	20.06	20.27	185.45	8.18	0.0543	0.0602	0.1334	0.0290	0.7026	0.0205
11	Feni	11.74	***1.52***	10.34	25.89	214.50	***5.93***	0.0557	0.0102	0.0801	0.0809	0.7404	0.0327
12	Hatiya	14.63	19.10	22.58	***5.79***	84.09	6.64	0.0435	0.0056	0.0383	0.0959	0.7947	0.0220
13	Ishurdi	***3.23***	***2.21***	33.29	7.68	387.78	6.04	0.0957	0.1250	0.1477	0.0379	0.5502	0.0434
14	Jessore	18.91	8.07	22.68	25.46	164.74	10.63	0.0073	0.0050	0.0756	0.0174	0.8809	0.0137
15	Khepupara	***5.47***	17.72	36.10	***1.28***	115.29	8.54	0.0755	0.0322	0.0906	0.1016	0.6577	0.0424
16	Khulna	***5.54***	15.66	15.54	***2.55***	67.42	***1.31***	0.0297	0.0961	0.1958	0.0069	0.6252	0.0463
17	Kutubdia	***4.61***	21.17	42.87	6.97	135.79	7.72	0.0513	0.1449	0.1439	0.0236	0.6241	0.0122
18	Madaripur	9.89	13.24	9.39	19.18	138.71	***4.79***	0.0210	0.0966	0.1956	0.0318	0.6197	0.0352
19	M.Court	9.45	***4.62***	20.45	31.09	178.51	9.43	0.0373	0.0182	0.0806	0.1226	0.7040	0.0372
20	Mongla	12.82	8.50	40.11	11.29	192.49	13.67	0.0507	0.0678	0.0481	0.0983	0.7106	0.0245
21	Mymensingh	17.12	9.10	32.07	17.83	286.23	11.30	0.0460	0.0305	0.1438	0.0405	0.6902	0.0490
22	Patuakhali	***4.68***	14.28	8.46	***2.56***	42.02	***1.04***	0.0458	0.0244	0.0858	0.0477	0.7660	0.0302
23	Rajshahi	6.01	11.86	20.79	20.89	94.19	***4.47***	0.0641	0.1954	0.1158	0.0351	0.5752	0.0143
24	Rangamati	16.03	44.62	45.83	***2.30***	302.93	7.56	0.0380	0.0750	0.1314	0.1320	0.5953	0.0283
25	Rangpur	10.11	6.69	65.56	19.01	592.31	19.51	0.0382	0.1064	0.1093	0.0055	0.7225	0.0180
26	Sandwip	16.40	***3.59***	27.79	15.89	154.91	13.69	0.0142	0.0094	0.0919	0.0267	0.8305	0.0274
27	Satkhira	20.23	37.72	14.12	8.24	18.96	8.20	0.0706	0.0154	0.1197	0.0684	0.6669	0.0589
28	Shitakunda	31.54	32.90	12.76	7.24	30.15	***3.91***	0.1883	0.3510	0.1314	0.0766	0.1764	0.0763
29	Srimongol	***3.12***	11.17	24.46	19.72	379.66	***3.20***	0.2662	0.2776	0.1076	0.0611	0.2544	0.0330
30	Sylhet	***1.42***	7.72	56.61	12.93	407.08	***1.68***	0.0071	0.0253	0.0554	0.0447	0.8603	0.0072
31	Tangail	***1.42***	7.72	56.61	12.93	407.08	***1.68***	0.0029	0.0158	0.1161	0.0265	0.8351	0.0034
32	Teknaf	14.31	***0.83***	28.68	21.44	311.31	11.30	0.0029	0.0158	0.1161	0.0265	0.8351	0.0034
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.5418	2.2289	3.5512	1.7086	22.0635	0.9060

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B92. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

Average Pre-Monsoon(Mar-May)

		Scaling					
	Rank	3	4	5	2	6	1
	Comparison	1.60	2.24	7.85	1.14	18.53	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	22.54	11.86	132.19	23.36	428.75	14.22	0.0356	0.0187	0.2089	0.0369	0.6774	0.0225
2	Bhola	33.80	23.24	67.72	***2.08***	212.00	***4.44***	0.0985	0.0677	0.1973	0.0061	0.6176	0.0129
3	Bogra	6.00	***3.24***	264.07	***3.95***	568.86	14.53	0.0070	0.0038	0.3068	0.0046	0.6610	0.0169
4	Chandpur	***3.55***	13.59	31.24	***1.89***	135.97	***1.19***	0.0189	0.0725	0.1667	0.0101	0.7255	0.0063
5	Chittagong	***4.84***	***5.31***	35.09	18.63	21.41	8.12	0.0519	0.0569	0.3757	0.1994	0.2292	0.0869
6	Comilla	***5.57***	15.66	45.12	***3.78***	65.84	***1.18***	0.0406	0.1141	0.3290	0.0276	0.4801	0.0086
7	Cox's Bazar	***4.15***	***3.24***	46.92	***3.75***	110.86	11.44	0.0230	0.0180	0.2601	0.0208	0.6147	0.0634
8	Dhaka	6.62	6.69	54.50	7.87	204.36	7.74	0.0230	0.0232	0.1894	0.0273	0.7101	0.0269
9	Dinajpur	100.57	34.28	38.63	***3.62***	41.94	6.99	0.0230	0.0232	0.1894	0.0273	0.7101	0.0269
10	Faridpur	***2.93***	***3.24***	38.19	***4.97***	95.58	***3.44***	0.4449	0.1516	0.1709	0.0160	0.1856	0.0309
11	Feni	***4.80***	6.34	42.61	7.46	129.19	8.96	0.0198	0.0218	0.2574	0.0335	0.6442	0.0232
12	Hatiya	***5.81***	8.76	47.64	7.98	97.20	***2.50***	0.0241	0.0318	0.2137	0.0374	0.6480	0.0450
13	Ishurdi	7.03	12.90	48.89	***3.89***	100.33	***2.60***	0.0342	0.0516	0.2804	0.0470	0.5722	0.0147
14	Jessore	***3.81***	9.10	44.38	***2.71***	49.26	***3.18***	0.0401	0.0734	0.2784	0.0222	0.5712	0.0148
15	Khepupara	***1.65***	9.10	48.07	10.14	88.72	***1.15***	0.0339	0.0810	0.3947	0.0241	0.4381	0.0283
16	Khulna	16.30	16.34	27.17	***1.59***	27.21	8.47	0.0104	0.0573	0.3027	0.0639	0.5586	0.0072
17	Kutubdia	***2.24***	8.76	50.13	***1.28***	132.72	***2.71***	0.1679	0.1683	0.2798	0.0164	0.2803	0.0873
18	Madaripur	9.87	11.52	25.11	***4.85***	103.19	***3.59***	0.0113	0.0443	0.2534	0.0064	0.6709	0.0137
19	M.Court	***4.86***	9.10	54.51	***3.26***	193.00	***2.03***	0.0182	0.0341	0.2043	0.0122	0.7235	0.0076
20	Mongla	19.26	26.50	112.79	20.71	273.74	67.70	0.0624	0.0728	0.1588	0.0306	0.6526	0.0227
21	Mymensingh	***2.34***	14.97	85.20	***0.56***	253.12	***3.40***	0.0370	0.0509	0.2166	0.0398	0.5257	0.1300
22	Patuakhali	***5.87***	16.34	35.96	***1.51***	64.17	***2.04***	0.0065	0.0416	0.2369	0.0016	0.7039	0.0095
23	Rajshahi	***4.02***	16.34	27.19	***3.98***	26.55	***1.08***	0.0466	0.1298	0.2856	0.0120	0.5097	0.0162
24	Rangamati	***2.55***	16.69	41.29	***2.69***	119.71	***0.75***	0.0508	0.2065	0.3434	0.0502	0.3354	0.0136
25	Rangpur	***4.01***	***3.24***	60.30	6.42	258.07	***3.11***	0.0139	0.0909	0.2248	0.0146	0.6517	0.0041
26	Sandwip	***0.79***	6.34	28.48	10.55	38.23	***3.11***	0.0120	0.0097	0.1799	0.0191	0.7700	0.0093
27	Satkhira	8.80	24.97	18.95	6.40	9.39	***4.28***	0.0091	0.0725	0.3255	0.1206	0.4369	0.0355
28	Shitakunda	7.62	6.69	35.81	7.98	82.67	***4.27***	0.1209	0.3430	0.2604	0.0879	0.1290	0.0588
29	Srimongol	6.30	12.90	54.81	11.83	278.07	38.12	0.0525	0.0461	0.2469	0.0550	0.5700	0.0294
30	Sylhet	10.76	***1.17***	108.43	8.59	609.08	7.88	0.0157	0.0321	0.1363	0.0294	0.6917	0.0948
31	Tangail	10.76	***1.17***	108.43	8.59	609.08	7.88	0.0144	0.0016	0.1454	0.0115	0.8166	0.0106
32	Teknaf	***4.44***	29.45	63.22	70.53	122.29	22.94	0.0144	0.0016	0.1454	0.0115	0.8166	0.0106
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.5824	2.2125	7.7651	1.1230	18.3279	0.9892

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B93. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

Average Monsoon(Jun-Oct)

		Scaling					
	Rank	2	4	5	3	6	1
	Comparison	1.05	1.89	7.17	1.22	22.28	**1.00**

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***4.05***	7.72	111.27	***2.18***	954.34	***2.66***	0.0037	0.0071	0.1028	0.0020	0.8818	0.0025
2	Bhola	***5.02***	16.69	137.19	***0.39***	1545.53	***4.26***	0.0029	0.0098	0.0803	0.0002	0.9043	0.0025
3	Bogra	***3.26***	7.03	209.79	***1.59***	531.62	***2.25***	0.0043	0.0093	0.2777	0.0021	0.7036	0.0030
4	Chandpur	***3.87***	***4.28***	41.29	12.12	320.62	***1.93***	0.0101	0.0111	0.1075	0.0316	0.8347	0.0050
5	Chittagong	19.96	10.83	55.66	55.21	45.70	25.75	0.0936	0.0508	0.2612	0.2591	0.2144	0.1208
6	Comilla	15.71	22.90	81.62	***2.38***	206.89	***5.95***	0.0468	0.0683	0.2433	0.0071	0.6167	0.0177
7	Cox's Bazar	9.71	***3.24***	72.28	10.60	244.82	8.60	0.0278	0.0093	0.2070	0.0304	0.7010	0.0246
8	Dhaka	***5.51***	***5.66***	62.94	11.85	294.24	28.89	0.0135	0.0138	0.1539	0.0290	0.7193	0.0706
9	Dinajpur	7.25	13.93	36.05	9.61	125.52	7.14	0.0135	0.0138	0.1539	0.0290	0.7193	0.0706
10	Faridpur	***3.59***	8.07	27.88	***4.84***	53.19	***5.07***	0.0363	0.0698	0.1807	0.0481	0.6292	0.0358
11	Feni	***1.18***	15.66	50.09	***0.74***	144.34	***0.76***	0.0350	0.0786	0.2716	0.0472	0.5182	0.0494
12	Hatiya	***1.38***	9.45	61.29	***0.69***	128.30	***0.86***	0.0055	0.0736	0.2354	0.0035	0.6784	0.0036
13	Ishurdi	***3.81***	16.34	49.64	***4.66***	116.24	***0.92***	0.0069	0.0468	0.3035	0.0034	0.6352	0.0043
14	Jessore	***1.71***	***5.31***	50.51	7.17	134.23	***1.62***	0.0199	0.0853	0.2591	0.0243	0.6066	0.0048
15	Khepupara	***2.42***	7.38	56.40	8.05	127.75	***5.44***	0.0085	0.0265	0.2519	0.0357	0.6693	0.0081
16	Khulna	12.52	14.28	28.21	***3.12***	52.42	6.93	0.0116	0.0356	0.2719	0.0388	0.6158	0.0262
17	Kutubdia	7.35	21.86	93.36	6.61	209.88	9.14	0.1066	0.1215	0.2401	0.0266	0.4462	0.0590
18	Madaripur	***1.47***	11.17	25.12	***5.75***	86.65	***0.45***	0.0211	0.0628	0.2681	0.0190	0.6027	0.0263
19	M.Court	***1.26***	12.90	106.13	***1.72***	529.62	***0.91***	0.0019	0.0198	0.1626	0.0026	0.8116	0.0014
20	Mongla	***0.98***	***4.00***	38.23	***4.13***	137.08	***2.89***	0.0112	0.0855	0.1923	0.0440	0.6634	0.0034
21	Mymensingh	9.64	14.97	80.95	***5.52***	211.06	8.37	0.0052	0.0214	0.2041	0.0221	0.7318	0.0154
22	Patuakhali	8.95	***3.24***	25.17	6.50	80.81	***4.02***	0.0292	0.0453	0.2449	0.0167	0.6386	0.0253
23	Rajshahi	7.44	23.24	37.39	***3.83***	33.96	***1.75***	0.0695	0.0252	0.1956	0.0505	0.6280	0.0312
24	Rangamati	33.99	44.62	64.11	13.30	163.55	19.28	0.0692	0.2160	0.3475	0.0356	0.3156	0.0162
25	Rangpur	***2.89***	***4.62***	60.88	6.27	300.29	***2.80***	0.1003	0.1317	0.1892	0.0392	0.4827	0.0569
26	Sandwip	***0.22***	11.52	52.40	11.90	114.74	23.08	0.0077	0.0122	0.1611	0.0166	0.7949	0.0074
27	Satkhira	12.83	19.79	17.68	12.80	14.72	***5.90***	0.0010	0.0539	0.2450	0.0557	0.5365	0.1079
28	Shitakunda	***3.65***	8.07	30.86	***1.56***	88.55	***2.83***	0.1533	0.2364	0.2112	0.1528	0.1758	0.0705
29	Srimongol	7.58	13.24	63.70	14.58	458.14	16.21	0.0269	0.0595	0.2277	0.0115	0.6534	0.0209
30	Sylhet	***3.83***	8.76	88.45	***4.64***	548.50	***1.65***	0.0132	0.0231	0.1111	0.0254	0.7989	0.0283
31	Tangail	***3.83***	8.76	88.45	***4.64***	548.50	***1.65***	0.0058	0.0134	0.1349	0.0071	0.8364	0.0025
32	Teknaf	***5.22***	12.90	38.84	***2.13***	187.95	***1.59***	0.0058	0.0134	0.1349	0.0071	0.8364	0.0025
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.9681	1.7505	6.6319	1.1239	20.6010	0.9246

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B94. Determination of Best Fit Distribution

Chi-square values of Wind Speed Data for different probability distributions

Average Post-Monsoon(Nov-Feb)

		Scaling					
	Rank	4	3	5	1	6	2
	Comparison	1.40	1.35	3.39	**1.00**	18.02	1.16

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	9.63	***5.21***	33.04	6.59	682.98	***5.45***	0.0130	0.0070	0.0445	0.0089	0.9193	0.0073
2	Bhola	7.17	26.64	85.82	***3.94***	1447.90	***2.95***	0.0046	0.0169	0.0545	0.0025	0.9196	0.0019
3	Bogra	9.45	14.50	173.11	11.62	177.38	607.10	0.0095	0.0146	0.1743	0.0117	0.1786	0.6113
4	Chandpur	10.24	***0.93***	19.74	10.91	293.56	7.53	0.0299	0.0027	0.0576	0.0318	0.8561	0.0220
5	Chittagong	***2.42***	13.79	37.13	***5.69***	73.74	9.06	0.0170	0.0972	0.2618	0.0401	0.5199	0.0639
6	Comilla	***5.44***	22.00	38.76	***1.30***	201.59	***1.76***	0.0201	0.0812	0.1431	0.0048	0.7443	0.0065
7	Cox's Bazar	7.66	***3.79***	43.84	7.45	186.19	6.64	0.0300	0.0148	0.1715	0.0292	0.7285	0.0260
8	Dhaka	6.62	***2.36***	36.75	14.70	495.73	***2.83***	0.0118	0.0042	0.0657	0.0263	0.8869	0.0051
9	Dinajpur	9.99	18.43	20.35	***1.27***	78.78	***1.45***	0.0118	0.0042	0.0657	0.0263	0.8869	0.0051
10	Faridpur	9.76	***2.00***	30.44	18.10	206.57	8.31	0.0767	0.1415	0.1562	0.0098	0.6047	0.0111
11	Feni	11.01	***1.29***	21.67	18.58	200.44	7.49	0.0355	0.0073	0.1106	0.0658	0.7506	0.0302
12	Hatiya	7.01	12.00	18.69	7.25	42.42	***2.01***	0.0423	0.0049	0.0832	0.0713	0.7695	0.0288
13	Ishurdi	7.13	10.93	83.09	6.68	788.53	14.08	0.0784	0.1343	0.2091	0.0812	0.4746	0.0224
14	Jessore	10.37	***3.07***	22.31	11.41	176.43	***5.85***	0.0078	0.0120	0.0913	0.0073	0.8661	0.0155
15	Khepupara	***2.93***	10.21	19.97	***3.90***	93.30	***2.70***	0.0452	0.0134	0.0972	0.0497	0.7689	0.0255
16	Khulna	***3.33***	***5.93***	16.44	10.61	80.20	***2.08***	0.0220	0.0768	0.1501	0.0293	0.7014	0.0203
17	Kutubdia	***1.87***	8.07	44.66	7.22	187.80	***5.67***	0.0281	0.0500	0.1386	0.0895	0.6763	0.0176
18	Madaripur	8.65	***3.07***	17.15	12.95	228.74	***5.20***	0.0073	0.0316	0.1749	0.0283	0.7356	0.0222
19	M.Court	7.40	***5.93***	44.22	83.30	328.13	17.72	0.0152	0.0122	0.0909	0.1712	0.6742	0.0364
20	Mongla	***4.24***	12.84	30.27	16.06	96.39	19.62	0.0314	0.0111	0.0622	0.0470	0.8295	0.0189
21	Mymensingh	***3.49***	7.36	81.71	12.31	852.30	***2.41***	0.0236	0.0716	0.1687	0.0895	0.5372	0.1094
22	Patuakhali	***5.17***	14.86	14.17	***3.91***	46.05	***2.13***	0.0036	0.0077	0.0852	0.0128	0.8882	0.0025
23	Rajshahi	8.81	***2.00***	24.63	12.39	129.28	7.56	0.0599	0.1722	0.1642	0.0453	0.5337	0.0247
24	Rangamati	300.39	38.07	37.87	***1.57***	83.45	9.16	0.0477	0.0108	0.1334	0.0671	0.7001	0.0409
25	Rangpur	***0.92***	12.36	60.26	***3.63***	404.56	***1.80***	0.6384	0.0809	0.0805	0.0033	0.1774	0.0195
26	Sandwip	7.60	22.36	37.78	9.41	87.86	6.03	0.0019	0.0256	0.1246	0.0075	0.8367	0.0037
27	Satkhira	21.38	25.57	18.59	***3.98***	21.64	9.82	0.0445	0.1307	0.2209	0.0550	0.5137	0.0353
28	Shitakunda	16.85	21.29	24.53	***2.06***	120.13	8.02	0.2117	0.2532	0.1841	0.0394	0.2143	0.0972
29	Srimongol	13.36	10.83	43.77	20.22	453.19	12.77	0.0873	0.1104	0.1272	0.0107	0.6228	0.0416
30	Sylhet	6.07	6.64	105.91	***5.22***	480.88	***3.13***	0.0241	0.0195	0.0790	0.0365	0.8178	0.0231
31	Tangail	6.07	6.64	105.91	***5.22***	480.88	***3.13***	0.0100	0.0109	0.1742	0.0086	0.7911	0.0052
32	Teknaf	***2.37***	20.93	48.79	***2.05***	199.65	***1.52***	0.0100	0.0109	0.1742	0.0086	0.7911	0.0052
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.7004	1.6424	4.1194	1.2163	21.9157	1.4059

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B95. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

January

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	1.46	19.20	1.23	19.63	3.89
1	Barisal	***1.86***	9.45	169.70	***5.20***	202.98	15.21
2	Bhola	***2.91***	8.43	103.95	7.80	128.95	***2.49***
3	Bogra	6.58	13.93	107.80	12.78	66.98	30.20
4	Chandpur	***5.65***	17.03	133.49	10.05	115.60	38.54
5	Chittagong	***5.23***	25.15	228.69	8.70	224.40	169.43
6	Comilla	***4.31***	14.50	140.51	12.68	125.72	8.42
7	Cox's Bazar	***4.00***	***3.93***	216.48	***1.66***	332.97	***3.54***
8	Dhaka	11.47	9.45	122.54	16.78	104.61	19.26
9	Dinajpur	12.44	***4.00***	86.10	6.03	94.82	11.20
10	Faridpur	9.43	9.33	122.72	9.96	127.83	14.31
11	Feni	10.58	14.75	143.77	6.72	139.35	322.47
12	Hatiya	***4.69***	19.33	194.72	17.37	203.87	337.96
13	Ishurdi	***2.06***	11.83	135.87	***1.42***	157.38	***2.81***
14	Jessore	***1.07***	6.69	130.32	***1.00***	155.74	***3.96***
15	Khepupara	***1.07***	6.69	130.32	***1.00***	155.74	***3.96***
16	Khulna	9.09	***5.20***	143.93	18.68	187.52	12.40
17	Kutubdia	***3.49***	9.20	209.85	***3.88***	312.75	***4.88***
18	Madaripur	***0.66***	13.05	93.77	***4.25***	87.26	***3.02***
19	M.Court	9.53	6.42	114.16	***3.41***	118.07	16.65
20	Mongla	6.34	***4.50***	66.05	9.92	60.73	***3.97***
21	Mymensingh	6.30	18.76	134.71	***3.55***	114.41	9.86
22	Patuakhali	***1.45***	7.67	149.01	***3.03***	227.68	***2.23***
23	Rajshahi	***5.42***	16.00	207.98	***1.39***	291.53	10.55
24	Rangamati	6.19	21.18	131.01	19.06	87.49	217.98
25	Rangpur	***1.54***	***4.62***	77.59	***1.80***	60.64	***4.35***
26	Sandwip	13.40	***3.91***	124.75	8.49	150.82	14.98
27	Satkhira	6.70	***2.00***	133.13	***3.05***	170.96	10.77
28	Shitakunda	6.60	***3.93***	46.45	***5.71***	23.00	***3.64***
29	Srimongol	6.60	***3.93***	46.45	***5.71***	23.00	***3.64***
30	Sylhet	***1.47***	7.03	121.33	***5.46***	121.58	***4.75***
31	Tangail	***3.59***	6.64	87.23	***2.57***	88.21	10.98
32	Teknaf	6.09	12.55	330.23	***2.33***	489.85	10.92
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99
		0.6895	1.0068	13.2422	0.8462	13.5355	2.6798

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B96. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

February

	Scaling					
Rank	2	3	5	1	6	4
Comparison	1.06	1.34	23.30	**1.00**	26.29	8.83

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***2.60***	7.38	220.24	***3.66***	320.52	8.47	0.0046	0.0131	0.3913	0.0065	0.5694	0.0150
2	Bhola	***1.21***	***4.86***	115.31	***1.85***	128.23	***2.67***	0.0047	0.0191	0.4538	0.0073	0.5046	0.0105
3	Bogra	19.14	19.45	209.93	23.92	198.29	255.50	0.0264	0.0268	0.2891	0.0329	0.2730	0.3518
4	Chandpur	8.06	16.69	211.71	8.39	267.63	15.32	0.0153	0.0316	0.4011	0.0159	0.5071	0.0290
5	Chittagong	13.47	10.92	196.20	6.22	239.65	94.99	0.0240	0.0195	0.3494	0.0111	0.4268	0.1692
6	Comilla	***3.43***	28.43	250.49	6.97	268.18	14.28	0.0060	0.0497	0.4381	0.0122	0.4690	0.0250
7	Cox's Bazar	***1.50***	8.07	151.26	***1.60***	137.05	9.54	0.0049	0.0261	0.4895	0.0052	0.4435	0.0309
8	Dhaka	23.06	7.38	188.60	11.67	235.94	34.62	0.0460	0.0147	0.3762	0.0233	0.4707	0.0691
9	Dinajpur	***5.12***	6.00	105.93	***5.39***	111.99	6.24	0.0460	0.0147	0.3762	0.0233	0.4707	0.0691
10	Faridpur	***4.26***	***3.92***	126.48	***5.16***	146.39	17.29	0.0213	0.0249	0.4402	0.0224	0.4653	0.0259
11	Feni	42.67	36.42	107.43	***4.02***	30.09	2.34E+11	0.0140	0.0129	0.4167	0.0170	0.4823	0.0570
12	Hatiya	16.97	45.58	291.74	14.59	227.16	270.59	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
13	Ishurdi	***4.58***	***5.17***	160.84	***3.61***	204.59	8.13	0.0196	0.0526	0.3366	0.0168	0.2621	0.3122
14	Jessore	***4.13***	19.79	237.09	27.56	298.99	10362.65	0.0118	0.0134	0.4157	0.0093	0.5288	0.0210
15	Khepupara	***4.13***	19.79	237.09	27.56	298.99	10362.65	0.0004	0.0018	0.0217	0.0025	0.0273	0.9463
16	Khulna	***2.60***	7.20	163.25	***4.53***	207.89	7.66	0.0004	0.0018	0.0217	0.0025	0.0273	0.9463
17	Kutubdia	12.27	9.20	256.20	13.57	416.06	37.87	0.0066	0.0183	0.4153	0.0115	0.5288	0.0195
18	Madaripur	***2.05***	***3.05***	103.14	***4.25***	134.36	***4.46***	0.0165	0.0123	0.3438	0.0182	0.5583	0.0508
19	M.Court	***4.81***	8.92	162.23	***3.34***	182.35	***5.04***	0.0131	0.0243	0.4424	0.0091	0.4973	0.0137
20	Mongla	***3.67***	***2.00***	54.09	***1.33***	60.07	***1.90***	0.0082	0.0121	0.4104	0.0169	0.5346	0.0178
21	Mymensingh	***2.88***	7.03	144.27	***2.41***	183.95	***2.64***	0.0298	0.0163	0.4395	0.0108	0.4881	0.0154
22	Patuakhali	15.32	13.08	155.46	7.54	198.05	8.19	0.0084	0.0205	0.4204	0.0070	0.5360	0.0077
23	Rajshahi	9.23	6.69	286.30	10.98	423.16	8.27	0.0385	0.0329	0.3910	0.0190	0.4981	0.0206
24	Rangamati	8.55	***2.55***	105.60	***5.35***	83.82	6.22	0.0124	0.0090	0.3845	0.0147	0.5683	0.0111
25	Rangpur	***4.81***	***4.28***	131.29	9.82	143.38	16.88	0.0403	0.0120	0.4979	0.0252	0.3952	0.0293
26	Sandwip	***0.55***	8.00	130.83	***4.34***	150.29	6.95	0.0155	0.0138	0.4229	0.0316	0.4618	0.0544
27	Satkhira	16.63	8.40	252.04	17.72	436.57	22.52	0.0018	0.0266	0.4347	0.0144	0.4994	0.0231
28	Shitakunda	***4.63***	11.86	82.41	***4.91***	36.61	13.13	0.0221	0.0111	0.3343	0.0235	0.5791	0.0299
29	Srimongol	***4.63***	11.86	82.41	***4.91***	36.61	13.13	0.0302	0.0772	0.5367	0.0320	0.2384	0.0855
30	Sylhet	***4.91***	***1.17***	138.90	7.24	176.15	***4.84***	0.0302	0.0772	0.5367	0.0320	0.2384	0.0855
31	Tangail	***5.97***	***3.45***	119.86	***5.63***	140.22	***3.84***	0.0147	0.0035	0.4169	0.0217	0.5286	0.0145
32	Teknaf	***2.39***	21.17	196.89	***5.00***	164.41	143.08	0.0147	0.0035	0.4169	0.0217	0.5286	0.0145
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.5484	0.6935	12.0615	0.5177	13.6073	4.5717

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B97. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

March

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	10.26	31.17	286.27	6.19	319.65	49.64
2	Bhola	6.72	17.36	132.81	***4.97***	98.56	37.53
3	Bogra	20.10	46.00	326.28	92.89	291.12	1.85E+08
4	Chandpur	***0.39***	15.66	169.15	***2.77***	195.04	***5.62***
5	Chittagong	8.74	***5.92***	164.70	***4.63***	193.76	15.96
6	Comilla	***3.20***	16.64	305.14	***2.18***	499.61	7.09
7	Cox's Bazar	***2.52***	17.38	241.75	***2.51***	271.30	16.96
8	Dhaka	***0.63***	11.86	218.58	***5.56***	303.38	67.46
9	Dinajpur	6.52	***5.50***	219.99	***1.67***	427.07	***2.47***
10	Faridpur	***3.56***	15.17	290.18	***2.72***	532.57	19.18
11	Feni	***5.44***	18.08	225.69	***3.66***	304.75	16.72
12	Hatiya	***4.33***	***3.92***	164.62	8.72	226.32	***3.79***
13	Ishurdi	9.63	31.42	350.95	8.35	502.84	30.40
14	Jessore	***2.68***	12.55	210.43	***1.72***	273.43	***5.21***
15	Khepupara	***2.68***	12.55	210.43	***1.72***	273.43	***5.21***
16	Khulna	***5.96***	9.20	223.97	***4.26***	347.03	147.33
17	Kutubdia	***3.27***	***3.20***	161.45	***3.58***	205.99	***4.11***
18	Madaripur	***2.97***	10.19	235.53	***3.51***	293.87	***0.64***
19	M.Court	***1.60***	***5.58***	166.95	***1.23***	243.03	6.73
20	Mongla	***3.62***	***0.75***	65.60	***4.41***	117.04	***3.61***
21	Mymensingh	***3.79***	13.24	205.87	***3.91***	277.43	17.39
22	Patuakhali	9.35	12.67	341.56	***3.52***	716.92	11.58
23	Rajshahi	***1.22***	7.38	252.66	***0.88***	422.61	***4.23***
24	Rangamati	***2.60***	***4.82***	136.82	***5.94***	189.70	***1.88***
25	Rangpur	8.81	14.28	218.47	***1.73***	288.76	8.09
26	Sandwip	6.36	***5.73***	199.35	***5.68***	277.17	***4.71***
27	Satkhira	***2.95***	22.00	224.02	***1.53***	235.03	6.25
28	Shitakunda	***3.80***	14.62	109.29	20.90	62.26	813.48
29	Srimongol	***3.80***	14.62	109.29	20.90	62.26	813.48
30	Sylhet	***3.85***	8.76	160.61	***1.98***	188.39	22.20
31	Tangail	***0.95***	7.09	166.70	***1.71***	268.11	***2.16***
32	Teknaf	***3.97***	7.38	202.25	***4.11***	259.67	***3.80***
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Scaling						
Rank	1	3	5	2	6	4
Comparison	**1.00**	2.61	44.86	1.02	60.40	14.25

Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
0.0146	0.0443	0.4071	0.0088	0.4546	0.0706
0.0225	0.0583	0.4458	0.0167	0.3308	0.1260
0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
0.0010	0.0403	0.4353	0.0071	0.5019	0.0145
0.0222	0.0150	0.4183	0.0118	0.4921	0.0405
0.0038	0.0200	0.3659	0.0026	0.5992	0.0085
0.0046	0.0315	0.4376	0.0045	0.4911	0.0307
0.0010	0.0195	0.3598	0.0091	0.4994	0.1110
0.0010	0.0195	0.3598	0.0091	0.4994	0.1110
0.0098	0.0083	0.3317	0.0025	0.6439	0.0037
0.0041	0.0176	0.3361	0.0032	0.6168	0.0222
0.0095	0.0315	0.3930	0.0064	0.5306	0.0291
0.0105	0.0095	0.3999	0.0212	0.5497	0.0092
0.0103	0.0337	0.3759	0.0089	0.5386	0.0326
0.0053	0.0248	0.4158	0.0034	0.5403	0.0103
0.0053	0.0248	0.4158	0.0034	0.5403	0.0103
0.0081	0.0125	0.3036	0.0058	0.4704	0.1997
0.0086	0.0084	0.4231	0.0094	0.5398	0.0108
0.0038	0.0131	0.3927	0.0029	0.5717	0.0158
0.0054	0.0186	0.4308	0.0064	0.5375	0.0012
0.0186	0.0038	0.3363	0.0226	0.6001	0.0185
0.0073	0.0254	0.3947	0.0075	0.5318	0.0333
0.0085	0.0116	0.3118	0.0032	0.6544	0.0106
0.0018	0.0107	0.3667	0.0013	0.6134	0.0061
0.0076	0.0141	0.4003	0.0174	0.5551	0.0055
0.0163	0.0264	0.4045	0.0032	0.5346	0.0150
0.0127	0.0115	0.3995	0.0114	0.5555	0.0094
0.0060	0.0447	0.4555	0.0031	0.4779	0.0127
0.0037	0.0143	0.1067	0.0204	0.0608	0.7942
0.0037	0.0143	0.1067	0.0204	0.0608	0.7942
0.0100	0.0227	0.4163	0.0051	0.4883	0.0576
0.0100	0.0227	0.4163	0.0051	0.4883	0.0576
0.2577	0.6733	11.5634	0.2640	15.5692	3.6723

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B98. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

April

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.67	48.50	1.22	69.41	9.56

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***2.75***	8.76	161.35	***3.28***	172.11	81.26	0.0064	0.0204	0.3757	0.0076	0.4007	0.1892
2	Bhola	***1.36***	15.93	157.71	***2.34***	167.94	***1.42***	0.0039	0.0459	0.4549	0.0068	0.4844	0.0041
3	Bogra	8.97	***4.62***	235.06	8.55	419.81	16.51	0.0129	0.0067	0.3389	0.0123	0.6053	0.0238
4	Chandpur	***2.51***	15.66	193.82	***0.90***	227.97	***0.26***	0.0057	0.0355	0.4394	0.0020	0.5168	0.0006
5	Chittagong	8.97	7.85	200.45	13.03	281.19	21.02	0.0168	0.0147	0.3764	0.0245	0.5281	0.0395
6	Comilla	18.43	16.64	343.60	8.03	648.46	7.63	0.0177	0.0160	0.3295	0.0077	0.6219	0.0073
7	Cox's Bazar	***3.69***	***3.59***	157.38	***2.68***	196.54	7.04	0.0100	0.0097	0.4243	0.0072	0.5299	0.0190
8	Dhaka	10.72	***4.97***	237.80	***5.23***	446.27	11.24	0.0150	0.0069	0.3320	0.0073	0.6231	0.0157
9	Dinajpur	***1.38***	11.00	108.03	8.58	94.89	11.27	0.0150	0.0069	0.3320	0.0073	0.6231	0.0157
10	Faridpur	***1.79***	15.58	212.20	9.13	268.00	31.94	0.0059	0.0468	0.4594	0.0365	0.4036	0.0479
11	Feni	***3.86***	6.00	199.44	***3.40***	367.69	12.44	0.0033	0.0289	0.3939	0.0170	0.4975	0.0593
12	Hatiya	10.26	17.25	200.38	51.14	221.09	3.90E+05	0.0065	0.0101	0.3364	0.0057	0.6202	0.0210
13	Ishurdi	***1.44***	6.83	350.08	***4.45***	891.39	6.41	0.0000	0.0000	0.0005	0.0001	0.0006	0.9987
14	Jessore	***4.79***	18.41	310.64	***1.02***	538.40	***1.60***	0.0011	0.0054	0.2777	0.0035	0.7071	0.0051
15	Khepupara	***4.79***	18.41	310.64	***1.02***	538.40	***1.60***	0.0055	0.0210	0.3551	0.0012	0.6154	0.0018
16	Khulna	***2.21***	***4.00***	266.67	***1.29***	587.65	***5.07***	0.0055	0.0210	0.3551	0.0012	0.6154	0.0018
17	Kutubdia	8.99	10.00	147.45	14.94	134.59	49.11	0.0026	0.0046	0.3076	0.0015	0.6779	0.0059
18	Madaripur	***2.83***	8.76	153.18	***4.73***	163.86	***1.16***	0.0246	0.0274	0.4039	0.0409	0.3687	0.1345
19	M.Court	***2.48***	6.00	166.53	***2.44***	237.35	***4.59***	0.0059	0.0143	0.3971	0.0058	0.5659	0.0109
20	Mongla	***2.49***	***0.75***	137.17	6.13	352.17	***2.28***	0.0085	0.0262	0.4579	0.0141	0.4898	0.0035
21	Mymensingh	***4.73***	21.17	309.75	11.97	512.23	320.38	0.0050	0.0015	0.2738	0.0122	0.7030	0.0045
22	Patuakhali	***2.68***	18.08	157.34	***2.66***	157.65	7.54	0.0040	0.0179	0.2625	0.0101	0.4340	0.2715
23	Rajshahi	6.67	16.00	343.54	***5.19***	615.77	24.67	0.0078	0.0523	0.4548	0.0077	0.4557	0.0218
24	Rangamati	***3.23***	***4.82***	164.04	***4.35***	253.60	13.64	0.0066	0.0158	0.3395	0.0051	0.6086	0.0244
25	Rangpur	***0.57***	6.69	142.12	***3.38***	172.31	***3.13***	0.0073	0.0109	0.3697	0.0098	0.5716	0.0307
26	Sandwip	***1.40***	12.09	220.79	***3.36***	344.73	***1.80***	0.0017	0.0204	0.4330	0.0103	0.5250	0.0095
27	Satkhira	***0.88***	7.60	313.70	***2.73***	695.89	***1.72***	0.0024	0.0207	0.3780	0.0058	0.5901	0.0031
28	Shitakunda	***0.41***	10.14	116.19	***0.55***	102.77	***2.66***	0.0009	0.0074	0.3068	0.0027	0.6806	0.0017
29	Srimongol	***0.41***	10.14	116.19	***0.55***	102.77	***2.66***	0.0018	0.0436	0.4993	0.0024	0.4416	0.0114
30	Sylhet	***4.78***	6.69	121.77	***2.50***	133.43	50.65	0.0018	0.0436	0.4993	0.0024	0.4416	0.0114
31	Tangail	***1.75***	***4.82***	199.10	***5.80***	412.68	***3.24***	0.0150	0.0209	0.3807	0.0078	0.4172	0.1584
32	Teknaf	***5.68***	9.45	261.20	***1.04***	255.12	***5.78***	0.0150	0.0209	0.3807	0.0078	0.4172	0.1584
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.2418	0.6445	11.7258	0.2943	16.7816	2.3120

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B99. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

May

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.01	22.08	1.30	22.93	4.36

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***4.32***	7.38	90.64	10.08	58.76	22.07	0.0224	0.0382	0.4690	0.0522	0.3041	0.1142
2	Bhola	***4.37***	7.00	83.57	6.72	82.00	***2.32***	0.0235	0.0376	0.4493	0.0361	0.4409	0.0125
3	Bogra	6.95	14.28	121.42	***5.80***	94.71	39.42	0.0246	0.0505	0.4297	0.0205	0.3352	0.1395
4	Chandpur	7.28	6.69	87.41	***5.37***	79.95	7.29	0.0375	0.0345	0.4506	0.0277	0.4121	0.0376
5	Chittagong	***3.50***	11.31	117.21	9.24	98.50	19.13	0.0135	0.0437	0.4527	0.0357	0.3805	0.0739
6	Comilla	***4.89***	16.64	97.86	8.25	54.56	7.64	0.0257	0.0877	0.5155	0.0435	0.2874	0.0402
7	Cox's Bazar	6.82	16.69	189.84	***4.84***	200.49	7.48	0.0160	0.0392	0.4455	0.0114	0.4705	0.0175
8	Dhaka	***1.96***	***4.97***	123.71	7.70	134.39	***4.85***	0.0071	0.0179	0.4457	0.0277	0.4842	0.0175
9	Dinajpur	***5.12***	6.00	107.42	***2.54***	122.56	6.11	0.0071	0.0179	0.4457	0.0277	0.4842	0.0175
10	Faridpur	9.12	8.92	145.14	***3.99***	158.19	14.38	0.0205	0.0240	0.4301	0.0102	0.4907	0.0245
11	Feni	***1.95***	10.58	122.64	***3.45***	135.72	6.57	0.0269	0.0262	0.4272	0.0117	0.4656	0.0423
12	Hatiya	9.65	17.67	151.38	***4.86***	165.36	10.61	0.0069	0.0377	0.4366	0.0123	0.4831	0.0234
13	Ishurdi	***1.87***	***5.58***	110.31	***4.35***	121.34	***2.00***	0.0268	0.0491	0.4210	0.0135	0.4599	0.0295
14	Jessore	13.24	11.86	249.65	11.79	400.25	16.74	0.0076	0.0227	0.4494	0.0177	0.4944	0.0081
15	Khepupara	13.24	11.86	249.65	11.79	400.25	16.74	0.0188	0.0169	0.3549	0.0168	0.5689	0.0238
16	Khulna	11.50	12.80	180.73	***3.08***	208.87	15.72	0.0188	0.0169	0.3549	0.0168	0.5689	0.0238
17	Kutubdia	***3.99***	9.20	123.65	***5.14***	133.48	***2.77***	0.0266	0.0296	0.4177	0.0071	0.4827	0.0363
18	Madaripur	***1.30***	***3.52***	70.00	***0.69***	79.25	***4.27***	0.0143	0.0331	0.4444	0.0185	0.4798	0.0100
19	M.Court	***1.14***	7.67	93.42	***2.82***	84.83	***2.10***	0.0059	0.0399	0.4866	0.0147	0.4419	0.0110
20	Mongla	***3.21***	***0.75***	97.35	6.35	246.73	***3.12***	0.0082	0.0222	0.4402	0.0043	0.4983	0.0268
21	Mymensingh	***3.25***	18.07	104.19	18.05	58.74	541.91	0.0090	0.0021	0.2723	0.0178	0.6901	0.0087
22	Patuakhali	***1.93***	***5.58***	70.65	***5.39***	58.96	***1.12***	0.0044	0.0243	0.1400	0.0243	0.0789	0.7282
23	Rajshahi	***0.77***	12.55	128.69	***1.78***	110.83	6.62	0.0134	0.0389	0.4919	0.0375	0.4105	0.0078
24	Rangamati	***2.90***	8.45	117.46	***1.83***	148.52	8.54	0.0030	0.0480	0.4926	0.0068	0.4242	0.0253
25	Rangpur	8.01	19.10	95.32	14.13	49.37	195.21	0.0101	0.0294	0.4083	0.0063	0.5162	0.0297
26	Sandwip	***5.76***	13.91	112.91	***2.38***	120.57	***2.41***	0.0210	0.0501	0.2501	0.0371	0.1295	0.5122
27	Satkhira	9.33	***4.80***	212.10	***3.49***	394.58	7.80	0.0223	0.0539	0.4377	0.0092	0.4674	0.0094
28	Shitakunda	14.06	11.52	111.50	8.07	131.96	6.39	0.0148	0.0076	0.3355	0.0055	0.6242	0.0123
29	Srimongol	14.06	11.52	111.50	8.07	131.96	6.39	0.0496	0.0406	0.3933	0.0285	0.4655	0.0225
30	Sylhet	***5.81***	26.00	112.55	21.45	52.84	70.83	0.0496	0.0406	0.3933	0.0285	0.4655	0.0225
31	Tangail	9.17	***5.73***	104.13	6.36	125.24	14.03	0.0201	0.0898	0.3888	0.0741	0.1825	0.2447
32	Teknaf	***1.63***	6.00	77.72	***1.98***	47.83	***2.66***	0.0201	0.0898	0.3888	0.0741	0.1825	0.2447
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.5961	1.2006	13.1593	0.7757	13.6705	2.5979

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B100. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

June

		Scaling					
	Rank	1	4	5	2	6	3
	Comparison	**1.00**	1.55	11.29	1.19	13.19	1.20

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***4.15***	***4.28***	53.29	***3.47***	70.73	***4.13***	0.0297	0.0305	0.3805	0.0248	0.5050	0.0295
2	Bhola	10.18	***5.21***	62.15	7.42	124.06	***5.70***	0.0474	0.0243	0.2894	0.0345	0.5778	0.0266
3	Bogra	***2.61***	***4.62***	88.32	10.07	119.29	***1.59***	0.0115	0.0204	0.3899	0.0445	0.5267	0.0070
4	Chandpur	***2.32***	8.41	77.52	11.05	111.13	6.37	0.0107	0.0388	0.3575	0.0510	0.5126	0.0294
5	Chittagong	***4.11***	24.38	93.95	***4.42***	77.88	***4.98***	0.0196	0.1163	0.4480	0.0211	0.3714	0.0237
6	Comilla	***4.46***	23.07	130.34	***4.93***	132.68	49.90	0.0129	0.0668	0.3774	0.0143	0.3842	0.1445
7	Cox's Bazar	***3.33***	***4.62***	36.19	12.41	13.89	16.15	0.0385	0.0534	0.4179	0.1434	0.1604	0.1865
8	Dhaka	6.95	12.21	68.49	14.13	51.97	8.60	0.0428	0.0752	0.4219	0.0870	0.3201	0.0530
9	Dinajpur	15.97	6.00	61.18	6.05	65.39	10.64	0.0428	0.0752	0.4219	0.0870	0.3201	0.0530
10	Faridpur	10.28	***4.75***	112.92	7.45	213.37	6.51	0.0967	0.0363	0.3703	0.0366	0.3958	0.0644
11	Feni	8.08	18.08	108.42	6.14	126.33	10.71	0.0289	0.0134	0.3178	0.0210	0.6006	0.0183
12	Hatiya	9.00	14.75	83.99	***2.90***	92.37	9.89	0.0291	0.0651	0.3903	0.0221	0.4548	0.0386
13	Ishurdi	10.41	8.08	119.75	10.81	191.21	***4.45***	0.0423	0.0693	0.3945	0.0136	0.4339	0.0464
14	Jessore	9.66	***0.48***	74.57	7.94	110.25	7.92	0.0302	0.0234	0.3474	0.0314	0.5547	0.0129
15	Khepupara	9.66	***0.48***	74.57	7.94	110.25	7.92	0.0458	0.0023	0.3537	0.0377	0.5230	0.0376
16	Khulna	***1.91***	***5.20***	69.33	***2.43***	88.58	7.83	0.0458	0.0023	0.3537	0.0377	0.5230	0.0376
17	Kutubdia	7.56	***1.20***	52.49	8.66	60.55	7.74	0.0109	0.0297	0.3955	0.0139	0.5054	0.0446
18	Madaripur	***3.39***	***2.57***	66.83	7.28	139.55	***2.77***	0.0547	0.0087	0.3798	0.0627	0.4381	0.0560
19	M.Court	8.33	23.08	88.70	***2.98***	92.60	6.51	0.0375	0.1039	0.3992	0.0134	0.4167	0.0293
20	Mongla	***2.81***	***0.75***	27.53	10.97	57.33	***2.85***	0.0153	0.0116	0.3005	0.0327	0.6275	0.0124
21	Mymensingh	***2.55***	12.90	72.59	***2.91***	84.89	***0.83***	0.0275	0.0073	0.2693	0.1073	0.5607	0.0279
22	Patuakhali	8.36	18.08	68.82	6.60	78.14	12.62	0.0144	0.0730	0.4109	0.0165	0.4806	0.0047
23	Rajshahi	15.75	17.38	146.65	7.80	190.61	10.61	0.0434	0.0939	0.3573	0.0342	0.4057	0.0655
24	Rangamati	***5.82***	9.36	74.94	***1.81***	92.81	6.63	0.0405	0.0447	0.3772	0.0200	0.4903	0.0273
25	Rangpur	***3.94***	17.72	79.27	***0.36***	43.26	***0.82***	0.0304	0.0489	0.3916	0.0094	0.4850	0.0346
26	Sandwip	9.58	17.55	85.02	***5.42***	76.39	8.46	0.0271	0.1219	0.5453	0.0025	0.2976	0.0057
27	Satkhira	11.82	9.60	64.49	18.49	47.03	15.22	0.0473	0.0867	0.4200	0.0268	0.3774	0.0418
28	Shitakunda	***1.83***	***4.28***	49.47	***5.42***	57.52	***1.89***	0.0709	0.0576	0.3870	0.1110	0.2822	0.0913
29	Srimongol	***1.83***	***4.28***	49.47	***5.42***	57.52	***1.89***	0.0152	0.0355	0.4109	0.0450	0.4778	0.0157
30	Sylhet	***5.06***	17.03	63.46	***3.90***	69.35	***1.96***	0.0152	0.0355	0.4109	0.0450	0.4778	0.0157
31	Tangail	6.34	10.73	80.15	***3.31***	92.95	7.48	0.0315	0.1060	0.3947	0.0243	0.4314	0.0122
32	Teknaf	***0.93***	9.45	43.83	***5.00***	31.30	***1.69***	0.0315	0.1060	0.3947	0.0243	0.4314	0.0122
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	1.0879	1.6837	12.2770	1.2964	14.3493	1.3057

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B101. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

July

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Rank	1	4	5	2	6	3
	Comparison	**1.00**	2.86	15.83	1.23	19.05	2.64
	Scaling	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***2.59***	6.69	58.65	***3.65***	73.29	***3.63***
2	Bhola	***1.85***	***3.79***	29.52	***3.68***	33.64	***3.98***
3	Bogra	***4.63***	6.34	63.24	***2.78***	69.97	7.52
4	Chandpur	***3.86***	21.17	96.31	***3.16***	128.46	***4.24***
5	Chittagong	10.34	20.54	215.39	26.48	483.47	15.20
6	Comilla	***3.72***	18.79	96.94	6.43	90.63	***4.36***
7	Cox's Bazar	***4.89***	16.69	62.29	9.04	53.76	***4.38***
8	Dhaka	***3.05***	13.59	95.19	10.47	109.20	32.53
9	Dinajpur	15.08	***2.50***	38.28	12.81	44.31	9.02
10	Faridpur	***1.39***	6.42	83.97	***3.92***	135.79	***3.11***
11	Feni	9.57	33.50	111.85	6.40	80.24	15.53
12	Hatiya	***4.87***	19.33	99.46	8.12	143.24	***1.13***
13	Ishurdi	7.26	6.83	76.89	***5.75***	119.10	***4.94***
14	Jessore	***2.88***	28.07	88.10	8.05	67.87	***3.52***
15	Khepupara	***2.88***	28.07	88.10	8.05	67.87	***3.52***
16	Khulna	11.37	26.00	83.69	***2.65***	55.97	429925.25
17	Kutubdia	7.69	27.20	102.70	***4.37***	118.55	***2.91***
18	Madaripur	***5.05***	***4.95***	75.89	***3.25***	191.90	***2.11***
19	M.Court	6.19	***5.17***	51.47	7.83	72.22	***4.46***
20	Mongla	***5.77***	***4.50***	32.23	***3.72***	37.81	***2.45***
21	Mymensingh	***0.81***	7.03	55.20	***3.73***	60.03	11.01
22	Patuakhali	***3.84***	9.75	47.65	***0.95***	76.57	***1.19***
23	Rajshahi	***1.33***	12.21	102.47	***4.33***	142.64	***2.15***
24	Rangamati	***0.94***	***5.27***	47.20	***3.67***	59.79	***1.80***
25	Rangpur	***1.33***	19.79	74.32	***2.85***	50.24	***1.85***
26	Sandwip	***5.24***	***5.73***	66.51	***4.11***	89.80	6.51
27	Satkhira	14.42	32.80	169.40	***2.99***	263.77	14.07
28	Shitakunda	***3.84***	15.66	64.32	***3.00***	74.36	***1.70***
29	Srimongol	***3.84***	15.66	64.32	***3.00***	74.36	***1.70***
30	Sylhet	***1.24***	15.66	68.61	***3.37***	66.67	***2.63***
31	Tangail	***3.59***	10.73	58.60	***4.75***	70.03	***2.57***
32	Teknaf	***2.56***	11.86	38.61	***5.69***	37.97	***0.95***
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99
		0.7509	2.1440	11.8906	0.9216	14.3072	1.9856

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B102. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

August

								Scaling					
								Rank	1	3	5	4	6	2
								Comparison	**1.00**	1.33	12.46	1.85	12.84	1.15
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***3.13***	7.38	78.01	11.42	92.27	***3.45***		0.0160	0.0377	0.3987	0.0584	0.4716	0.0176
2	Bhola	7.35	***5.57***	63.13	22.24	79.70	11.47		0.0388	0.0294	0.3332	0.1174	0.4207	0.0605
3	Bogra	6.39	7.72	89.41	7.01	98.72	10.70		0.0291	0.0351	0.4065	0.0319	0.4488	0.0487
4	Chandpur	***2.34***	18.07	76.53	9.69	65.74	***3.67***		0.0133	0.1026	0.4347	0.0551	0.3734	0.0208
5	Chittagong	***3.30***	***5.54***	57.44	6.89	49.85	13.83		0.0241	0.0405	0.4197	0.0504	0.3643	0.1010
6	Comilla	9.50	14.86	103.85	***2.41***	106.51	8.15		0.0387	0.0606	0.4234	0.0098	0.4342	0.0332
7	Cox's Bazar	11.57	6.00	79.41	7.30	78.91	12.60		0.0591	0.0306	0.4056	0.0373	0.4030	0.0643
8	Dhaka	8.02	6.34	96.38	9.59	101.72	11.35		0.0344	0.0272	0.4129	0.0411	0.4358	0.0486
9	Dinajpur	***3.31***	***5.50***	58.93	9.85	55.76	***5.71***		0.0344	0.0272	0.4129	0.0411	0.4358	0.0486
10	Faridpur	6.69	***1.83***	57.53	7.09	64.30	***5.41***		0.0238	0.0396	0.4238	0.0708	0.4010	0.0411
11	Feni	8.91	7.67	65.67	8.83	60.20	9.32		0.0468	0.0128	0.4027	0.0496	0.4501	0.0379
12	Hatiya	6.58	11.83	69.38	7.81	79.25	***2.81***		0.0555	0.0477	0.4089	0.0550	0.3749	0.0580
13	Ishurdi	***4.35***	***3.92***	81.87	***3.20***	108.65	***5.92***		0.0370	0.0666	0.3905	0.0440	0.4460	0.0158
14	Jessore	***3.88***	6.69	80.58	9.51	96.79	***4.45***		0.0209	0.0188	0.3938	0.0154	0.5226	0.0285
15	Khepupara	***3.88***	6.69	80.58	9.51	96.79	***4.45***		0.0192	0.0331	0.3991	0.0471	0.4794	0.0220
16	Khulna	***5.10***	6.80	67.77	8.70	79.46	***3.74***		0.0192	0.0331	0.3991	0.0471	0.4794	0.0220
17	Kutubdia	***3.48***	***4.40***	54.46	7.10	51.39	6.35		0.0297	0.0396	0.3950	0.0507	0.4632	0.0218
18	Madaripur	***2.10***	***2.10***	38.10	11.35	45.73	***1.96***		0.0274	0.0346	0.4282	0.0559	0.4041	0.0499
19	M.Court	7.11	***2.67***	55.35	11.22	58.16	***4.79***		0.0511	0.0191	0.3973	0.0806	0.4175	0.0344
20	Mongla	7.05	***4.50***	31.68	***4.24***	47.89	***2.21***		0.0208	0.0207	0.3759	0.1120	0.4512	0.0194
21	Mymensingh	***1.57***	7.72	74.75	10.93	80.81	***3.99***		0.0722	0.0461	0.3247	0.0435	0.4908	0.0227
22	Patuakhali	7.42	***2.67***	50.29	31.21	64.26	10.92		0.0087	0.0430	0.4158	0.0608	0.4495	0.0222
23	Rajshahi	***3.19***	***3.93***	86.27	***4.52***	102.50	6.79		0.0445	0.0160	0.3016	0.1871	0.3853	0.0655
24	Rangamati	9.10	***0.73***	46.56	18.50	48.56	7.40		0.0154	0.0190	0.4163	0.0218	0.4947	0.0328
25	Rangpur	9.65	***4.62***	90.69	15.68	108.05	15.46		0.0695	0.0056	0.3559	0.1414	0.3711	0.0566
26	Sandwip	***1.48***	***4.36***	38.58	***1.88***	22.21	***2.57***		0.0395	0.0189	0.3714	0.0642	0.4425	0.0633
27	Satkhira	9.49	***5.20***	80.69	12.75	106.68	***4.23***		0.0208	0.0614	0.5427	0.0264	0.3124	0.0362
28	Shitakunda	***3.36***	11.17	41.29	7.72	27.86	***2.64***		0.0433	0.0237	0.3684	0.0582	0.4870	0.0193
29	Srimongol	***3.36***	11.17	41.29	7.72	27.86	***2.64***		0.0357	0.1188	0.4391	0.0821	0.2963	0.0280
30	Sylhet	***1.08***	8.76	53.01	***5.28***	38.31	***2.01***		0.0357	0.1188	0.4391	0.0821	0.2963	0.0280
31	Tangail	***5.92***	***5.73***	75.01	12.03	78.24	***3.52***		0.0100	0.0808	0.4888	0.0487	0.3533	0.0185
32	Teknaf	***1.92***	14.28	74.54	***3.92***	71.90	***4.37***		0.0100	0.0808	0.4888	0.0487	0.3533	0.0185
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		1.0446	1.3896	13.0146	1.9357	13.4094	1.2061

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B103. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

September

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	1.40	15.48	1.34	18.71	3.61
1	Barisal	***4.29***	9.45	82.96	***4.14***	57.35	***2.85***
2	Bhola	***2.90***	6.64	50.45	6.94	55.02	***1.34***
3	Bogra	***1.43***	7.72	79.20	6.92	76.76	8.85
4	Chandpur	17.66	11.52	108.63	10.03	138.56	16.57
5	Chittagong	***4.56***	8.23	157.98	***4.31***	273.07	31.05
6	Comilla	7.50	8.79	116.42	17.77	143.45	11.03
7	Cox's Bazar	***3.77***	14.97	112.14	***3.31***	107.88	***3.48***
8	Dhaka	***2.52***	8.76	94.80	13.07	112.80	13.21
9	Dinajpur	17.73	***3.50***	61.98	9.16	61.71	13.52
10	Faridpur	***5.47***	***2.67***	86.30	8.51	114.66	***4.85***
11	Feni	6.14	17.67	127.26	7.19	145.71	8.81
12	Hatiya	10.06	14.75	138.06	***5.34***	228.75	47.93
13	Ishurdi	***5.11***	***2.25***	74.27	***2.72***	108.50	***5.88***
14	Jessore	12.83	6.34	109.73	18.44	124.33	***5.72***
15	Khepupara	12.83	6.34	109.73	18.44	124.33	***5.72***
16	Khulna	***3.08***	10.80	110.45	***1.51***	169.34	***0.90***
17	Kutubdia	***4.90***	12.40	106.94	6.39	108.59	***4.18***
18	Madaripur	***2.44***	***3.05***	63.27	***2.81***	107.98	***2.91***
19	M.Court	***1.96***	9.33	101.89	6.24	135.29	***3.18***
20	Mongla	***5.70***	***2.00***	50.80	11.93	106.51	7.63
21	Mymensingh	***1.89***	10.48	63.70	8.50	48.94	21.59
22	Patuakhali	***5.87***	6.00	65.21	7.45	61.68	***2.41***
23	Rajshahi	***4.93***	***5.31***	105.19	6.47	132.52	24.25
24	Rangamati	8.33	***5.27***	92.74	***4.23***	144.37	6.42
25	Rangpur	7.02	6.00	101.55	12.13	124.44	9.73
26	Sandwip	8.54	12.09	132.20	9.45	178.23	17.59
27	Satkhira	***4.76***	***4.80***	91.70	***4.46***	103.09	***4.54***
28	Shitakunda	***3.79***	11.52	99.49	***1.06***	126.01	***2.46***
29	Srimongol	***3.79***	11.52	99.49	***1.06***	126.01	***2.46***
30	Sylhet	***1.35***	12.90	50.94	8.17	16.49	401.45
31	Tangail	10.14	***3.00***	59.12	7.61	81.63	9.30
32	Teknaf	***3.32***	6.34	103.59	***2.54***	124.90	***1.00***
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99

Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
0.0267	0.0587	0.5152	0.0257	0.3561	0.0177
0.0235	0.0539	0.4092	0.0563	0.4462	0.0109
0.0079	0.0427	0.4378	0.0383	0.4243	0.0489
0.0583	0.0380	0.3586	0.0331	0.4574	0.0547
0.0095	0.0172	0.3297	0.0090	0.5698	0.0648
0.0246	0.0288	0.3818	0.0583	0.4704	0.0362
0.0153	0.0609	0.4567	0.0135	0.4393	0.0142
0.0103	0.0357	0.3867	0.0533	0.4601	0.0539
0.0103	0.0357	0.3867	0.0533	0.4601	0.0539
0.1058	0.0209	0.3698	0.0547	0.3682	0.0806
0.0246	0.0120	0.3879	0.0382	0.5154	0.0218
0.0196	0.0565	0.4069	0.0230	0.4659	0.0282
0.0226	0.0332	0.3103	0.0120	0.5142	0.1077
0.0257	0.0113	0.3737	0.0137	0.5460	0.0296
0.0462	0.0229	0.3956	0.0665	0.4482	0.0206
0.0462	0.0229	0.3956	0.0665	0.4482	0.0206
0.0104	0.0365	0.3730	0.0051	0.5719	0.0031
0.0201	0.0509	0.4394	0.0263	0.4461	0.0172
0.0076	0.0362	0.3951	0.0242	0.5246	0.0123
0.0134	0.0167	0.3468	0.0154	0.5918	0.0160
0.0309	0.0108	0.2753	0.0646	0.5771	0.0413
0.0122	0.0676	0.4107	0.0548	0.3155	0.1392
0.0395	0.0404	0.4388	0.0501	0.4150	0.0162
0.0177	0.0191	0.3775	0.0232	0.4755	0.0870
0.0319	0.0202	0.3548	0.0162	0.5524	0.0246
0.0269	0.0230	0.3893	0.0465	0.4770	0.0373
0.0239	0.0338	0.3692	0.0264	0.4977	0.0491
0.0223	0.0225	0.4298	0.0209	0.4832	0.0213
0.0155	0.0471	0.4072	0.0044	0.5157	0.0101
0.0155	0.0471	0.4072	0.0044	0.5157	0.0101
0.0027	0.0263	0.1037	0.0166	0.0336	0.8171
0.0027	0.0263	0.1037	0.0166	0.0336	0.8171
0.7704	1.0756	11.9233	1.0310	14.4163	2.7833

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B104. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

October

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***4.85***	***1.52***	100.72	***5.35***	111.12	***5.88***
2	Bhola	***2.15***	8.79	64.91	***4.02***	41.92	***5.65***
3	Bogra	***2.48***	8.76	104.33	***4.17***	81.37	***5.04***
4	Chandpur	***2.03***	12.90	105.29	***0.88***	102.85	***0.69***
5	Chittagong	***2.94***	***3.23***	119.14	***1.40***	154.66	7.45
6	Comilla	***3.72***	***4.14***	102.98	7.04	113.02	***2.32***
7	Cox's Bazar	***1.42***	10.14	142.99	***5.15***	144.52	30.02
8	Dhaka	10.51	***1.17***	88.62	9.97	90.73	7.65
9	Dinajpur	***3.59***	***5.00***	85.04	6.11	79.72	***4.76***
10	Faridpur	6.59	***1.42***	80.31	***2.59***	74.41	7.73
11	Feni	***0.79***	10.17	132.01	***4.18***	156.76	***0.69***
12	Hatiya	9.78	18.92	199.09	11.08	296.77	30.63
13	Ishurdi	7.77	6.42	114.19	***5.52***	116.68	60.72
14	Jessore	***2.30***	***5.31***	91.65	***2.52***	84.77	***5.21***
15	Khepupara	***2.30***	***5.31***	91.65	***2.52***	84.77	***5.21***
16	Khulna	6.04	6.00	116.43	***3.60***	126.31	7.68
17	Kutubdia	***5.46***	23.60	177.97	11.08	155.54	394.62
18	Madaripur	***2.38***	10.19	80.40	***4.81***	69.11	***1.62***
19	M.Court	9.38	6.42	101.85	***4.19***	109.36	8.88
20	Mongla	***5.66***	***0.75***	68.46	***5.01***	129.58	***3.58***
21	Mymensingh	***1.18***	6.69	106.52	***5.66***	111.92	***0.84***
22	Patuakhali	***4.07***	7.25	73.46	7.06	64.19	35.17
23	Rajshahi	***1.84***	17.03	147.64	12.09	121.61	***5.42***
24	Rangamati	***4.01***	17.55	123.78	6.50	119.65	31.11
25	Rangpur	***2.40***	13.59	102.79	***0.58***	55.86	***2.20***
26	Sandwip	7.11	14.82	144.07	***5.88***	157.21	6.21
27	Satkhira	8.70	17.20	64.60	***4.84***	13.53	329221.27
28	Shitakunda	***0.64***	8.07	65.05	***3.63***	44.87	***1.68***
29	Srimongol	***0.64***	8.07	65.05	***3.63***	44.87	***1.68***
30	Sylhet	22.03	42.55	122.98	***1.86***	34.35	7.50E+08
31	Tangail	***1.44***	6.18	85.98	***1.01***	84.00	***2.99***
32	Teknaf	***1.64***	13.93	182.20	***1.69***	200.00	***0.48***
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99

Scaling						
Rank	1	3	6	2	5	4
Comparison	**1.00**	1.93	24.72	1.26	24.03	8.99
	Normal	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
	0.0211	0.0066	0.4390	0.0233	0.4843	0.0256
	0.0169	0.0689	0.5094	0.0315	0.3290	0.0443
	0.0120	0.0425	0.5061	0.0202	0.3947	0.0245
	0.0090	0.0574	0.4687	0.0039	0.4579	0.0031
	0.0102	0.0112	0.4125	0.0049	0.5355	0.0258
	0.0159	0.0178	0.4416	0.0302	0.4846	0.0099
	0.0042	0.0303	0.4278	0.0154	0.4324	0.0898
	0.0504	0.0056	0.4247	0.0478	0.4348	0.0367
	0.0504	0.0056	0.4247	0.0478	0.4348	0.0367
	0.0195	0.0271	0.4616	0.0332	0.4327	0.0258
	0.0381	0.0082	0.4641	0.0150	0.4300	0.0447
	0.0026	0.0334	0.4334	0.0137	0.5146	0.0023
	0.0173	0.0334	0.3516	0.0196	0.5241	0.0541
	0.0250	0.0206	0.3668	0.0177	0.3748	0.1951
	0.0120	0.0277	0.4779	0.0131	0.4421	0.0272
	0.0120	0.0277	0.4779	0.0131	0.4421	0.0272
	0.0227	0.0226	0.4376	0.0135	0.4747	0.0289
	0.0071	0.0307	0.2317	0.0144	0.2025	0.5137
	0.0391	0.0267	0.4242	0.0175	0.4555	0.0370
	0.0141	0.0605	0.4771	0.0285	0.4101	0.0096
	0.0265	0.0035	0.3213	0.0235	0.6082	0.0168
	0.0051	0.0287	0.4576	0.0243	0.4807	0.0036
	0.0213	0.0379	0.3842	0.0369	0.3357	0.1839
	0.0060	0.0557	0.4830	0.0396	0.3979	0.0177
	0.0133	0.0580	0.4091	0.0215	0.3954	0.1028
	0.0135	0.0766	0.5793	0.0033	0.3148	0.0124
	0.0212	0.0442	0.4297	0.0175	0.4689	0.0185
	0.0000	0.0001	0.0002	0.0000	0.0000	0.9997
	0.0052	0.0651	0.5249	0.0293	0.3620	0.0136
	0.0052	0.0651	0.5249	0.0293	0.3620	0.0136
	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
	0.5168	0.9995	12.7726	0.6496	12.4170	4.6445

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B105. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

November

		Scaling					
	Rank	1	3	6	2	5	4
	Comparison	**1.00**	1.74	22.95	1.26	22.90	10.68

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***1.89***	8.07	156.72	***2.81***	131.79	***1.24***	0.0062	0.0267	0.5181	0.0093	0.4357	0.0041
2	Bhola	***4.39***	9.50	99.13	***2.89***	100.74	***1.04***	0.0202	0.0436	0.4554	0.0133	0.4627	0.0048
3	Bogra	***0.73***	11.86	157.89	***3.24***	160.92	***3.61***	0.0022	0.0351	0.4668	0.0096	0.4757	0.0107
4	Chandpur	***5.15***	13.59	155.98	***1.82***	203.40	***1.43***	0.0135	0.0356	0.4090	0.0048	0.5333	0.0037
5	Chittagong	***2.34***	***4.00***	105.91	***2.47***	110.72	***2.77***	0.0103	0.0175	0.4641	0.0108	0.4852	0.0121
6	Comilla	***2.23***	17.71	228.88	***3.42***	294.78	6.14	0.0040	0.0320	0.4138	0.0062	0.5329	0.0111
7	Cox's Bazar	6.98	6.69	115.47	10.16	84.83	10.54	0.0297	0.0285	0.4921	0.0433	0.3615	0.0449
8	Dhaka	6.27	7.03	148.89	6.60	152.86	13.72	0.0187	0.0210	0.4439	0.0197	0.4558	0.0409
9	Dinajpur	7.46	11.50	132.56	13.18	130.52	489.25	0.0187	0.0210	0.4439	0.0197	0.4558	0.0409
10	Faridpur	***2.34***	***4.33***	142.63	***1.89***	196.05	***3.00***	0.0095	0.0147	0.1690	0.0168	0.1664	0.6237
11	Feni	***2.93***	16.42	160.82	***0.59***	164.22	***2.21***	0.0067	0.0124	0.4072	0.0054	0.5598	0.0086
12	Hatiya	11.88	13.08	211.45	***3.99***	268.36	6.29	0.0084	0.0473	0.4632	0.0017	0.4730	0.0064
13	Ishurdi	***5.11***	8.92	190.53	***0.84***	272.46	***1.54***	0.0231	0.0254	0.4105	0.0077	0.5210	0.0122
14	Jessore	6.29	***1.86***	113.95	***4.99***	130.18	10.49	0.0107	0.0186	0.3974	0.0018	0.5683	0.0032
15	Khepupara	6.29	***1.86***	113.95	***4.99***	130.18	10.49	0.0235	0.0070	0.4256	0.0186	0.4862	0.0392
16	Khulna	***4.09***	***3.20***	128.92	***4.04***	165.30	***4.06***	0.0235	0.0070	0.4256	0.0186	0.4862	0.0392
17	Kutubdia	***4.53***	8.80	106.86	***2.48***	84.15	***4.30***	0.0132	0.0103	0.4164	0.0130	0.5339	0.0131
18	Madaripur	***4.03***	9.24	90.98	***1.54***	95.77	***2.81***	0.0215	0.0417	0.5062	0.0117	0.3986	0.0203
19	M.Court	7.85	***3.92***	121.67	6.46	148.96	6.42	0.0266	0.0133	0.4121	0.0219	0.5045	0.0217
20	Mongla	9.66	9.50	77.31	6.96	73.65	12.97	0.0197	0.0452	0.4452	0.0075	0.4686	0.0137
21	Mymensingh	***1.44***	14.28	173.09	9.37	188.61	112.58	0.0508	0.0500	0.4068	0.0366	0.3875	0.0682
22	Patuakhali	***3.92***	6.83	80.28	***2.18***	67.11	***4.58***	0.0029	0.0286	0.3466	0.0188	0.3777	0.2254
23	Rajshahi	7.24	***2.55***	200.30	***3.36***	319.28	***4.17***	0.0238	0.0414	0.4869	0.0132	0.4070	0.0277
24	Rangamati	7.51	***2.55***	74.88	9.30	50.11	***4.25***	0.0135	0.0048	0.3731	0.0062	0.5947	0.0078
25	Rangpur	41.83	48.76	180.42	155.39	71.66	3.24E+12	0.0505	0.0171	0.5039	0.0626	0.3372	0.0286
26	Sandwip	***5.27***	9.36	117.06	***2.90***	99.54	9.31	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
27	Satkhira	24.18	28.40	98.38	***2.12***	23.32	6.97E+08	0.0216	0.0385	0.4808	0.0119	0.4089	0.0382
28	Shitakunda	***2.83***	11.86	48.19	13.05	11.62	14.05	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
29	Srimongol	***2.83***	11.86	48.19	13.05	11.62	14.05	0.0279	0.1167	0.4743	0.1284	0.1143	0.1383
30	Sylhet	80.73	41.86	145.45	***4.03***	37.01	3.97E+16	0.0279	0.1167	0.4743	0.1284	0.1143	0.1383
31	Tangail	***2.51***	7.09	136.09	***5.86***	166.02	***5.66***	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
32	Teknaf	9.91	***3.93***	96.07	***4.09***	77.67	9.76	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.5287	0.9176	12.1321	0.6676	12.1068	5.6473

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B106. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

December

		Scaling					
	Rank	1	3	5	2	4	6
	Comparison	**1.00**	1.81	18.41	1.80	17.14	31.76

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	8.26	28.76	194.47	9.70	143.07	114.83	0.0166	0.0576	0.3896	0.0194	0.2867	0.2301
2	Bhola	***3.69***	14.86	145.05	7.57	169.67	***3.80***	0.0107	0.0431	0.4209	0.0220	0.4923	0.0110
3	Bogra	17.24	21.17	169.51	29.01	137.92	90.51	0.0371	0.0455	0.3643	0.0623	0.2964	0.1945
4	Chandpur	***3.62***	23.24	104.35	35.19	53.01	628.87	0.0043	0.0274	0.1230	0.0415	0.0625	0.7413
5	Chittagong	9.56	27.46	140.95	57.48	74.52	61863.75	0.0002	0.0004	0.0023	0.0009	0.0012	0.9950
6	Comilla	77.74	38.43	138.87	8.54	38.36	8.83E+15	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
7	Cox's Bazar	10.08	23.93	254.78	11.09	251.16	21.25	0.0176	0.0418	0.4452	0.0194	0.4389	0.0371
8	Dhaka	11.74	19.79	181.08	22.75	163.76	2068.14	0.0048	0.0080	0.0734	0.0092	0.0664	0.8382
9	Dinajpur	***3.56***	16.50	101.79	***5.05***	78.27	6.29	0.0048	0.0080	0.0734	0.0092	0.0664	0.8382
10	Faridpur	7.01	10.58	151.28	11.93	166.17	40.44	0.0168	0.0780	0.4814	0.0239	0.3701	0.0298
11	Feni	14.20	17.67	192.34	17.98	201.75	40.61	0.0181	0.0273	0.3905	0.0308	0.4289	0.1044
12	Hatiya	9.44	28.50	227.78	25.58	211.44	20124.36	0.0293	0.0365	0.3969	0.0371	0.4164	0.0838
13	Ishurdi	***5.80***	18.92	137.08	17.12	106.91	8428.82	0.0005	0.0014	0.0110	0.0012	0.0103	0.9756
14	Jessore	6.81	12.90	143.48	11.62	136.24	91.81	0.0007	0.0022	0.0157	0.0020	0.0123	0.9672
15	Khepupara	6.81	12.90	143.48	11.62	136.24	91.81	0.0169	0.0320	0.3562	0.0288	0.3382	0.2279
16	Khulna	6.46	10.00	153.67	11.28	168.65	28.80	0.0169	0.0320	0.3562	0.0288	0.3382	0.2279
17	Kutubdia	66.68	81.20	199.59	***3.22***	50.50	1.01E+14	0.0171	0.0264	0.4056	0.0298	0.4452	0.0760
18	Madaripur	***1.91***	***4.95***	86.67	***1.41***	107.45	***2.83***	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
19	M.Court	***1.35***	13.08	117.42	6.24	93.73	15.93	0.0054	0.0528	0.4739	0.0252	0.3783	0.0643
20	Mongla	18.63	***4.50***	93.99	16.12	118.10	10.65	0.0093	0.0241	0.4223	0.0069	0.5236	0.0138
21	Mymensingh	14.56	20.14	177.62	25.53	155.91	45.18	0.0711	0.0172	0.3588	0.0615	0.4508	0.0407
22	Patuakhali	***3.12***	11.83	150.77	***4.09***	175.28	26.18	0.0332	0.0459	0.4047	0.0582	0.3552	0.1029
23	Rajshahi	11.32	23.93	238.04	35.80	262.64	4897223.26	0.0084	0.0319	0.4061	0.0110	0.4721	0.0705
24	Rangamati	***4.00***	***3.91***	117.92	***4.66***	125.12	***1.94***	0.0000	0.0000	0.0000	0.0000	0.0001	0.9999
25	Rangpur	***3.40***	13.59	117.55	18.94	83.54	2005.68	0.0155	0.0152	0.4578	0.0181	0.4858	0.0075
26	Sandwip	***4.54***	***3.91***	104.45	***4.02***	108.77	7.78	0.0015	0.0061	0.0524	0.0084	0.0373	0.8943
27	Satkhira	81.78	42.80	147.46	***3.56***	46.92	3.44E+15	0.0195	0.0167	0.4474	0.0172	0.4659	0.0333
28	Shitakunda	***4.79***	8.76	60.03	15.91	26.82	22.69	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
29	Srimongol	***4.79***	8.76	60.03	15.91	26.82	22.69	0.0345	0.0630	0.4319	0.1145	0.1929	0.1632
30	Sylhet	88.00	38.76	129.38	***2.38***	32.51	1.90E+17	0.0345	0.0630	0.4319	0.1145	0.1929	0.1632
31	Tangail	15.31	22.55	146.86	37.30	103.33	31631.58	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
32	Teknaf	***2.33***	11.86	230.86	***2.65***	298.67	40.31	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.4450	0.8036	8.1928	0.8018	7.6250	14.1318

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B107. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

Yearly Average

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.17	51.35	1.12	130.68	27.38

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***1.46***	9.45	291.54	***2.52***	613.08	***3.78***	0.0016	0.0102	0.3163	0.0027	0.6651	0.0041
2	Bhola	***2.05***	13.79	189.66	***1.14***	345.35	***4.79***	0.0037	0.0248	0.3406	0.0020	0.6203	0.0086
3	Bogra	***4.01***	16.00	299.30	***4.78***	584.83	26.11	0.0043	0.0171	0.3201	0.0051	0.6255	0.0279
4	Chandpur	***2.23***	19.79	321.03	***1.55***	787.02	***0.43***	0.0020	0.0175	0.2836	0.0014	0.6952	0.0004
5	Chittagong	***2.20***	***2.85***	330.84	***3.73***	1071.08	***5.63***	0.0016	0.0020	0.2336	0.0026	0.7562	0.0040
6	Comilla	7.68	32.00	461.20	25.82	971.31	7142.92	0.0009	0.0037	0.0534	0.0030	0.1124	0.8266
7	Cox's Bazar	***1.60***	6.69	298.44	***4.24***	712.00	7.09	0.0016	0.0065	0.2897	0.0041	0.6912	0.0069
8	Dhaka	6.85	***3.59***	244.59	12.01	586.39	8.45	0.0079	0.0042	0.2838	0.0139	0.6804	0.0098
9	Dinajpur	***0.99***	8.00	316.53	***1.42***	1074.24	***0.46***	0.0079	0.0042	0.2838	0.0139	0.6804	0.0098
10	Faridpur	***0.93***	9.33	394.53	***1.97***	1346.68	***2.34***	0.0007	0.0057	0.2258	0.0010	0.7664	0.0003
11	Feni	6.39	20.58	395.02	6.95	1042.52	131.79	0.0005	0.0053	0.2247	0.0011	0.7670	0.0013
12	Hatiya	11.75	18.08	495.16	27.73	1587.37	24.42	0.0040	0.0128	0.2464	0.0043	0.6503	0.0822
13	Ishurdi	***3.78***	8.92	390.77	8.71	1333.89	7.45	0.0054	0.0084	0.2288	0.0128	0.7334	0.0113
14	Jessore	***4.91***	21.86	347.27	***1.44***	725.46	***2.13***	0.0022	0.0051	0.2228	0.0050	0.7607	0.0042
15	Khepupara	***4.91***	21.86	347.27	***1.44***	725.46	***2.13***	0.0044	0.0198	0.3148	0.0013	0.6577	0.0019
16	Khulna	10.93	9.20	408.89	8.73	1410.52	15.80	0.0044	0.0198	0.3148	0.0013	0.6577	0.0019
17	Kutubdia	***4.77***	***5.20***	377.79	12.07	1312.74	9.06	0.0059	0.0049	0.2194	0.0047	0.7567	0.0085
18	Madaripur	***2.08***	10.19	227.65	***0.62***	557.65	***2.41***	0.0028	0.0030	0.2194	0.0070	0.7625	0.0053
19	M.Court	6.97	***5.17***	283.70	***1.94***	870.84	10.72	0.0059	0.0044	0.2406	0.0016	0.7384	0.0091
20	Mongla	18.81	***4.50***	234.48	18.79	703.31	10.36	0.0026	0.0127	0.2844	0.0008	0.6965	0.0030
21	Mymensingh	***3.88***	11.52	316.67	***2.24***	877.70	***4.87***	0.0190	0.0045	0.2368	0.0190	0.7102	0.0105
22	Patuakhali	7.28	7.67	226.08	***2.49***	614.71	***2.93***	0.0032	0.0095	0.2602	0.0018	0.7213	0.0040
23	Rajshahi	7.19	22.55	562.18	***4.60***	1493.49	11.68	0.0085	0.0089	0.2625	0.0029	0.7138	0.0034
24	Rangamati	8.51	6.64	327.56	18.11	1067.15	31.88	0.0034	0.0107	0.2675	0.0022	0.7106	0.0056
25	Rangpur	***3.60***	13.59	293.70	***0.80***	631.83	***1.66***	0.0058	0.0045	0.2244	0.0124	0.7310	0.0218
26	Sandwip	***3.18***	7.55	301.34	8.09	919.87	***4.26***	0.0038	0.0144	0.3107	0.0008	0.6685	0.0018
27	Satkhira	8.29	24.80	292.59	19.14	484.45	1.13E+05	0.0026	0.0061	0.2422	0.0065	0.7393	0.0034
28	Shitakunda	7.78	17.38	172.52	7.61	257.02	6.81	0.0001	0.0002	0.0026	0.0002	0.0042	0.9927
29	Srimongol	7.78	17.38	172.52	7.61	257.02	6.81	0.0166	0.0370	0.3678	0.0162	0.5479	0.0145
30	Sylhet	20.47	28.76	250.02	48.95	329.32	1.18E+09	0.0166	0.0370	0.3678	0.0162	0.5479	0.0145
31	Tangail	***0.97***	11.64	374.56	***1.31***	1296.19	***0.76***	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
32	Teknaf	***2.00***	15.66	376.62	***2.29***	868.93	***0.57***	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1497	0.3251	7.6891	0.1681	19.5686	4.0994

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B108. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

Yearly Maximum Monthly

		Scaling					
	Rank	3	4	5	1	6	2
	Comparison	1.14	2.13	72.33	**1.00**	121.03	1.09

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***1.73***	10.48	380.08	***1.38***	679.44	***0.81***	0.0016	0.0098	0.3539	0.0013	0.6327	0.0008
2	Bhola	***3.73***	8.07	198.87	***2.00***	257.20	***4.71***	0.0079	0.0170	0.4191	0.0042	0.5420	0.0099
3	Bogra	7.86	13.59	412.34	6.10	859.22	***5.00***	0.0060	0.0104	0.3162	0.0047	0.6589	0.0038
4	Chandpur	***2.88***	17.72	257.98	***1.19***	388.75	***0.81***	0.0043	0.0265	0.3854	0.0018	0.5808	0.0012
5	Chittagong	10.71	***1.69***	292.71	11.22	687.82	6.74	0.0106	0.0017	0.2896	0.0111	0.6804	0.0067
6	Comilla	***4.40***	8.07	300.62	***4.77***	439.82	***3.52***	0.0058	0.0106	0.3949	0.0063	0.5778	0.0046
7	Cox's Bazar	***5.06***	9.79	319.65	6.32	544.09	6.44	0.0057	0.0110	0.3586	0.0071	0.6104	0.0072
8	Dhaka	***1.69***	10.14	401.08	***1.69***	924.94	***0.72***	0.0013	0.0076	0.2993	0.0013	0.6901	0.0005
9	Dinajpur	***2.46***	***2.50***	225.68	10.64	473.34	***1.77***	0.0013	0.0076	0.2993	0.0013	0.6901	0.0005
10	Faridpur	7.83	***5.58***	347.33	***3.83***	936.51	6.22	0.0034	0.0035	0.3150	0.0149	0.6607	0.0025
11	Feni	8.40	11.42	324.79	8.12	255.17	***1.81***	0.0060	0.0043	0.2657	0.0029	0.7164	0.0048
12	Hatiya	***5.32***	6.42	292.25	***2.89***	454.40	***5.47***	0.0138	0.0187	0.5327	0.0133	0.4185	0.0030
13	Ishurdi	***3.60***	***5.58***	346.54	***4.65***	927.25	***1.48***	0.0069	0.0084	0.3812	0.0038	0.5926	0.0071
14	Jessore	***2.24***	11.52	449.93	***5.48***	740.70	***1.17***	0.0028	0.0043	0.2688	0.0036	0.7193	0.0012
15	Khepupara	***2.24***	11.52	449.93	***5.48***	740.70	***1.17***	0.0019	0.0095	0.3715	0.0045	0.6116	0.0010
16	Khulna	***1.75***	10.00	350.25	***1.98***	762.00	36.26	0.0019	0.0095	0.3715	0.0045	0.6116	0.0010
17	Kutubdia	***1.94***	16.80	416.74	***1.75***	816.54	***0.87***	0.0015	0.0086	0.3014	0.0017	0.6556	0.0312
18	Madaripur	***1.72***	***5.90***	192.53	***1.99***	285.72	***1.13***	0.0015	0.0134	0.3322	0.0014	0.6508	0.0007
19	M.Court	***2.25***	***3.08***	226.74	***2.97***	416.55	***1.72***	0.0034	0.0047	0.3471	0.0045	0.6376	0.0026
20	Mongla	***3.59***	***2.00***	122.47	***3.95***	160.21	***2.12***	0.0035	0.0121	0.3937	0.0041	0.5843	0.0023
21	Mymensingh	***2.35***	***3.24***	278.20	***5.22***	604.66	***3.94***	0.0122	0.0068	0.4161	0.0134	0.5443	0.0072
22	Patuakhali	8.03	***3.92***	233.28	8.32	303.28	***4.13***	0.0026	0.0036	0.3099	0.0058	0.6736	0.0044
23	Rajshahi	8.25	8.41	450.94	***3.34***	708.04	8.36	0.0143	0.0070	0.4159	0.0148	0.5406	0.0074
24	Rangamati	***2.05***	***2.09***	173.12	***1.51***	263.74	***2.67***	0.0069	0.0071	0.3798	0.0028	0.5963	0.0070
25	Rangpur	7.43	17.03	300.03	***2.99***	322.04	***4.39***	0.0046	0.0047	0.3889	0.0034	0.5924	0.0060
26	Sandwip	9.71	18.45	376.11	***4.05***	644.42	11.56	0.0114	0.0260	0.4588	0.0046	0.4925	0.0067
27	Satkhira	9.83	24.80	471.79	***3.91***	875.46	***4.23***	0.0091	0.0173	0.3534	0.0038	0.6055	0.0109
28	Shitakunda	***2.99***	6.69	149.51	***1.13***	171.23	***3.35***	0.0071	0.0178	0.3394	0.0028	0.6298	0.0030
29	Srimongol	***2.99***	6.69	149.51	***1.13***	171.23	***3.35***	0.0089	0.0200	0.4464	0.0034	0.5113	0.0100
30	Sylhet	***2.64***	***5.31***	266.18	***1.77***	485.77	***3.92***	0.0089	0.0200	0.4464	0.0034	0.5113	0.0100
31	Tangail	***2.41***	***3.00***	219.30	***2.60***	395.82	***2.31***	0.0034	0.0069	0.3477	0.0023	0.6345	0.0051
32	Teknaf	***5.74***	6.69	321.17	***3.22***	580.48	6.20	0.0034	0.0069	0.3477	0.0023	0.6345	0.0051
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1840	0.3433	11.6473	0.1610	19.4890	0.1754

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B109. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

Yearly Minimum Monthly

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.71	19.45	2.04	31.41	16.74
1	Barisal	***3.62***	***5.31***	64.51	***3.63***	134.20	***2.10***
2	Bhola	***2.65***	10.21	46.62	***3.30***	74.47	10.94
3	Bogra	***1.81***	6.69	88.54	***4.01***	161.36	***5.69***
4	Chandpur	***3.21***	6.34	56.02	8.03	87.19	***3.91***
5	Chittagong	***4.40***	15.54	101.13	11.48	138.62	16.91
6	Comilla	14.81	33.07	99.34	***5.08***	59.83	2.62E+07
7	Cox's Bazar	***2.08***	14.97	61.89	9.63	59.88	10.13
8	Dhaka	***5.27***	***3.93***	72.00	21.90	117.30	14.05
9	Dinajpur	***3.31***	***3.50***	49.28	***3.61***	93.47	***1.74***
10	Faridpur	***1.60***	***4.75***	113.71	***2.78***	287.54	***3.60***
11	Feni	14.90	23.50	93.18	13.47	69.47	9.68E+04
12	Hatiya	***4.02***	***5.17***	76.70	6.13	152.46	***5.84***
13	Ishurdi	***4.78***	12.67	122.99	***1.73***	263.10	***1.50***
14	Jessore	***4.97***	36.34	115.14	8.40	104.78	6.73
15	Khepupara	***4.97***	36.34	115.14	8.40	104.78	6.73
16	Khulna	11.12	29.20	84.23	***0.82***	54.08	9.93E+05
17	Kutubdia	13.01	22.00	79.11	11.60	61.45	4.15E+06
18	Madaripur	***5.14***	6.86	89.06	***4.95***	171.60	***4.16***
19	M.Court	***2.73***	6.42	70.48	9.99	131.58	8.45
20	Mongla	***2.47***	***2.00***	40.05	7.64	132.82	***0.58***
21	Mymensingh	***4.12***	12.55	84.36	13.60	114.38	11.10
22	Patuakhali	***3.82***	***2.25***	49.50	11.62	117.05	6.82
23	Rajshahi	***0.53***	13.93	118.59	***1.05***	193.59	***1.93***
24	Rangamati	10.85	9.36	71.12	***3.49***	151.12	***5.22***
25	Rangpur	***2.01***	9.10	75.40	12.24	91.47	21.81
26	Sandwip	***1.65***	11.18	77.43	***2.10***	128.14	***1.22***
27	Satkhira	7.94	26.00	80.18	17.89	53.26	1689.57
28	Shitakunda	***2.94***	6.69	44.58	***2.33***	54.29	***5.67***
29	Srimongol	***2.94***	6.69	44.58	***2.33***	54.29	***5.67***
30	Sylhet	6.05	24.97	77.98	9.65	47.61	606.70
31	Tangail	***0.89***	11.18	67.12	6.59	88.49	***5.10***
32	Teknaf	***0.24***	10.83	47.84	9.80	63.95	***4.81***
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99

Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
0.0169	0.0249	0.3023	0.0170	0.6290	0.0099
0.0179	0.0689	0.3146	0.0222	0.5025	0.0738
0.0067	0.0250	0.3303	0.0149	0.6019	0.0212
0.0195	0.0385	0.3401	0.0487	0.5294	0.0237
0.0153	0.0539	0.3511	0.0398	0.4812	0.0587
0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
0.0131	0.0944	0.3903	0.0607	0.3776	0.0639
0.0225	0.0168	0.3071	0.0934	0.5003	0.0599
0.0225	0.0168	0.3071	0.0934	0.5003	0.0599
0.0214	0.0226	0.3181	0.0233	0.6034	0.0112
0.0039	0.0115	0.2747	0.0067	0.6946	0.0087
0.0002	0.0002	0.0010	0.0001	0.0007	0.9978
0.0160	0.0206	0.3064	0.0245	0.6091	0.0233
0.0118	0.0311	0.3024	0.0043	0.6468	0.0037
0.0180	0.1315	0.4166	0.0304	0.3791	0.0244
0.0180	0.1315	0.4166	0.0304	0.3791	0.0244
0.0000	0.0000	0.0001	0.0000	0.0001	0.9998
0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
0.0119	0.0279	0.3069	0.0435	0.5730	0.0368
0.0182	0.0243	0.3161	0.0176	0.6090	0.0147
0.0133	0.0108	0.2158	0.0411	0.7158	0.0032
0.0172	0.0523	0.3513	0.0567	0.4764	0.0462
0.0200	0.0118	0.2591	0.0608	0.6127	0.0357
0.0016	0.0423	0.3598	0.0032	0.5873	0.0059
0.0432	0.0373	0.2831	0.0139	0.6017	0.0208
0.0095	0.0429	0.3556	0.0577	0.4314	0.1029
0.0074	0.0504	0.3492	0.0095	0.5779	0.0055
0.0042	0.0139	0.0428	0.0095	0.0284	0.9012
0.0252	0.0574	0.3826	0.0200	0.4660	0.0487
0.0252	0.0574	0.3826	0.0200	0.4660	0.0487
0.0078	0.0323	0.1009	0.0125	0.0616	0.7849
0.0078	0.0323	0.1009	0.0125	0.0616	0.7849
0.4363	1.1816	8.4854	0.8887	13.7038	7.3043

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B110. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

Average Pre-Monsoon(Mar-May)

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.93	62.12	1.27	117.09	5.82

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***3.10***	21.17	212.11	13.27	222.80	27.02	0.0062	0.0424	0.4247	0.0266	0.4461	0.0541
2	Bhola	***1.28***	10.21	133.30	***2.95***	166.61	***0.40***	0.0041	0.0325	0.4235	0.0094	0.5293	0.0013
3	Bogra	6.00	***3.24***	264.07	***3.95***	568.86	14.53	0.0070	0.0038	0.3068	0.0046	0.6610	0.0169
4	Chandpur	***2.73***	***4.62***	187.48	***3.95***	321.60	***4.40***	0.0052	0.0088	0.3572	0.0075	0.6128	0.0084
5	Chittagong	***1.64***	11.69	245.92	***2.30***	416.60	14.38	0.0024	0.0169	0.3551	0.0033	0.6016	0.0208
6	Comilla	***4.45***	25.57	306.34	8.05	428.82	9.58	0.0057	0.0327	0.3913	0.0103	0.5478	0.0122
7	Cox's Bazar	***0.91***	16.34	243.66	6.11	313.84	82.42	0.0014	0.0246	0.3673	0.0092	0.4732	0.1243
8	Dhaka	***1.25***	11.17	414.14	***3.72***	844.81	***0.78***	0.0010	0.0088	0.3246	0.0029	0.6621	0.0006
9	Dinajpur	***1.05***	11.00	236.50	***1.36***	466.82	6.07	0.0010	0.0088	0.3246	0.0029	0.6621	0.0006
10	Faridpur	9.57	***4.75***	399.17	24.38	1236.09	16.24	0.0015	0.0152	0.3272	0.0019	0.6458	0.0084
11	Feni	***1.81***	11.42	312.00	***0.68***	742.46	***4.03***	0.0057	0.0028	0.2362	0.0144	0.7313	0.0096
12	Hatiya	6.58	23.08	321.77	7.68	522.45	473.24	0.0017	0.0106	0.2909	0.0006	0.6923	0.0038
13	Ishurdi	***4.24***	20.58	501.24	***3.58***	1302.45	13.86	0.0049	0.0170	0.2375	0.0057	0.3856	0.3493
14	Jessore	6.93	17.72	393.34	***1.67***	715.48	12.52	0.0023	0.0112	0.2715	0.0019	0.7056	0.0075
15	Khepupara	6.93	17.72	393.34	***1.67***	715.48	12.52	0.0060	0.0154	0.3427	0.0015	0.6234	0.0109
16	Khulna	8.37	***2.80***	345.66	13.60	811.85	8.03	0.0060	0.0154	0.3427	0.0015	0.6234	0.0109
17	Kutubdia	***4.72***	14.00	255.79	***5.89***	392.18	28.18	0.0070	0.0024	0.2904	0.0114	0.6820	0.0067
18	Madaripur	8.73	15.90	240.87	***0.99***	498.51	***3.29***	0.0067	0.0200	0.3650	0.0084	0.5597	0.0402
19	M.Court	***3.41***	***5.17***	262.39	***2.92***	607.07	12.83	0.0038	0.0058	0.2936	0.0033	0.6792	0.0143
20	Mongla	10.82	***2.00***	181.09	21.25	556.65	8.07	0.0114	0.0207	0.3135	0.0013	0.6489	0.0043
21	Mymensingh	***1.63***	17.38	291.26	***2.19***	529.68	120.70	0.0139	0.0026	0.2322	0.0273	0.7138	0.0104
22	Patuakhali	***1.66***	8.92	167.33	***1.16***	275.46	***0.61***	0.0017	0.0181	0.3025	0.0023	0.5501	0.1254
23	Rajshahi	***0.37***	11.52	398.38	7.94	961.60	36.67	0.0037	0.0196	0.3676	0.0026	0.6052	0.0013
24	Rangamati	7.41	9.36	324.50	8.39	840.34	13.18	0.0003	0.0081	0.2812	0.0056	0.6789	0.0259
25	Rangpur	***1.46***	7.72	197.58	***1.55***	313.36	***3.96***	0.0062	0.0078	0.2697	0.0070	0.6984	0.0110
26	Sandwip	***4.20***	***4.82***	317.76	***5.52***	940.52	7.00	0.0028	0.0147	0.3759	0.0030	0.5962	0.0075
27	Satkhira	***0.69***	9.20	318.34	***2.39***	665.15	***3.01***	0.0033	0.0038	0.2483	0.0043	0.7349	0.0055
28	Shitakunda	8.08	16.00	197.12	***1.20***	260.00	7.27	0.0007	0.0092	0.3187	0.0024	0.6660	0.0030
29	Srimongol	8.08	16.00	197.12	***1.20***	260.00	7.27	0.0165	0.0327	0.4026	0.0024	0.5310	0.0148
30	Sylhet	***4.10***	9.79	226.72	9.09	416.64	18.73	0.0165	0.0327	0.4026	0.0024	0.5310	0.0148
31	Tangail	***2.80***	7.55	260.08	***1.24***	634.65	***4.84***	0.0060	0.0143	0.3309	0.0133	0.6082	0.0273
32	Teknaf	***3.26***	12.21	249.80	***1.40***	284.59	***5.18***	0.0060	0.0143	0.3309	0.0133	0.6082	0.0273
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1682	0.4934	10.4497	0.2143	19.6950	0.9794

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B111. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

Average Monsoon(Jun-Oct)

		Scaling					
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	2.10	41.97	1.09	102.06	13.68

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***1.08***	11.52	173.06	***4.22***	354.29	6.22	0.0020	0.0209	0.3144	0.0077	0.6437	0.0113
2	Bhola	***5.31***	13.07	114.03	***4.89***	196.35	220.20	0.0096	0.0236	0.2059	0.0088	0.3545	0.3976
3	Bogra	***3.26***	7.03	209.79	***1.59***	531.62	***2.25***	0.0043	0.0093	0.2777	0.0021	0.7036	0.0030
4	Chandpur	9.52	20.83	240.91	6.52	571.41	***5.48***	0.0111	0.0244	0.2819	0.0076	0.6686	0.0064
5	Chittagong	***2.90***	19.38	363.61	***4.38***	1089.07	48.70	0.0019	0.0127	0.2380	0.0029	0.7127	0.0319
6	Comilla	***2.26***	19.14	303.40	***1.90***	742.01	25.54	0.0021	0.0175	0.2773	0.0017	0.6781	0.0233
7	Cox's Bazar	***1.45***	10.83	182.92	***3.11***	391.18	***2.71***	0.0025	0.0183	0.3089	0.0053	0.6605	0.0046
8	Dhaka	16.20	***5.31***	191.09	16.24	385.53	15.17	0.0257	0.0084	0.3035	0.0258	0.6124	0.0241
9	Dinajpur	***3.26***	***1.50***	140.91	***2.23***	371.25	***2.79***	0.0257	0.0084	0.3035	0.0258	0.6124	0.0241
10	Faridpur	12.73	8.50	303.40	6.69	1052.86	18.18	0.0062	0.0029	0.2700	0.0043	0.7113	0.0053
11	Feni	***3.35***	***5.58***	216.38	***3.06***	670.45	***4.49***	0.0091	0.0061	0.2163	0.0048	0.7508	0.0130
12	Hatiya	6.10	8.08	257.43	***3.53***	836.61	14.12	0.0037	0.0062	0.2395	0.0034	0.7422	0.0050
13	Ishurdi	***2.86***	***2.67***	173.52	***2.39***	472.51	***2.10***	0.0054	0.0072	0.2287	0.0031	0.7431	0.0125
14	Jessore	***2.51***	13.59	185.72	***5.38***	276.80	***1.77***	0.0044	0.0041	0.2645	0.0036	0.7202	0.0032
15	Khepupara	***2.51***	13.59	185.72	***5.38***	276.80	***1.77***	0.0052	0.0280	0.3823	0.0111	0.5698	0.0037
16	Khulna	***0.92***	7.60	229.93	***2.94***	730.89	***1.68***	0.0052	0.0280	0.3823	0.0111	0.5698	0.0037
17	Kutubdia	***1.35***	14.00	239.99	***1.86***	592.72	***0.44***	0.0009	0.0078	0.2361	0.0030	0.7504	0.0017
18	Madaripur	***1.26***	***3.05***	121.34	***1.24***	341.23	7.02	0.0016	0.0165	0.2822	0.0022	0.6970	0.0005
19	M.Court	***1.70***	11.42	177.84	***1.46***	393.21	24.54	0.0028	0.0187	0.2915	0.0024	0.6444	0.0402
20	Mongla	11.92	8.25	339.92	12.73	2565.16	19.64	0.0027	0.0064	0.2554	0.0026	0.7182	0.0148
21	Mymensingh	***2.38***	12.90	189.97	9.60	440.72	***1.03***	0.0040	0.0028	0.1149	0.0043	0.8673	0.0066
22	Patuakhali	***3.90***	***3.92***	126.25	***3.96***	373.22	***5.05***	0.0036	0.0196	0.2893	0.0146	0.6712	0.0016
23	Rajshahi	***0.33***	12.90	219.09	***0.60***	438.19	***2.77***	0.0076	0.0076	0.2445	0.0077	0.7229	0.0098
24	Rangamati	15.46	12.09	257.45	11.76	708.12	30.36	0.0005	0.0191	0.3251	0.0009	0.6503	0.0041
25	Rangpur	***1.11***	8.07	179.80	***2.71***	323.57	***1.06***	0.0149	0.0117	0.2487	0.0114	0.6840	0.0293
26	Sandwip	***2.33***	6.18	185.64	***1.60***	493.74	***1.90***	0.0021	0.0156	0.3482	0.0053	0.6267	0.0021
27	Satkhira	***2.25***	***4.80***	165.01	***3.78***	406.20	7.12	0.0034	0.0089	0.2685	0.0023	0.7141	0.0028
28	Shitakunda	6.06	10.83	145.49	***5.17***	303.64	***2.75***	0.0038	0.0081	0.2801	0.0064	0.6895	0.0121
29	Srimongol	6.06	10.83	145.49	***5.17***	303.64	***2.75***	0.0128	0.0228	0.3070	0.0109	0.6407	0.0058
30	Sylhet	7.12	21.17	110.53	41.75	116.44	99211.82	0.0128	0.0228	0.3070	0.0109	0.6407	0.0058
31	Tangail	***3.59***	13.91	208.74	***2.97***	497.30	10.31	0.0001	0.0002	0.0011	0.0004	0.0012	0.9970
32	Teknaf	9.65	27.72	316.22	7.61	729.12	24.08	0.0001	0.0002	0.0011	0.0004	0.0012	0.9970
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1977	0.4149	8.2954	0.2147	20.1735	2.7038

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B112. Determination of Best Fit Distribution

Chi-square values of Bright Sunshine Hour Data for different probability distributions

Average Post-Monsoon(Nov-Feb)

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	1	3	5	2	6	4
	Comparison	**1.00**	1.95	36.58	1.43	55.36	25.30
		Normal	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***5.17***	17.36	283.89	8.86	433.58	55.78
2	Bhola	7.19	15.41	198.21	***2.03***	291.28	***5.05***
3	Bogra	9.45	14.50	173.11	11.62	177.38	607.10
4	Chandpur	***2.17***	11.64	188.87	***3.69***	292.88	9.34
5	Chittagong	***2.51***	6.00	189.50	***1.65***	301.63	***5.21***
6	Comilla	13.96	23.56	273.18	16.20	359.14	278.21
7	Cox's Bazar	***1.91***	14.86	275.66	***0.73***	406.68	***2.68***
8	Dhaka	10.31	6.64	183.74	14.49	258.09	23.67
9	Dinajpur	***1.50***	***4.95***	196.26	***1.00***	470.50	***1.88***
10	Faridpur	7.61	15.91	244.44	9.54	374.11	97.62
11	Feni	28.75	26.78	232.18	16.34	253.49	16435.81
12	Hatiya	***2.83***	20.26	284.22	9.62	446.95	42.26
13	Ishurdi	***2.14***	12.43	267.75	***1.99***	526.03	17.22
14	Jessore	***1.93***	14.50	251.26	6.72	422.18	50.85
15	Khepupara	***1.93***	14.50	251.26	6.72	422.18	50.85
16	Khulna	13.83	13.08	272.99	7.55	486.08	184.59
17	Kutubdia	13.65	29.75	253.45	22.95	252.61	3.11E+06
18	Madaripur	***0.76***	***5.00***	122.42	***4.87***	200.53	***1.73***
19	M.Court	***0.56***	7.22	161.29	***3.76***	238.58	***3.08***
20	Mongla	10.84	***3.71***	94.08	22.97	190.61	7.77
21	Mymensingh	***3.86***	11.29	188.44	8.33	255.02	937.88
22	Patuakhali	8.57	6.35	174.37	***4.91***	257.88	6.46
23	Rajshahi	***3.43***	19.86	414.54	***4.12***	906.25	89.50
24	Rangamati	***5.50***	***0.67***	154.16	***3.73***	246.03	***3.31***
25	Rangpur	***3.53***	24.86	199.89	7.59	188.36	98.96
26	Sandwip	***2.90***	***3.05***	152.07	***2.66***	255.31	6.31
27	Satkhira	***4.08***	12.25	258.37	***0.67***	464.95	11.77
28	Shitakunda	***2.31***	***4.50***	68.83	***4.49***	54.92	***3.07***
29	Srimongol	***2.31***	***4.50***	68.83	***4.49***	54.92	***3.07***
30	Sylhet	22.34	28.79	185.15	156.45	129.56	1.14E+09
31	Tangail	***4.28***	14.95	247.79	6.21	443.71	63.13
32	Teknaf	6.84	6.29	249.39	***0.35***	419.34	8.12
	Critical Chi Square Value (95% Confidence Level)	5.99	5.99	7.81	5.99	7.81	5.99

	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	0.0064	0.0216	0.3528	0.0110	0.5389	0.0693
2	0.0138	0.0297	0.3818	0.0039	0.5611	0.0097
3	0.0095	0.0146	0.1743	0.0117	0.1786	0.6113
4	0.0043	0.0229	0.3714	0.0073	0.5759	0.0184
5	0.0050	0.0118	0.3741	0.0033	0.5955	0.0103
6	0.0145	0.0244	0.2833	0.0168	0.3725	0.2885
7	0.0027	0.0211	0.3924	0.0010	0.5789	0.0038
8	0.0207	0.0134	0.3697	0.0292	0.5194	0.0476
9	0.0207	0.0134	0.3697	0.0292	0.5194	0.0476
10	0.0022	0.0073	0.2903	0.0015	0.6959	0.0028
11	0.0102	0.0212	0.3263	0.0127	0.4993	0.1303
12	0.0017	0.0016	0.0137	0.0010	0.0149	0.9672
13	0.0035	0.0251	0.3526	0.0119	0.5544	0.0524
14	0.0026	0.0150	0.3235	0.0024	0.6356	0.0208
15	0.0026	0.0194	0.3362	0.0090	0.5648	0.0680
16	0.0026	0.0194	0.3362	0.0090	0.5648	0.0680
17	0.0141	0.0134	0.2791	0.0077	0.4970	0.1887
18	0.0000	0.0000	0.0001	0.0000	0.0001	0.9998
19	0.0013	0.0174	0.3891	0.0091	0.5756	0.0074
20	0.0023	0.0149	0.3651	0.0145	0.5980	0.0052
21	0.0329	0.0113	0.2851	0.0696	0.5776	0.0235
22	0.0027	0.0080	0.1341	0.0059	0.1815	0.6676
23	0.0187	0.0138	0.3803	0.0107	0.5624	0.0141
24	0.0024	0.0138	0.2883	0.0029	0.6303	0.0623
25	0.0133	0.0016	0.3729	0.0090	0.5951	0.0080
26	0.0067	0.0475	0.3821	0.0145	0.3600	0.1891
27	0.0069	0.0072	0.3601	0.0063	0.6046	0.0149
28	0.0054	0.0163	0.3435	0.0009	0.6182	0.0157
29	0.0167	0.0326	0.4983	0.0325	0.3976	0.0222
30	0.0167	0.0326	0.4983	0.0325	0.3976	0.0222
31	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
32	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
	0.2631	0.5124	9.6248	0.3770	14.5657	6.6570

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B113. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

January

								Scaling					
								Rank	1	3	6	2	5	4
								Comparison	**1.00**	1.71	56.21	1.03	9.58	3.65
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***5.88***	16.00	513.87	8.38	97.41	53.80		0.0085	0.0230	0.7390	0.0120	0.1401	0.0774
2	Bhola	***3.31***	16.00	503.84	***3.64***	95.44	22.24		0.0051	0.0248	0.7818	0.0057	0.1481	0.0345
3	Bogra	6.06	10.83	408.58	12.85	78.10	***2.30***		0.0117	0.0209	0.7877	0.0248	0.1506	0.0044
4	Chandpur	***0.43***	10.14	466.25	***1.30***	104.83	7.82		0.0007	0.0172	0.7892	0.0022	0.1774	0.0132
5	Chittagong	***1.45***	15.31	450.08	***1.60***	82.23	9.08		0.0026	0.0274	0.8041	0.0029	0.1469	0.0162
6	Comilla	***1.46***	9.10	453.66	***3.73***	99.05	11.44		0.0025	0.0157	0.7843	0.0064	0.1712	0.0198
7	Cox's Bazar	***5.77***	15.66	500.70	***3.53***	116.23	***3.88***		0.0089	0.0242	0.7754	0.0055	0.1800	0.0060
8	Dhaka	***4.67***	21.17	560.23	***1.51***	127.76	18.33		0.0064	0.0289	0.7636	0.0021	0.1741	0.0250
9	Dinajpur	9.57	***2.55***	230.76	11.43	20.58	13.46		0.0064	0.0289	0.7636	0.0021	0.1741	0.0250
10	Faridpur	8.14	12.55	573.81	8.32	150.54	9.70		0.0332	0.0088	0.8003	0.0396	0.0714	0.0467
11	Feni	***2.53***	8.76	389.14	***2.27***	67.11	9.64		0.0107	0.0164	0.7520	0.0109	0.1973	0.0127
12	Hatiya	***2.86***	6.34	318.08	***2.61***	46.76	7.12		0.0053	0.0183	0.8116	0.0047	0.1400	0.0201
13	Ishurdi	7.37	***4.97***	390.13	6.43	87.56	***5.65***		0.0075	0.0165	0.8288	0.0068	0.1218	0.0185
14	Jessore	***3.00***	9.10	400.56	***5.07***	72.58	6.98		0.0147	0.0099	0.7770	0.0128	0.1744	0.0113
15	Khepupara	7.43	23.59	296.66	***2.19***	17.20	11.74		0.0060	0.0183	0.8055	0.0102	0.1459	0.0140
16	Khulna	***2.49***	9.79	538.03	***2.38***	145.48	***4.38***		0.0207	0.0657	0.8268	0.0061	0.0479	0.0327
17	Kutubdia	***2.27***	11.86	374.82	***3.01***	55.19	15.13		0.0035	0.0139	0.7658	0.0034	0.2071	0.0062
18	Madaripur	15.40	***3.59***	260.49	6.71	34.90	17.01		0.0049	0.0257	0.8108	0.0065	0.1194	0.0327
19	M.Court	19.64	22.21	505.89	16.27	85.74	86.86		0.0267	0.0301	0.6868	0.0221	0.1164	0.1179
20	Mongla	***3.89***	***5.50***	260.87	6.64	42.79	18.96		0.0455	0.0106	0.7705	0.0198	0.1032	0.0503
21	Mymensingh	6.90	6.69	264.45	7.06	24.73	10.36		0.0115	0.0162	0.7703	0.0196	0.1264	0.0560
22	Patuakhali	***3.74***	17.03	334.36	***5.34***	28.94	227.40		0.0215	0.0209	0.8259	0.0221	0.0772	0.0324
23	Rajshahi	***0.97***	11.17	423.53	***1.66***	78.91	***3.42***		0.0061	0.0276	0.5421	0.0087	0.0469	0.3687
24	Rangamati	***4.36***	19.10	515.52	***3.51***	96.48	6.61		0.0019	0.0215	0.8150	0.0032	0.1518	0.0066
25	Rangpur	9.27	6.69	398.11	17.97	70.33	100.16		0.0068	0.0296	0.7985	0.0054	0.1495	0.0102
26	Sandwip	***5.64***	9.10	369.67	9.01	54.50	120.79		0.0154	0.0111	0.6607	0.0298	0.1167	0.1662
27	Satkhira	16.79	***4.97***	295.59	9.15	39.84	21.21		0.0099	0.0160	0.6500	0.0158	0.0958	0.2124
28	Shitakunda	14.30	6.34	253.13	18.29	27.38	17.00		0.0433	0.0128	0.7627	0.0236	0.1028	0.0547
29	Srimongol	24.43	28.41	657.73	33.73	132.59	45.70		0.0425	0.0189	0.7523	0.0544	0.0814	0.0505
30	Sylhet	***4.96***	23.93	403.76	***5.96***	46.19	***1.28***		0.0265	0.0308	0.7129	0.0366	0.1437	0.0495
31	Tangail	6.71	13.91	532.82	***5.93***	147.06	31.92		0.0102	0.0492	0.8306	0.0123	0.0950	0.0026
32	Teknaf	***5.59***	***3.24***	166.06	***4.51***	8.20	6.20		0.0102	0.0492	0.8306	0.0123	0.0950	0.0026
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.4372	0.7492	24.5764	0.4503	4.1897	1.5973

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B114. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

February

								Scaling					
								Rank	1	3	6	2	5	4
								Comparison	**1.00**	1.87	65.99	1.34	12.50	4.71
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***0.91***	9.10	528.80	***2.98***	145.47	8.44		0.0013	0.0131	0.7601	0.0043	0.2091	0.0121
2	Bhola	***5.56***	12.90	496.60	8.89	113.51	***4.16***		0.0087	0.0201	0.7740	0.0139	0.1769	0.0065
3	Bogra	***4.95***	***4.97***	315.45	***3.48***	51.71	19.25		0.0124	0.0124	0.7890	0.0087	0.1293	0.0481
4	Chandpur	8.66	6.00	659.71	6.52	270.70	***4.56***		0.0091	0.0063	0.6900	0.0068	0.2831	0.0048
5	Chittagong	***2.90***	10.48	371.20	6.37	67.22	***1.24***		0.0063	0.0228	0.8080	0.0139	0.1463	0.0027
6	Comilla	***1.05***	7.38	489.22	***4.21***	129.63	6.70		0.0016	0.0116	0.7666	0.0066	0.2031	0.0105
7	Cox's Bazar	***0.77***	11.52	450.40	***3.06***	98.52	11.70		0.0013	0.0200	0.7820	0.0053	0.1710	0.0203
8	Dhaka	***3.72***	***3.24***	423.34	8.15	131.77	***3.94***		0.0065	0.0056	0.7373	0.0142	0.2295	0.0069
9	Dinajpur	19.88	16.00	271.08	11.58	24.84	22.04		0.0065	0.0056	0.7373	0.0142	0.2295	0.0069
10	Faridpur	***0.74***	10.48	437.49	***2.57***	92.06	***5.18***		0.0544	0.0438	0.7418	0.0317	0.0680	0.0603
11	Feni	***1.81***	***4.62***	424.92	***4.38***	98.93	***2.77***		0.0014	0.0191	0.7976	0.0047	0.1678	0.0095
12	Hatiya	***3.51***	***4.62***	374.22	11.30	77.28	***3.48***		0.0034	0.0086	0.7907	0.0081	0.1841	0.0052
13	Ishurdi	***5.80***	9.10	283.71	6.83	30.42	13.50		0.0074	0.0097	0.7888	0.0238	0.1629	0.0073
14	Jessore	***5.21***	11.17	354.75	14.33	49.52	13.35		0.0166	0.0261	0.8121	0.0195	0.0871	0.0387
15	Khepupara	***3.03***	20.14	343.33	***2.60***	30.48	8.11		0.0116	0.0249	0.7913	0.0320	0.1105	0.0298
16	Khulna	***1.00***	16.34	606.46	***3.91***	168.23	***0.48***		0.0074	0.0494	0.8422	0.0064	0.0748	0.0199
17	Kutubdia	***1.18***	8.41	381.70	***2.76***	64.07	***1.30***		0.0013	0.0205	0.7615	0.0049	0.2112	0.0006
18	Madaripur	6.03	***1.17***	217.57	9.71	18.17	7.25		0.0026	0.0183	0.8308	0.0060	0.1395	0.0028
19	M.Court	***3.43***	13.24	351.48	***5.16***	42.62	24.09		0.0078	0.0301	0.7988	0.0117	0.0969	0.0548
20	Mongla	16.00	9.50	472.74	11.33	164.57	22.93		0.0232	0.0045	0.8371	0.0374	0.0699	0.0279
21	Mymensingh	24.17	44.28	346.48	15.16	24.35	139.87		0.0229	0.0136	0.6782	0.0163	0.2361	0.0329
22	Patuakhali	***2.91***	15.66	314.68	***5.02***	25.85	222.05		0.0407	0.0745	0.5830	0.0255	0.0410	0.2354
23	Rajshahi	***3.29***	8.76	358.92	***5.07***	58.44	6.44		0.0050	0.0267	0.5368	0.0086	0.0441	0.3788
24	Rangamati	6.82	***2.21***	446.96	8.62	120.06	8.32		0.0075	0.0199	0.8140	0.0115	0.1325	0.0146
25	Rangpur	***3.05***	13.93	356.68	7.57	43.81	79.27		0.0115	0.0037	0.7538	0.0145	0.2025	0.0140
26	Sandwip	7.27	6.69	378.87	15.38	67.99	27.10		0.0060	0.0276	0.7073	0.0150	0.0869	0.1572
27	Satkhira	8.59	7.72	232.50	13.24	17.29	34.88		0.0144	0.0133	0.7528	0.0306	0.1351	0.0539
28	Shitakunda	***5.51***	17.03	282.14	***3.30***	19.04	52.86		0.0273	0.0246	0.7399	0.0421	0.0550	0.1110
29	Srimongol	8.14	25.31	384.93	11.91	38.35	107.49		0.0145	0.0448	0.7427	0.0087	0.0501	0.1391
30	Sylhet	***3.09***	***5.66***	420.34	6.40	102.44	6.66		0.0141	0.0439	0.6681	0.0207	0.0666	0.1866
31	Tangail	***2.74***	9.82	374.17	6.87	81.68	14.69		0.0057	0.0104	0.7719	0.0118	0.1881	0.0122
32	Teknaf	***4.49***	17.72	176.04	6.72	***4.35***	***4.61***		0.0057	0.0104	0.7719	0.0118	0.1881	0.0122
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.3660	0.6861	24.1571	0.4910	4.5765	1.7233

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B115. Analysis to Find The Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

March

							Scaling						
							Rank	1	3	6	2	4	5
							Comparison	**1.00**	1.92	65.71	1.34	7.31	10.51
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***1.03***	11.52	423.84	***2.79***	77.40	13.44	0.0019	0.0217	0.7997	0.0053	0.1460	0.0254
2	Bhola	***0.42***	10.14	365.87	***0.76***	54.66	14.15	0.0009	0.0227	0.8203	0.0017	0.1226	0.0317
3	Bogra	***2.98***	9.45	207.58	***2.30***	11.18	11.00	0.0122	0.0386	0.8490	0.0094	0.0457	0.0450
4	Chandpur	***1.58***	9.45	376.59	***2.27***	66.63	***1.96***	0.0034	0.0206	0.8214	0.0050	0.1453	0.0043
5	Chittagong	***4.50***	***2.55***	268.72	6.00	31.15	6.49	0.0141	0.0080	0.8413	0.0188	0.0975	0.0203
6	Comilla	10.09	7.38	437.76	14.03	99.40	19.18	0.0172	0.0126	0.7447	0.0239	0.1691	0.0326
7	Cox's Bazar	***2.09***	8.07	374.93	7.58	61.54	6.22	0.0045	0.0175	0.8143	0.0165	0.1337	0.0135
8	Dhaka	***4.90***	6.34	256.44	***4.53***	26.35	7.43	0.0160	0.0207	0.8380	0.0148	0.0861	0.0243
9	Dinajpur	***2.82***	8.76	135.96	***3.23***	***2.12***	10.82	0.0160	0.0207	0.8380	0.0148	0.0861	0.0243
10	Faridpur	***0.83***	11.86	273.66	***3.53***	24.71	12.72	0.0172	0.0535	0.8305	0.0197	0.0130	0.0661
11	Feni	169.34	88.41	281.32	***4.48***	100.01	5.72E+29	0.0025	0.0362	0.8361	0.0108	0.0755	0.0388
12	Hatiya	***1.18***	14.28	333.99	***4.09***	34.07	17.38	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
13	Ishurdi	***1.30***	***5.31***	166.10	***2.28***	***5.26***	***5.01***	0.0029	0.0352	0.8247	0.0101	0.0841	0.0429
14	Jessore	***3.79***	9.79	260.28	***3.26***	22.74	37.58	0.0070	0.0287	0.8966	0.0123	0.0284	0.0270
15	Khepupara	***1.21***	***5.66***	228.10	***0.43***	14.37	***3.58***	0.0112	0.0290	0.7713	0.0097	0.0674	0.1114
16	Khulna	***0.70***	9.79	301.85	***1.02***	35.44	***2.88***	0.0048	0.0223	0.9003	0.0017	0.0567	0.0141
17	Kutubdia	***3.56***	16.00	569.23	***3.96***	127.47	7.06	0.0020	0.0278	0.8583	0.0029	0.1008	0.0082
18	Madaripur	9.44	***3.24***	210.25	8.96	18.25	12.43	0.0049	0.0220	0.7827	0.0054	0.1753	0.0097
19	M.Court	14.93	21.17	396.01	33.67	44.76	5.76E+07	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
20	Mongla	***3.27***	***1.50***	276.83	***4.53***	70.12	***4.85***	0.0360	0.0123	0.8008	0.0341	0.0695	0.0473
21	Mymensingh	15.18	11.52	216.79	18.72	16.07	26.82	0.0091	0.0042	0.7666	0.0125	0.1942	0.0134
22	Patuakhali	***4.45***	18.76	365.68	8.88	39.90	17.21	0.0497	0.0377	0.7106	0.0614	0.0527	0.0879
23	Rajshahi	***1.36***	6.69	192.45	***3.11***	9.93	***3.61***	0.0098	0.0412	0.8039	0.0195	0.0877	0.0378
24	Rangamati	***4.99***	***5.31***	273.20	7.90	34.57	19.04	0.0063	0.0308	0.8862	0.0143	0.0457	0.0166
25	Rangpur	***2.90***	7.38	241.26	***2.34***	19.72	29.91	0.0145	0.0154	0.7919	0.0229	0.1002	0.0552
26	Sandwip	***5.24***	6.00	334.70	12.89	47.19	17.29	0.0096	0.0243	0.7949	0.0077	0.0650	0.0985
27	Satkhira	***5.34***	7.72	205.65	9.41	10.69	54.59	0.0124	0.0142	0.7907	0.0304	0.1115	0.0409
28	Shitakunda	***4.48***	***2.55***	243.57	6.37	25.78	9.49	0.0182	0.0263	0.7009	0.0321	0.0364	0.1861
29	Srimongol	***5.51***	24.97	291.98	8.82	15.70	546.63	0.0153	0.0087	0.8335	0.0218	0.0882	0.0325
30	Sylhet	***5.20***	***2.55***	224.89	***5.28***	21.86	8.57	0.0062	0.0279	0.3267	0.0099	0.0176	0.6117
31	Tangail	***3.51***	***1.64***	285.08	***4.53***	57.51	***3.16***	0.0194	0.0095	0.8380	0.0197	0.0815	0.0319
32	Teknaf	***4.43***	14.97	239.01	***1.40***	15.04	***0.79***	0.0194	0.0095	0.8380	0.0197	0.0815	0.0319
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3645	0.7003	23.9502	0.4887	2.6648	3.8315

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B116. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

April

								Scaling					
								Rank	1	2	6	3	5	4
								Comparison	**1.00**	1.14	50.04	1.17	11.76	7.51
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	6.79	24.28	925.85	13.83	314.88	14.59		0.0052	0.0187	0.7121	0.0106	0.2422	0.0112
2	Bhola	***5.98***	24.97	809.86	***3.62***	231.98	217.24		0.0046	0.0193	0.6260	0.0028	0.1793	0.1679
3	Bogra	6.88	***3.59***	225.02	6.59	20.69	10.21		0.0252	0.0131	0.8243	0.0241	0.0758	0.0374
4	Chandpur	***1.51***	16.34	638.24	***1.17***	169.50	***1.67***		0.0018	0.0197	0.7704	0.0014	0.2046	0.0020
5	Chittagong	9.55	6.69	847.70	9.27	413.34	11.64		0.0074	0.0052	0.6530	0.0071	0.3184	0.0090
6	Comilla	9.22	***2.55***	846.57	6.81	421.84	12.26		0.0071	0.0020	0.6516	0.0052	0.3247	0.0094
7	Cox's Bazar	***1.83***	16.69	764.62	***4.13***	258.95	10.65		0.0017	0.0158	0.7235	0.0039	0.2450	0.0101
8	Dhaka	***2.34***	6.34	446.70	***2.78***	113.24	6.98		0.0040	0.0110	0.7723	0.0048	0.1958	0.0121
9	Dinajpur	25.01	6.69	145.00	29.25	24.65	22.05		0.0040	0.0110	0.7723	0.0048	0.1958	0.0121
10	Faridpur	***0.61***	11.52	358.16	***1.45***	51.57	16.23		0.0990	0.0265	0.5739	0.1158	0.0976	0.0873
11	Feni	***3.42***	9.45	641.87	***4.06***	209.73	18.72		0.0014	0.0262	0.8149	0.0033	0.1173	0.0369
12	Hatiya	***4.13***	19.79	711.84	***3.12***	200.50	13490.86		0.0039	0.0106	0.7234	0.0046	0.2364	0.0211
13	Ishurdi	23.63	6.00	223.93	18.75	27.42	30.53		0.0003	0.0014	0.0493	0.0002	0.0139	0.9349
14	Jessore	7.38	***3.93***	316.26	11.93	50.65	14.98		0.0715	0.0182	0.6780	0.0568	0.0830	0.0924
15	Khepupara	***1.60***	21.17	447.17	***0.55***	60.77	***5.89***		0.0182	0.0097	0.7806	0.0295	0.1250	0.0370
16	Khulna	***1.57***	7.38	375.26	***2.48***	52.00	***3.71***		0.0030	0.0394	0.8325	0.0010	0.1131	0.0110
17	Kutubdia	16.96	19.79	1162.56	16.68	550.48	58.63		0.0035	0.0167	0.8483	0.0056	0.1175	0.0084
18	Madaripur	17.19	9.45	333.61	10.96	59.70	12.63		0.0093	0.0108	0.6370	0.0091	0.3016	0.0321
19	M.Court	***0.95***	7.72	513.09	***4.41***	139.50	11.60		0.0014	0.0114	0.7576	0.0065	0.2060	0.0171
20	Mongla	***2.59***	9.50	491.82	6.45	166.22	153.81		0.0388	0.0213	0.7522	0.0247	0.1346	0.0285
21	Mymensingh	15.07	11.52	285.25	28.03	26.29	128.55		0.0031	0.0114	0.5923	0.0078	0.2002	0.1852
22	Patuakhali	***1.58***	21.17	570.46	***1.37***	111.36	***5.85***		0.0305	0.0233	0.5766	0.0567	0.0531	0.2599
23	Rajshahi	***4.39***	6.69	173.11	6.48	6.25	24.24		0.0022	0.0297	0.8014	0.0019	0.1565	0.0082
24	Rangamati	***1.41***	6.69	391.49	8.82	81.13	***4.46***		0.0198	0.0302	0.7827	0.0293	0.0283	0.1096
25	Rangpur	***3.80***	***4.62***	237.83	8.01	20.26	***5.67***		0.0029	0.0135	0.7925	0.0179	0.1642	0.0090
26	Sandwip	***4.25***	18.76	719.25	***4.30***	201.41	118.52		0.0136	0.0165	0.8488	0.0286	0.0723	0.0202
27	Satkhira	11.88	11.52	354.56	***4.01***	51.61	26.40		0.0040	0.0176	0.6744	0.0040	0.1889	0.1111
28	Shitakunda	***2.24***	***5.31***	475.86	9.01	125.77	10.97		0.0258	0.0250	0.7708	0.0087	0.1122	0.0574
29	Srimongol	7.44	34.28	387.17	7.66	31.60	6058.38		0.0036	0.0084	0.7564	0.0143	0.1999	0.0174
30	Sylhet	8.79	6.00	557.47	8.52	182.73	9.61		0.0011	0.0053	0.0593	0.0012	0.0048	0.9283
31	Tangail	6.45	6.64	330.14	10.29	70.95	95.75		0.0114	0.0078	0.7211	0.0110	0.2363	0.0124
32	Teknaf	***3.71***	14.97	535.00	6.28	121.18	15.53		0.0114	0.0078	0.7211	0.0110	0.2363	0.0124
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.4407	0.5045	22.0507	0.5143	5.1807	3.3091

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B117. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

May

								Scaling					
								Rank	1	3	6	2	5	4
								Comparison	**1.00**	2.90	146.01	1.38	40.65	28.84
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	8.39	16.69	818.53	7.77	282.52	281.26		0.0059	0.0118	0.5784	0.0055	0.1996	0.1987
2	Bhola	***1.84***	9.10	857.61	***2.23***	360.89	***1.56***		0.0015	0.0074	0.6954	0.0018	0.2926	0.0013
3	Bogra	***0.50***	8.76	403.41	***1.76***	70.15	***2.97***		0.0010	0.0180	0.8274	0.0036	0.1439	0.0061
4	Chandpur	***4.40***	***3.93***	874.02	6.54	490.69	***4.80***		0.0032	0.0028	0.6313	0.0047	0.3544	0.0035
5	Chittagong	***5.16***	***4.28***	717.86	***4.36***	289.89	***5.61***		0.0050	0.0042	0.6989	0.0042	0.2822	0.0055
6	Comilla	***3.14***	13.59	744.57	***2.09***	197.06	***2.72***		0.0033	0.0141	0.7730	0.0022	0.2046	0.0028
7	Cox's Bazar	***5.20***	***4.28***	559.57	14.06	174.30	15.99		0.0067	0.0055	0.7235	0.0182	0.2254	0.0207
8	Dhaka	10.21	21.17	623.61	***4.75***	147.33	28.01		0.0122	0.0254	0.7468	0.0057	0.1764	0.0335
9	Dinajpur	***2.01***	12.90	295.15	***1.48***	23.61	26.77		0.0122	0.0254	0.7468	0.0057	0.1764	0.0335
10	Faridpur	7.80	14.97	637.19	***5.77***	182.77	10.26		0.0055	0.0356	0.8155	0.0041	0.0652	0.0740
11	Feni	***2.87***	***5.31***	871.65	***2.20***	363.33	***3.47***		0.0091	0.0174	0.7420	0.0067	0.2128	0.0119
12	Hatiya	***0.44***	16.34	682.90	***2.66***	190.94	***2.52***		0.0023	0.0043	0.6980	0.0018	0.2909	0.0028
13	Ishurdi	***2.82***	6.00	314.78	***5.83***	45.90	8.31		0.0005	0.0182	0.7623	0.0030	0.2132	0.0028
14	Jessore	***1.90***	12.90	685.19	6.85	233.76	***5.85***		0.0073	0.0156	0.8205	0.0152	0.1196	0.0216
15	Khepupara	***3.47***	28.07	744.56	***2.31***	180.61	85.32		0.0020	0.0136	0.7240	0.0072	0.2470	0.0062
16	Khulna	***0.35***	8.76	636.21	***2.93***	207.79	***3.13***		0.0033	0.0269	0.7130	0.0022	0.1729	0.0817
17	Kutubdia	***4.02***	14.97	768.16	7.84	262.63	***3.40***		0.0004	0.0102	0.7405	0.0034	0.2418	0.0036
18	Madaripur	***1.91***	***3.93***	392.47	9.03	81.07	11.22		0.0038	0.0141	0.7240	0.0074	0.2475	0.0032
19	M.Court	6.40	19.79	730.81	8.93	206.27	96715.16		0.0001	0.0002	0.0075	0.0001	0.0021	0.9900
20	Mongla	6.43	***3.50***	628.76	***3.66***	302.65	10.24		0.0038	0.0079	0.7855	0.0181	0.1623	0.0225
21	Mymensingh	***0.59***	13.59	475.77	***4.12***	89.88	67.44		0.0067	0.0037	0.6582	0.0038	0.3168	0.0107
22	Patuakhali	16.29	25.31	730.34	8.30	175.09	2.76E+08		0.0009	0.0209	0.7304	0.0063	0.1380	0.1035
23	Rajshahi	***3.56***	***2.90***	318.71	6.14	49.50	7.19		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
24	Rangamati	***0.44***	11.52	567.77	6.71	146.99	***1.54***		0.0092	0.0075	0.8214	0.0158	0.1276	0.0185
25	Rangpur	***5.78***	19.10	543.95	***4.99***	105.52	334.59		0.0006	0.0157	0.7725	0.0091	0.2000	0.0021
26	Sandwip	6.37	***2.55***	724.55	***5.07***	305.77	9.35		0.0057	0.0188	0.5365	0.0049	0.1041	0.3300
27	Satkhira	10.70	19.79	459.15	20.24	72.86	2.75E+06		0.0060	0.0024	0.6877	0.0048	0.2902	0.0089
28	Shitakunda	***2.76***	10.83	578.72	10.51	156.92	119.81		0.0000	0.0000	0.0002	0.0000	0.0000	0.9998
29	Srimongol	11.92	31.52	686.81	11.77	140.23	36.61		0.0031	0.0123	0.6580	0.0120	0.1784	0.1362
30	Sylhet	***3.60***	9.10	551.03	***3.44***	121.80	***1.74***		0.0130	0.0343	0.7475	0.0128	0.1526	0.0398
31	Tangail	***2.56***	10.27	467.02	7.20	126.76	30.83		0.0052	0.0132	0.7978	0.0050	0.1763	0.0025
32	Teknaf	***0.85***	14.28	349.69	***0.45***	35.23	***2.42***		0.0052	0.0132	0.7978	0.0050	0.1763	0.0025
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.1449	0.4205	21.1621	0.2003	5.8915	4.1806

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B118. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

June

								Scaling						
								Rank	1	3	6	2	5	4
								Comparison	**1.00**	1.93	197.11	1.07	93.38	15.07
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***0.98***	10.83	1061.10	***0.62***	467.58	***0.20***		0.0006	0.0070	0.6884	0.0004	0.3034	0.0001
2	Bhola	***1.42***	12.90	1392.94	***2.09***	774.80	***1.26***		0.0006	0.0059	0.6374	0.0010	0.3545	0.0006
3	Bogra	8.07	13.93	1032.62	***3.50***	482.48	303.61		0.0044	0.0076	0.5599	0.0019	0.2616	0.1646
4	Chandpur	6.61	***3.24***	905.20	***5.28***	507.98	***5.04***		0.0046	0.0023	0.6315	0.0037	0.3544	0.0035
5	Chittagong	***3.45***	15.66	802.56	***2.57***	278.98	***1.94***		0.0031	0.0142	0.7262	0.0023	0.2524	0.0018
6	Comilla	***1.92***	7.03	1008.07	***1.27***	520.75	6.67		0.0012	0.0046	0.6522	0.0008	0.3369	0.0043
7	Cox's Bazar	***2.49***	6.34	808.94	***2.68***	330.68	***2.48***		0.0022	0.0055	0.7012	0.0023	0.2866	0.0021
8	Dhaka	***5.01***	***2.55***	1096.76	***5.37***	702.11	***5.02***		0.0028	0.0014	0.6037	0.0030	0.3865	0.0028
9	Dinajpur	9.38	14.62	923.05	9.58	390.06	48.46		0.0028	0.0014	0.6037	0.0030	0.3865	0.0028
10	Faridpur	***4.69***	***3.59***	1354.92	***4.50***	1100.46	***4.20***		0.0067	0.0105	0.6616	0.0069	0.2796	0.0347
11	Feni	***3.81***	6.69	1135.19	***1.80***	702.46	***3.18***		0.0019	0.0015	0.5480	0.0018	0.4451	0.0017
12	Hatiya	***5.70***	8.07	994.98	***2.41***	526.64	***4.78***		0.0021	0.0036	0.6126	0.0010	0.3791	0.0017
13	Ishurdi	***2.10***	9.10	674.07	13.53	225.86	24.62		0.0037	0.0052	0.6450	0.0016	0.3414	0.0031
14	Jessore	***4.69***	8.41	1002.17	***4.31***	503.03	11.41		0.0022	0.0096	0.7101	0.0143	0.2379	0.0259
15	Khepupara	***1.67***	10.48	1028.10	***2.49***	493.77	***4.14***		0.0031	0.0055	0.6533	0.0028	0.3279	0.0074
16	Khulna	***3.93***	***3.93***	956.87	***3.18***	464.23	***2.47***		0.0011	0.0068	0.6673	0.0016	0.3205	0.0027
17	Kutubdia	11.97	***4.62***	1078.01	10.82	575.84	8.24		0.0027	0.0027	0.6670	0.0022	0.3236	0.0017
18	Madaripur	***1.75***	13.59	654.61	6.48	173.13	9.20		0.0071	0.0027	0.6381	0.0064	0.3408	0.0049
19	M.Court	***1.07***	8.41	1076.46	***0.64***	604.03	21.55		0.0006	0.0049	0.6287	0.0004	0.3528	0.0126
20	Mongla	***4.85***	6.00	732.08	***4.13***	351.60	***1.93***		0.0020	0.0158	0.7623	0.0075	0.2016	0.0107
21	Mymensingh	22.15	30.14	823.32	16.01	200.73	3.37E+09		0.0044	0.0055	0.6652	0.0037	0.3195	0.0018
22	Patuakhali	***5.20***	11.86	994.69	***2.50***	398.56	***4.89***		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
23	Rajshahi	15.29	15.66	811.70	19.64	272.19	190.14		0.0037	0.0084	0.7016	0.0018	0.2811	0.0034
24	Rangamati	***3.77***	8.76	981.06	***2.49***	479.87	***5.45***		0.0115	0.0118	0.6128	0.0148	0.2055	0.1435
25	Rangpur	***3.47***	6.00	1303.73	***4.00***	951.82	***2.46***		0.0025	0.0059	0.6622	0.0017	0.3239	0.0037
26	Sandwip	***4.54***	***4.97***	1150.59	***2.08***	709.83	***2.82***		0.0015	0.0026	0.5740	0.0018	0.4190	0.0011
27	Satkhira	***3.50***	13.59	635.07	***4.75***	179.35	10.39		0.0024	0.0026	0.6137	0.0011	0.3786	0.0015
28	Shitakunda	6.20	***1.52***	771.56	6.57	342.04	6.63		0.0041	0.0160	0.7501	0.0056	0.2118	0.0123
29	Srimongol	9.62	21.86	931.09	7.85	324.93	121.94		0.0055	0.0013	0.6801	0.0058	0.3015	0.0058
30	Sylhet	***3.25***	6.69	883.39	***2.23***	308.18	***5.24***		0.0068	0.0154	0.6570	0.0055	0.2293	0.0860
31	Tangail	9.45	24.36	1594.44	10.31	1089.67	3185.15		0.0027	0.0055	0.7307	0.0018	0.2549	0.0043
32	Teknaf	***2.41***	***4.62***	881.58	***1.38***	375.22	***1.15***		0.0027	0.0055	0.7307	0.0018	0.2549	0.0043
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.1034	0.1993	20.3762	0.1103	9.6532	1.5576

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B119. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

July

		Scaling					
	Rank	1	3	6	2	5	4
	Comparison	**1.00**	2.69	274.08	1.12	140.20	4.75

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***2.36***	6.34	1009.01	7.02	522.80	6.58	0.0015	0.0041	0.6493	0.0045	0.3364	0.0042
2	Bhola	***0.87***	10.14	1397.98	***1.99***	864.15	***0.46***	0.0004	0.0045	0.6143	0.0009	0.3797	0.0002
3	Bogra	***3.63***	8.07	882.35	***3.53***	391.24	12.10	0.0028	0.0062	0.6782	0.0027	0.3007	0.0093
4	Chandpur	***1.50***	***5.31***	932.59	***2.42***	494.61	15.22	0.0010	0.0037	0.6424	0.0017	0.3407	0.0105
5	Chittagong	***5.29***	6.00	947.64	***5.26***	455.94	***4.21***	0.0037	0.0042	0.6653	0.0037	0.3201	0.0030
6	Comilla	11.69	***4.62***	1194.08	12.48	749.64	8.52	0.0059	0.0023	0.6028	0.0063	0.3784	0.0043
7	Cox's Bazar	***2.13***	***5.31***	1139.53	***1.81***	681.37	***4.34***	0.0012	0.0029	0.6212	0.0010	0.3714	0.0024
8	Dhaka	***4.67***	***4.97***	798.73	***5.53***	348.08	6.07	0.0040	0.0043	0.6838	0.0047	0.2980	0.0052
9	Dinajpur	***2.51***	***5.66***	913.55	6.27	470.60	18.22	0.0040	0.0043	0.6838	0.0047	0.2980	0.0052
10	Faridpur	***1.25***	12.21	1432.07	***1.67***	948.03	6.67	0.0018	0.0040	0.6448	0.0044	0.3322	0.0129
11	Feni	***3.11***	7.72	918.73	***3.77***	442.96	***1.57***	0.0005	0.0051	0.5962	0.0007	0.3947	0.0028
12	Hatiya	***0.71***	7.38	1289.87	***0.36***	850.48	***3.61***	0.0023	0.0056	0.6668	0.0027	0.3215	0.0011
13	Ishurdi	***2.49***	8.07	826.98	6.75	353.73	14.31	0.0003	0.0034	0.5993	0.0002	0.3951	0.0017
14	Jessore	***0.35***	12.90	1504.77	***0.90***	1051.58	***1.48***	0.0021	0.0067	0.6821	0.0056	0.2918	0.0118
15	Khepupara	***4.81***	9.10	1340.57	6.75	904.50	49.51	0.0001	0.0050	0.5851	0.0003	0.4089	0.0006
16	Khulna	***1.51***	10.14	1321.68	***0.50***	822.94	***0.76***	0.0021	0.0039	0.5790	0.0029	0.3907	0.0214
17	Kutubdia	***2.17***	12.90	1279.02	***2.53***	743.11	***3.37***	0.0007	0.0047	0.6126	0.0002	0.3814	0.0004
18	Madaripur	8.35	6.00	950.24	7.46	477.18	***5.93***	0.0011	0.0063	0.6260	0.0012	0.3637	0.0016
19	M.Court	***2.36***	10.83	1206.94	***0.43***	684.49	15.12	0.0012	0.0056	0.6286	0.0002	0.3565	0.0079
20	Mongla	***1.45***	***4.00***	793.95	***1.40***	467.65	***2.46***	0.0057	0.0041	0.6530	0.0051	0.3279	0.0041
21	Mymensingh	***3.85***	24.62	1006.85	***3.86***	354.44	10.64	0.0011	0.0031	0.6247	0.0011	0.3680	0.0019
22	Patuakhali	***2.02***	26.00	1078.80	***1.23***	380.94	7.70	0.0027	0.0175	0.7170	0.0027	0.2524	0.0076
23	Rajshahi	***5.16***	***5.31***	1193.36	7.31	783.39	14.60	0.0013	0.0174	0.7208	0.0008	0.2545	0.0051
24	Rangamati	10.11	***3.24***	964.24	7.17	561.17	8.91	0.0026	0.0026	0.5940	0.0036	0.3899	0.0073
25	Rangpur	***3.02***	9.45	882.11	***2.96***	381.40	7.91	0.0065	0.0021	0.6202	0.0046	0.3609	0.0057
26	Sandwip	***3.98***	6.69	1075.33	***2.37***	616.43	***4.24***	0.0023	0.0073	0.6855	0.0023	0.2964	0.0061
27	Satkhira	***4.42***	25.66	1309.97	***5.49***	609.85	360.01	0.0023	0.0039	0.6292	0.0014	0.3607	0.0025
28	Shitakunda	7.63	***1.86***	730.78	7.01	309.87	***5.87***	0.0019	0.0111	0.5658	0.0024	0.2634	0.1555
29	Srimongol	***2.78***	10.48	1067.64	***2.52***	539.32	***2.86***	0.0072	0.0018	0.6875	0.0066	0.2915	0.0055
30	Sylhet	***1.82***	21.17	806.62	***2.10***	233.48	26.92	0.0017	0.0064	0.6568	0.0016	0.3318	0.0018
31	Tangail	***5.65***	10.27	1051.20	***5.45***	672.23	13.15	0.0017	0.0194	0.7386	0.0019	0.2138	0.0247
32	Teknaf	13.03	***4.28***	998.36	9.04	527.31	22.54	0.0017	0.0194	0.7386	0.0019	0.2138	0.0247
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0755	0.2029	20.6931	0.0849	10.5849	0.3587

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B120. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

August

		Scaling					
	Rank	2	3	6	1	5	4
	Comparison	1.11	1.83	214.94	**1.00**	108.86	4.35

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***2.22***	7.38	1243.59	***2.35***	533.05	***2.93***	0.0012	0.0041	0.6942	0.0013	0.2975	0.0016
2	Bhola	***3.76***	7.72	1117.01	***3.32***	649.25	***1.63***	0.0021	0.0043	0.6266	0.0019	0.3642	0.0009
3	Bogra	***2.24***	10.48	1224.72	***4.22***	752.24	***2.14***	0.0011	0.0053	0.6136	0.0021	0.3769	0.0011
4	Chandpur	18.26	10.83	1306.36	17.70	702.38	14.34	0.0088	0.0052	0.6311	0.0086	0.3393	0.0069
5	Chittagong	***1.14***	6.69	640.02	***1.38***	194.41	***4.05***	0.0013	0.0079	0.7550	0.0016	0.2293	0.0048
6	Comilla	***1.85***	***3.93***	1081.53	***1.51***	661.94	***2.56***	0.0011	0.0022	0.6168	0.0009	0.3775	0.0015
7	Cox's Bazar	***4.17***	13.59	1409.31	***1.29***	896.92	***2.31***	0.0018	0.0058	0.6055	0.0006	0.3853	0.0010
8	Dhaka	10.69	***5.31***	854.35	6.63	403.82	35.73	0.0081	0.0040	0.6489	0.0050	0.3067	0.0271
9	Dinajpur	***2.70***	***3.24***	688.97	***2.67***	257.23	***3.91***	0.0081	0.0040	0.6489	0.0050	0.3067	0.0271
10	Faridpur	***1.39***	8.76	1077.36	***0.61***	615.49	***2.46***	0.0028	0.0034	0.7186	0.0028	0.2683	0.0041
11	Feni	9.54	***1.86***	812.13	7.19	320.07	10.74	0.0008	0.0051	0.6315	0.0004	0.3608	0.0014
12	Hatiya	12.00	16.00	1533.24	10.89	967.16	***5.31***	0.0082	0.0016	0.6992	0.0062	0.2756	0.0092
13	Ishurdi	6.77	6.69	1064.03	***5.78***	544.84	***2.85***	0.0047	0.0063	0.6025	0.0043	0.3801	0.0021
14	Jessore	***2.47***	***4.97***	1330.00	***4.28***	967.45	***4.77***	0.0041	0.0041	0.6524	0.0035	0.3341	0.0017
15	Khepupara	***0.89***	10.48	1377.15	***0.47***	931.37	***0.97***	0.0011	0.0021	0.5748	0.0019	0.4181	0.0021
16	Khulna	***3.15***	***4.62***	1226.82	***3.22***	794.30	***2.36***	0.0004	0.0045	0.5933	0.0002	0.4012	0.0004
17	Kutubdia	***0.66***	7.38	1390.87	***0.66***	1038.05	***2.54***	0.0015	0.0023	0.6030	0.0016	0.3904	0.0012
18	Madaripur	16.83	8.07	1083.91	14.81	614.83	16.90	0.0003	0.0030	0.5700	0.0003	0.4254	0.0010
19	M.Court	***1.41***	***5.31***	913.75	***3.27***	424.59	***1.32***	0.0010	0.0039	0.6770	0.0024	0.3146	0.0010
20	Mongla	***3.13***	9.50	1154.58	***2.77***	766.51	***2.74***	0.0096	0.0046	0.6175	0.0084	0.3503	0.0096
21	Mymensingh	***5.80***	16.00	699.19	***2.45***	187.99	25.97	0.0016	0.0049	0.5954	0.0014	0.3953	0.0014
22	Patuakhali	***5.90***	***3.24***	901.29	***5.55***	428.45	***5.71***	0.0062	0.0171	0.7459	0.0026	0.2005	0.0277
23	Rajshahi	***2.05***	6.00	1419.41	***0.64***	1027.87	***1.32***	0.0044	0.0024	0.6675	0.0041	0.3173	0.0042
24	Rangamati	13.38	***4.97***	1070.06	15.32	484.62	11.75	0.0008	0.0024	0.5776	0.0003	0.4183	0.0005
25	Rangpur	***4.37***	7.38	934.51	***3.68***	460.67	***3.36***	0.0084	0.0031	0.6687	0.0096	0.3029	0.0073
26	Sandwip	***2.88***	6.69	1031.86	***0.91***	531.46	***4.94***	0.0031	0.0052	0.6609	0.0026	0.3258	0.0024
27	Satkhira	***3.53***	10.83	1089.33	***3.40***	586.75	289.63	0.0018	0.0042	0.6536	0.0006	0.3366	0.0031
28	Shitakunda	***0.60***	7.72	564.58	***4.04***	139.83	***1.42***	0.0018	0.0055	0.5492	0.0017	0.2958	0.1460
29	Srimongol	16.79	21.17	1322.23	13.95	679.14	269.71	0.0008	0.0108	0.7861	0.0056	0.1947	0.0020
30	Sylhet	***1.32***	15.66	825.06	***1.68***	287.72	***1.39***	0.0072	0.0091	0.5692	0.0060	0.2924	0.1161
31	Tangail	9.82	***2.55***	1019.91	9.56	679.31	7.98	0.0012	0.0138	0.7283	0.0015	0.2540	0.0012
32	Teknaf	***1.07***	6.69	955.01	***0.71***	456.05	***1.16***	0.0012	0.0138	0.7283	0.0015	0.2540	0.0012
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.1068	0.1763	20.7113	0.0964	10.4900	0.4192

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B121. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

September

								Scaling					
								Rank	1	3	6	2	5	4
								Comparison	**1.00**	2.69	212.37	1.26	98.21	36.94
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	6.09	12.21	974.47	8.40	423.99	134.33		0.0039	0.0078	0.6249	0.0054	0.2719	0.0861
2	Bhola	***3.36***	23.24	1244.56	***3.18***	548.37	18.34		0.0018	0.0126	0.6760	0.0017	0.2979	0.0100
3	Bogra	***5.67***	9.45	957.60	8.53	417.99	11.89		0.0040	0.0067	0.6786	0.0060	0.2962	0.0084
4	Chandpur	***0.56***	10.83	874.31	***2.46***	375.61	***2.07***		0.0004	0.0086	0.6907	0.0019	0.2967	0.0016
5	Chittagong	***5.75***	21.86	922.72	***5.86***	322.96	36109.69		0.0002	0.0006	0.0247	0.0002	0.0086	0.9658
6	Comilla	***1.00***	11.52	1235.55	***0.90***	702.24	***1.35***		0.0005	0.0059	0.6328	0.0005	0.3597	0.0007
7	Cox's Bazar	***0.94***	14.28	1488.20	***1.52***	1017.32	22.03		0.0004	0.0056	0.5849	0.0006	0.3998	0.0087
8	Dhaka	***2.67***	11.86	882.85	***3.98***	373.09	33.80		0.0020	0.0091	0.6748	0.0030	0.2852	0.0258
9	Dinajpur	***3.58***	8.07	853.78	***3.71***	368.83	11.70		0.0020	0.0091	0.6748	0.0030	0.2852	0.0258
10	Faridpur	***2.96***	22.55	954.74	6.83	333.55	1076.26		0.0029	0.0065	0.6832	0.0030	0.2951	0.0094
11	Feni	7.93	7.38	1132.17	7.21	679.51	26.17		0.0012	0.0094	0.3983	0.0028	0.1392	0.4490
12	Hatiya	***1.20***	14.28	1079.95	***0.89***	513.03	***0.23***		0.0043	0.0040	0.6086	0.0039	0.3653	0.0141
13	Ishurdi	9.42	9.10	841.14	11.89	337.37	18.15		0.0007	0.0089	0.6710	0.0006	0.3187	0.0001
14	Jessore	11.82	17.72	1298.07	14.71	693.12	171.36		0.0077	0.0074	0.6855	0.0097	0.2749	0.0148
15	Khepupara	***4.99***	6.69	1069.86	***4.86***	602.06	13.25		0.0054	0.0080	0.5882	0.0067	0.3141	0.0776
16	Khulna	***3.66***	23.24	1178.64	***4.84***	498.77	319.86		0.0029	0.0039	0.6287	0.0029	0.3538	0.0078
17	Kutubdia	***3.11***	10.14	1470.84	***5.82***	1076.26	13.81		0.0018	0.0115	0.5809	0.0024	0.2458	0.1576
18	Madaripur	15.76	16.00	823.06	15.07	284.45	485.33		0.0012	0.0039	0.5701	0.0023	0.4172	0.0054
19	M.Court	***4.66***	14.97	1272.41	***4.08***	703.34	8.50		0.0023	0.0075	0.6337	0.0020	0.3503	0.0042
20	Mongla	***3.36***	***2.50***	768.02	***2.08***	425.59	***5.13***		0.0096	0.0098	0.5020	0.0092	0.1735	0.2960
21	Mymensingh	***2.07***	13.59	666.10	***2.42***	185.29	19.32		0.0028	0.0021	0.6365	0.0017	0.3527	0.0042
22	Patuakhali	***3.15***	19.45	793.08	***5.60***	227.28	222.28		0.0023	0.0153	0.7495	0.0027	0.2085	0.0217
23	Rajshahi	11.93	18.07	879.34	9.40	302.55	1946.50		0.0025	0.0153	0.6241	0.0044	0.1788	0.1749
24	Rangamati	7.21	9.45	1214.80	6.50	752.88	11.96		0.0038	0.0057	0.2776	0.0030	0.0955	0.6145
25	Rangpur	***2.60***	12.21	1020.89	***1.94***	482.11	65.87		0.0036	0.0047	0.6065	0.0032	0.3759	0.0060
26	Sandwip	6.02	9.79	1355.19	***5.42***	912.95	9.99		0.0016	0.0077	0.6438	0.0012	0.3041	0.0415
27	Satkhira	11.95	21.17	1109.54	15.04	457.06	53.93		0.0026	0.0043	0.5894	0.0024	0.3970	0.0043
28	Shitakunda	***4.34***	***2.55***	557.24	9.53	181.09	11.47		0.0072	0.0127	0.6649	0.0090	0.2739	0.0323
29	Srimongol	***2.75***	15.66	1169.76	***3.04***	597.91	574.33		0.0057	0.0033	0.7273	0.0124	0.2363	0.0150
30	Sylhet	***1.11***	9.79	716.06	***2.70***	242.22	13.54		0.0012	0.0066	0.4949	0.0013	0.2530	0.2430
31	Tangail	9.14	***0.73***	1023.92	11.36	721.79	***5.60***		0.0011	0.0099	0.7266	0.0027	0.2458	0.0137
32	Teknaf	53.10	19.79	1310.25	45.75	632.02	57.56		0.0011	0.0099	0.7266	0.0027	0.2458	0.0137
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.0908	0.2442	19.2801	0.1146	8.9164	3.3540

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B122. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

October

								Scaling					
								Rank	1	3	6	2	4	5
								Comparison	**1.00**	2.17	111.58	1.24	34.04	37.18
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	12.20	21.17	954.71	9.29	324.75	39.65		0.0090	0.0155	0.7011	0.0068	0.2385	0.0291
2	Bhola	***2.40***	12.90	658.34	***3.23***	182.24	74.26		0.0026	0.0138	0.7053	0.0035	0.1953	0.0796
3	Bogra	***2.20***	19.79	647.35	***1.02***	152.96	10.27		0.0026	0.0237	0.7766	0.0012	0.1835	0.0123
4	Chandpur	***5.69***	***5.31***	785.99	6.65	371.68	***4.68***		0.0048	0.0045	0.6661	0.0056	0.3150	0.0040
5	Chittagong	***4.09***	12.55	618.53	***5.01***	170.64	35.39		0.0048	0.0148	0.7309	0.0059	0.2017	0.0418
6	Comilla	***4.42***	***2.55***	750.68	***3.53***	317.34	***4.26***		0.0041	0.0024	0.6933	0.0033	0.2931	0.0039
7	Cox's Bazar	***0.39***	8.76	657.57	***0.53***	220.77	***5.85***		0.0004	0.0098	0.7356	0.0006	0.2470	0.0065
8	Dhaka	***2.24***	19.79	616.46	***3.38***	144.42	19.26		0.0028	0.0246	0.7653	0.0042	0.1793	0.0239
9	Dinajpur	7.16	6.69	452.57	18.70	97.67	33.35		0.0028	0.0246	0.7653	0.0042	0.1793	0.0239
10	Faridpur	6.85	11.17	703.43	8.59	237.38	60.55		0.0116	0.0109	0.7345	0.0303	0.1585	0.0541
11	Feni	6.00	8.07	922.77	***3.67***	458.17	14.65		0.0067	0.0109	0.6843	0.0084	0.2309	0.0589
12	Hatiya	***3.07***	7.38	553.09	***5.41***	149.77	60.59		0.0042	0.0057	0.6529	0.0026	0.3242	0.0104
13	Ishurdi	8.25	14.97	663.16	13.88	180.40	24.86		0.0039	0.0095	0.7097	0.0069	0.1922	0.0778
14	Jessore	***3.79***	20.48	519.66	***3.99***	85.60	372.85		0.0091	0.0165	0.7324	0.0153	0.1992	0.0275
15	Khepupara	***2.09***	17.72	561.37	***4.39***	109.78	333.88		0.0038	0.0204	0.5164	0.0040	0.0851	0.3705
16	Khulna	***1.68***	9.10	582.08	***3.06***	161.29	44.08		0.0020	0.0172	0.5454	0.0043	0.1067	0.3244
17	Kutubdia	***2.97***	15.66	1051.71	***2.27***	389.47	***0.95***		0.0021	0.0114	0.7264	0.0038	0.2013	0.0550
18	Madaripur	9.14	***2.90***	388.76	13.89	79.75	7.03		0.0020	0.0107	0.7189	0.0016	0.2662	0.0006
19	M.Court	***4.22***	13.59	642.81	***4.79***	176.78	57.05		0.0047	0.0151	0.7148	0.0053	0.1966	0.0634
20	Mongla	***1.52***	8.00	635.77	***1.07***	278.45	***3.58***		0.0182	0.0058	0.7753	0.0277	0.1590	0.0140
21	Mymensingh	8.53	23.93	423.63	17.05	42.72	85949.18		0.0016	0.0086	0.6848	0.0011	0.2999	0.0039
22	Patuakhali	15.33	26.34	604.82	21.26	103.84	8822.50		0.0001	0.0003	0.0049	0.0002	0.0005	0.9940
23	Rajshahi	9.15	18.41	495.78	17.22	80.01	1935.05		0.0016	0.0027	0.0630	0.0022	0.0108	0.9196
24	Rangamati	8.76	17.72	719.29	11.70	203.15	3268848.34		0.0036	0.0072	0.1940	0.0067	0.0313	0.7572
25	Rangpur	8.79	7.38	981.06	6.36	529.82	16.79		0.0000	0.0000	0.0002	0.0000	0.0001	0.9997
26	Sandwip	7.80	26.69	673.97	7.44	136.62	88379.47		0.0057	0.0048	0.6329	0.0041	0.3418	0.0108
27	Satkhira	7.32	15.66	410.59	6.76	55.06	33.76		0.0001	0.0003	0.0076	0.0001	0.0015	0.9904
28	Shitakunda	16.86	10.48	521.77	13.96	121.75	33.05		0.0138	0.0296	0.7759	0.0128	0.1041	0.0638
29	Srimongol	13.32	38.41	1082.88	16.47	319.44	548.31		0.0235	0.0146	0.7268	0.0194	0.1696	0.0460
30	Sylhet	8.12	10.48	942.29	7.48	370.07	11.46		0.0066	0.0190	0.5364	0.0082	0.1582	0.2716
31	Tangail	***1.31***	8.45	772.47	***2.74***	392.51	15.29		0.0060	0.0078	0.6980	0.0055	0.2741	0.0085
32	Teknaf	8.72	12.90	485.31	9.66	93.89	44.61		0.0060	0.0078	0.6980	0.0055	0.2741	0.0085
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.1709	0.3703	19.0731	0.2114	5.8185	6.3557

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B123. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

November

		Scaling					
	Rank	1	3	6	2	5	4
	Comparison	**1.00**	1.74	69.15	1.10	16.19	15.42

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	10.27	14.28	665.57	15.76	177.63	32.34	0.0112	0.0156	0.7267	0.0172	0.1940	0.0353
2	Bhola	9.12	10.83	597.79	11.96	160.57	129.07	0.0099	0.0118	0.6502	0.0130	0.1747	0.1404
3	Bogra	***2.93***	9.79	784.68	***2.52***	320.04	***4.76***	0.0026	0.0087	0.6977	0.0022	0.2846	0.0042
4	Chandpur	***3.99***	16.00	1021.62	***3.22***	489.94	***4.24***	0.0026	0.0104	0.6638	0.0021	0.3183	0.0028
5	Chittagong	***1.76***	6.00	479.85	6.50	109.09	***3.13***	0.0029	0.0099	0.7914	0.0107	0.1799	0.0052
6	Comilla	***5.78***	***2.55***	531.35	***5.50***	163.95	15.01	0.0080	0.0035	0.7338	0.0076	0.2264	0.0207
7	Cox's Bazar	***3.91***	8.76	514.65	9.17	112.55	***1.24***	0.0060	0.0135	0.7914	0.0141	0.1731	0.0019
8	Dhaka	***4.32***	***1.52***	387.05	8.17	93.21	7.93	0.0086	0.0030	0.7707	0.0163	0.1856	0.0158
9	Dinajpur	11.82	8.76	358.28	10.87	52.61	91.06	0.0086	0.0030	0.7707	0.0163	0.1856	0.0158
10	Faridpur	***4.96***	7.72	603.64	***2.60***	182.55	18.79	0.0222	0.0164	0.6717	0.0204	0.0986	0.1707
11	Feni	9.32	32.90	712.71	11.03	146.22	6229.51	0.0060	0.0094	0.7359	0.0032	0.2226	0.0229
12	Hatiya	***2.78***	9.45	414.71	7.84	73.27	***1.71***	0.0013	0.0046	0.0998	0.0015	0.0205	0.8723
13	Ishurdi	6.97	16.69	563.25	9.01	129.16	20.60	0.0055	0.0185	0.8135	0.0154	0.1437	0.0034
14	Jessore	7.04	16.69	451.68	7.06	70.51	385.72	0.0093	0.0224	0.7554	0.0121	0.1732	0.0276
15	Khepupara	***3.55***	21.17	353.31	***5.45***	28.34	29.96	0.0075	0.0178	0.4812	0.0075	0.0751	0.4109
16	Khulna	***4.64***	15.66	650.57	***3.62***	172.93	19.91	0.0080	0.0479	0.7997	0.0123	0.0641	0.0678
17	Kutubdia	***0.63***	15.66	642.98	***3.29***	180.88	***3.26***	0.0053	0.0180	0.7501	0.0042	0.1994	0.0230
18	Madaripur	9.64	6.69	291.37	***2.81***	39.23	7.75	0.0007	0.0185	0.7594	0.0039	0.2136	0.0039
19	M.Court	24.41	38.07	777.12	20.70	160.63	170.99	0.0205	0.0319	0.6520	0.0174	0.1348	0.1435
20	Mongla	11.06	***5.50***	868.94	10.67	430.95	7.47	0.0270	0.0187	0.8150	0.0079	0.1097	0.0217
21	Mymensingh	14.80	15.66	304.00	15.69	25.01	119.87	0.0083	0.0041	0.6511	0.0080	0.3229	0.0056
22	Patuakhali	11.71	17.72	483.65	15.99	78.12	913.92	0.0299	0.0316	0.6141	0.0317	0.0505	0.2421
23	Rajshahi	12.71	14.62	543.21	8.15	121.15	77.98	0.0077	0.0117	0.3180	0.0105	0.0514	0.6008
24	Rangamati	***0.94***	11.52	605.11	***3.09***	167.41	12.68	0.0163	0.0188	0.6984	0.0105	0.1558	0.1003
25	Rangpur	***1.20***	17.72	599.29	***2.68***	139.93	18.03	0.0012	0.0144	0.7557	0.0039	0.2091	0.0158
26	Sandwip	9.11	29.45	614.00	7.52	105.64	63369.32	0.0015	0.0228	0.7695	0.0034	0.1797	0.0232
27	Satkhira	15.41	11.86	313.22	14.00	34.15	39.47	0.0001	0.0005	0.0096	0.0001	0.0016	0.9881
28	Shitakunda	6.39	12.55	366.04	***4.94***	46.98	24.03	0.0360	0.0277	0.7316	0.0327	0.0798	0.0922
29	Srimongol	9.16	32.90	833.66	12.13	203.29	1407.94	0.0139	0.0272	0.7941	0.0107	0.1019	0.0521
30	Sylhet	***5.56***	22.90	637.46	6.35	140.21	9.93	0.0037	0.0132	0.3336	0.0049	0.0813	0.5634
31	Tangail	***3.03***	***3.91***	694.44	***3.92***	366.77	***3.56***	0.0068	0.0278	0.7751	0.0077	0.1705	0.0121
32	Teknaf	***1.58***	6.69	264.95	***4.02***	22.97	18.88	0.0068	0.0278	0.7751	0.0077	0.1705	0.0121
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3060	0.5312	21.1560	0.3370	4.9524	4.7174

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B124. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

December

								Scaling					
								Rank	1	3	6	2	4	5
								Comparison	**1.00**	2.62	85.04	1.18	14.55	17.26
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	***1.51***	11.52	413.23	9.18	63.72	88.17		0.0026	0.0196	0.7036	0.0156	0.1085	0.1501
2	Bhola	7.48	18.41	545.66	9.57	104.84	311.93		0.0075	0.0185	0.5468	0.0096	0.1051	0.3126
3	Bogra	***1.27***	16.34	481.28	7.51	92.46	***1.17***		0.0021	0.0272	0.8021	0.0125	0.1541	0.0019
4	Chandpur	***3.36***	21.86	636.24	***5.28***	149.13	1235.58		0.0016	0.0107	0.3101	0.0026	0.0727	0.6023
5	Chittagong	8.81	***0.83***	551.49	9.99	209.32	6.79		0.0112	0.0011	0.7005	0.0127	0.2659	0.0086
6	Comilla	***0.95***	11.52	435.92	***2.02***	80.58	92.77		0.0015	0.0185	0.6989	0.0032	0.1292	0.1487
7	Cox's Bazar	6.23	19.45	566.49	***1.00***	132.72	9141.80		0.0006	0.0020	0.0574	0.0001	0.0134	0.9264
8	Dhaka	***1.11***	10.48	439.29	***1.33***	95.67	***4.98***		0.0020	0.0190	0.7946	0.0024	0.1731	0.0090
9	Dinajpur	***5.62***	***1.52***	274.52	6.53	30.35	9.15		0.0020	0.0190	0.7946	0.0024	0.1731	0.0090
10	Faridpur	***3.58***	12.21	502.59	***4.28***	114.83	38.52		0.0172	0.0046	0.8377	0.0199	0.0926	0.0279
11	Feni	***3.50***	17.03	441.36	***4.03***	69.29	75.34		0.0053	0.0181	0.7435	0.0063	0.1699	0.0570
12	Hatiya	***2.00***	11.52	391.40	***2.14***	59.10	15.89		0.0057	0.0279	0.7229	0.0066	0.1135	0.1234
13	Ishurdi	***4.43***	11.86	386.22	***3.38***	57.52	12.39		0.0041	0.0239	0.8120	0.0044	0.1226	0.0330
14	Jessore	8.73	11.86	396.76	***5.96***	59.45	44.46		0.0093	0.0249	0.8117	0.0071	0.1209	0.0260
15	Khepupara	15.58	38.07	470.44	10.98	46.80	19.53		0.0166	0.0225	0.7526	0.0113	0.1128	0.0843
16	Khulna	***2.19***	16.69	504.55	6.37	96.19	960.97		0.0259	0.0633	0.7823	0.0183	0.0778	0.0325
17	Kutubdia	***0.33***	13.59	506.52	***0.86***	115.60	***3.57***		0.0014	0.0105	0.3179	0.0040	0.0606	0.6055
18	Madaripur	14.96	***5.31***	255.00	10.08	30.53	15.29		0.0005	0.0212	0.7909	0.0013	0.1805	0.0056
19	M.Court	14.52	33.59	587.38	20.22	89.08	110.82		0.0170	0.0393	0.6865	0.0236	0.1041	0.1295
20	Mongla	***1.26***	8.00	339.25	***2.20***	75.52	7.94		0.0452	0.0160	0.7700	0.0304	0.0922	0.0462
21	Mymensingh	***3.94***	8.07	256.96	***0.43***	18.09	17.96		0.0029	0.0184	0.7814	0.0051	0.1739	0.0183
22	Patuakhali	6.21	13.59	313.89	***5.46***	26.69	40.54		0.0129	0.0264	0.8412	0.0014	0.0592	0.0588
23	Rajshahi	***0.55***	8.76	396.32	***0.86***	70.64	***4.85***		0.0153	0.0334	0.7724	0.0134	0.0657	0.0998
24	Rangamati	6.99	10.48	499.09	22.86	111.50	101.77		0.0011	0.0182	0.8223	0.0018	0.1466	0.0101
25	Rangpur	***0.80***	7.03	449.96	***2.92***	98.09	10.67		0.0093	0.0139	0.6631	0.0304	0.1481	0.1352
26	Sandwip	***1.05***	13.93	541.68	***1.01***	122.90	24.04		0.0014	0.0124	0.7901	0.0051	0.1722	0.0187
27	Satkhira	8.65	12.55	263.77	8.07	19.71	14.90		0.0015	0.0198	0.7688	0.0014	0.1744	0.0341
28	Shitakunda	***1.08***	12.90	232.27	7.15	8.04	54.47		0.0264	0.0383	0.8050	0.0246	0.0602	0.0455
29	Srimongol	7.55	16.34	469.77	***1.96***	76.61	875.81		0.0034	0.0408	0.7353	0.0226	0.0254	0.1724
30	Sylhet	***1.12***	12.90	427.16	***2.58***	80.13	***0.94***		0.0052	0.0113	0.3244	0.0014	0.0529	0.6048
31	Tangail	6.43	***3.91***	612.82	***5.71***	286.47	***2.60***		0.0021	0.0246	0.8139	0.0049	0.1527	0.0018
32	Teknaf	***3.44***	9.45	296.32	***3.33***	32.35	10.14		0.0021	0.0246	0.8139	0.0049	0.1527	0.0018
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.2630	0.6897	22.3682	0.3116	3.8265	4.5409

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B125. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

Yearly Average

		Scaling					
	Rank	2	1	6	3	5	4
	Comparison	1.13	**1.00**	77.92	1.46	40.48	6.01

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	19.12	17.03	1556.38	18.35	1031.00	55.06	0.0071	0.0063	0.5771	0.0068	0.3823	0.0204
2	Bhola	***1.12***	8.07	933.86	***0.89***	469.80	11.67	0.0008	0.0057	0.6551	0.0006	0.3296	0.0082
3	Bogra	***2.70***	6.34	894.18	***1.76***	440.26	***3.63***	0.0020	0.0047	0.6629	0.0013	0.3264	0.0027
4	Chandpur	***3.85***	18.76	1293.72	***3.82***	728.63	25.21	0.0019	0.0090	0.6238	0.0018	0.3513	0.0122
5	Chittagong	11.01	7.03	1064.53	10.28	683.79	19.10	0.0061	0.0039	0.5928	0.0057	0.3808	0.0106
6	Comilla	6.24	7.38	1216.16	***4.66***	801.23	***5.12***	0.0031	0.0036	0.5959	0.0023	0.3926	0.0025
7	Cox's Bazar	6.30	***2.21***	1313.75	10.20	1106.01	13.86	0.0026	0.0009	0.5357	0.0042	0.4510	0.0057
8	Dhaka	***3.44***	***4.62***	1095.22	***3.06***	797.28	***2.41***	0.0018	0.0024	0.5746	0.0016	0.4183	0.0013
9	Dinajpur	13.52	8.07	442.11	33.34	96.06	19.22	0.0018	0.0024	0.5746	0.0016	0.4183	0.0013
10	Faridpur	7.27	8.41	1297.87	***5.47***	914.39	16.09	0.0221	0.0132	0.7220	0.0544	0.1569	0.0314
11	Feni	12.46	13.24	1284.51	11.98	809.61	36.13	0.0032	0.0037	0.5770	0.0024	0.4065	0.0072
12	Hatiya	13.42	***0.83***	1020.86	17.61	605.62	10.47	0.0057	0.0061	0.5925	0.0055	0.3734	0.0167
13	Ishurdi	23.50	6.69	751.71	13.68	293.87	26.36	0.0080	0.0005	0.6117	0.0106	0.3629	0.0063
14	Jessore	21.74	8.76	952.20	11.18	511.25	23.12	0.0211	0.0060	0.6737	0.0123	0.2634	0.0236
15	Khepupara	8.81	38.41	899.31	6.40	218.52	15.85	0.0142	0.0057	0.6231	0.0073	0.3345	0.0151
16	Khulna	***2.68***	19.45	1478.42	***2.49***	940.51	17.50	0.0074	0.0324	0.7574	0.0054	0.1840	0.0134
17	Kutubdia	23.20	18.41	1906.33	18.68	1351.48	21.14	0.0011	0.0079	0.6007	0.0010	0.3822	0.0071
18	Madaripur	48.02	10.14	656.37	62.21	199.99	37.84	0.0069	0.0055	0.5709	0.0056	0.4047	0.0063
19	M.Court	27.21	33.59	1392.78	22.86	621.12	837.54	0.0093	0.0114	0.4745	0.0078	0.2116	0.2854
20	Mongla	***1.65***	10.50	1099.93	***1.16***	825.53	9.25	0.0473	0.0100	0.6469	0.0613	0.1971	0.0373
21	Mymensingh	10.36	10.83	439.76	23.97	79.44	43.99	0.0008	0.0054	0.5646	0.0006	0.4238	0.0047
22	Patuakhali	16.14	24.62	826.05	***4.96***	231.81	379.18	0.0170	0.0178	0.7229	0.0394	0.1306	0.0723
23	Rajshahi	16.64	***4.62***	890.79	20.56	464.44	13.98	0.0109	0.0166	0.5571	0.0033	0.1563	0.2557
24	Rangamati	21.12	7.72	1185.86	21.42	665.59	22.67	0.0118	0.0033	0.6313	0.0146	0.3291	0.0099
25	Rangpur	7.70	16.00	1056.54	8.51	497.65	20.28	0.0110	0.0040	0.6162	0.0111	0.3459	0.0118
26	Sandwip	13.32	14.97	1389.78	14.29	881.19	840.60	0.0048	0.0100	0.6576	0.0053	0.3097	0.0126
27	Satkhira	13.41	14.62	535.59	21.26	117.70	35.70	0.0042	0.0047	0.4406	0.0045	0.2794	0.2665
28	Shitakunda	6.61	9.45	550.85	31.18	152.21	8.44	0.0182	0.0198	0.7255	0.0288	0.1594	0.0484
29	Srimongol	16.41	23.24	912.73	23.11	315.04	519.53	0.0087	0.0125	0.7260	0.0411	0.2006	0.0111
30	Sylhet	13.44	***1.86***	1232.16	***4.87***	998.85	10.23	0.0091	0.0128	0.5043	0.0128	0.1740	0.2870
31	Tangail	***2.11***	12.09	1305.09	***3.63***	1054.39	20.15	0.0059	0.0008	0.5449	0.0022	0.4417	0.0045
32	Teknaf	7.20	19.79	618.45	13.20	147.81	17.01	0.0059	0.0008	0.5449	0.0022	0.4417	0.0045
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.2819	0.2500	19.4789	0.3654	10.1201	1.5036

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B126. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

Yearly Maximum Monthly

		Scaling					
	Rank	2	3	6	1	5	4
	Comparison	1.18	2.00	287.56	**1.00**	185.82	4.02

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***5.49***	16.00	1810.96	***2.04***	1357.01	8.02	0.0017	0.0050	0.5660	0.0006	0.4241	0.0025
2	Bhola	***4.22***	***5.31***	1457.45	***2.78***	990.13	***3.34***	0.0017	0.0022	0.5917	0.0011	0.4020	0.0014
3	Bogra	***2.85***	***5.31***	1114.54	***2.69***	688.57	***3.29***	0.0016	0.0029	0.6133	0.0015	0.3789	0.0018
4	Chandpur	6.81	***3.24***	1144.22	6.76	774.92	10.94	0.0035	0.0017	0.5877	0.0035	0.3980	0.0056
5	Chittagong	11.07	8.76	995.07	***4.90***	493.82	12.95	0.0072	0.0057	0.6518	0.0032	0.3235	0.0085
6	Comilla	6.87	6.69	1592.70	6.80	1244.75	8.37	0.0024	0.0023	0.5557	0.0024	0.4343	0.0029
7	Cox's Bazar	***4.16***	7.72	1445.14	***4.83***	1084.63	***1.01***	0.0016	0.0030	0.5673	0.0019	0.4258	0.0004
8	Dhaka	***4.91***	8.76	1134.80	***4.89***	639.90	9.66	0.0027	0.0049	0.6294	0.0027	0.3549	0.0054
9	Dinajpur	***3.56***	8.76	1189.74	***2.35***	741.57	6.28	0.0027	0.0049	0.6294	0.0027	0.3549	0.0054
10	Faridpur	***0.89***	7.38	1921.31	***0.74***	1570.96	***2.46***	0.0018	0.0045	0.6094	0.0012	0.3799	0.0032
11	Feni	***1.96***	7.38	1128.70	***3.07***	637.64	***3.82***	0.0003	0.0021	0.5484	0.0002	0.4484	0.0007
12	Hatiya	***3.27***	***3.59***	1479.43	***3.36***	1143.57	***1.96***	0.0011	0.0041	0.6332	0.0017	0.3577	0.0021
13	Ishurdi	18.70	8.07	1177.95	18.80	656.78	23.59	0.0012	0.0014	0.5614	0.0013	0.4340	0.0007
14	Jessore	***4.87***	23.93	2839.02	***3.17***	2816.64	7.93	0.0098	0.0042	0.6187	0.0099	0.3450	0.0124
15	Khepupara	***4.13***	12.21	1872.46	***2.59***	1335.04	***5.99***	0.0009	0.0042	0.4985	0.0006	0.4945	0.0014
16	Khulna	***2.15***	***4.97***	1584.29	***2.09***	1117.19	***2.08***	0.0013	0.0038	0.5793	0.0008	0.4130	0.0019
17	Kutubdia	***4.40***	8.76	1523.50	***2.14***	1157.66	***1.70***	0.0008	0.0018	0.5840	0.0008	0.4118	0.0008
18	Madaripur	***1.75***	6.34	991.78	***1.42***	510.50	***3.81***	0.0016	0.0032	0.5646	0.0008	0.4291	0.0006
19	M.Court	***3.53***	21.86	1532.56	***3.36***	876.09	146.92	0.0014	0.0085	0.5930	0.0013	0.3390	0.0568
20	Mongla	***5.06***	***4.00***	1244.79	***3.66***	1137.67	***3.31***	0.0012	0.0042	0.6544	0.0009	0.3368	0.0025
21	Mymensingh	***2.18***	11.52	760.32	***2.60***	262.67	114.96	0.0021	0.0017	0.5190	0.0015	0.4743	0.0014
22	Patuakhali	***4.40***	9.10	1220.63	***2.71***	730.29	***2.86***	0.0019	0.0100	0.6587	0.0023	0.2276	0.0996
23	Rajshahi	6.62	15.66	1870.10	8.94	1523.44	53.46	0.0022	0.0046	0.6196	0.0014	0.3707	0.0015
24	Rangamati	***5.59***	***5.31***	1214.29	7.81	842.48	9.41	0.0019	0.0045	0.5377	0.0026	0.4380	0.0154
25	Rangpur	***5.95***	6.34	1237.81	***3.55***	785.86	15.47	0.0027	0.0025	0.5824	0.0037	0.4041	0.0045
26	Sandwip	***3.03***	9.10	1567.89	***1.28***	1155.16	***0.25***	0.0029	0.0031	0.6023	0.0017	0.3824	0.0075
27	Satkhira	***4.28***	7.38	1484.73	***1.21***	1018.56	10.08	0.0011	0.0033	0.5729	0.0005	0.4221	0.0001
28	Shitakunda	7.72	***2.55***	737.50	6.68	317.97	6.90	0.0017	0.0029	0.5877	0.0005	0.4032	0.0040
29	Srimongol	6.97	13.59	1471.11	9.19	949.56	17.79	0.0072	0.0024	0.6833	0.0062	0.2946	0.0064
30	Sylhet	***5.13***	16.34	1195.10	***3.03***	601.68	***2.56***	0.0028	0.0055	0.5960	0.0037	0.3847	0.0072
31	Tangail	11.51	7.55	2464.28	***3.75***	3002.41	6.34	0.0028	0.0090	0.6553	0.0017	0.3299	0.0014
32	Teknaf	16.20	***1.86***	1145.26	19.49	661.50	16.16	0.0028	0.0090	0.6553	0.0017	0.3299	0.0014
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.0787	0.1330	19.1075	0.0664	12.3470	0.2673

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B127. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

Yearly Minimum Monthly

		Scaling					
	Rank	1	3	6	2	4	5
	Comparison	**1.00**	2.11	65.40	1.16	9.76	11.56

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	***3.01***	18.76	571.67	***5.27***	132.53	75.69	0.0037	0.0232	0.7084	0.0065	0.1642	0.0938
2	Bhola	***1.55***	22.90	548.98	***0.42***	107.75	27.38	0.0022	0.0323	0.7743	0.0006	0.1520	0.0386
3	Bogra	***2.83***	8.76	243.29	***2.79***	19.77	14.80	0.0097	0.0300	0.8325	0.0095	0.0677	0.0506
4	Chandpur	***1.09***	20.48	559.75	***1.09***	129.25	***1.69***	0.0015	0.0287	0.7847	0.0015	0.1812	0.0024
5	Chittagong	***2.63***	14.28	453.94	***4.04***	97.74	***0.66***	0.0046	0.0249	0.7918	0.0070	0.1705	0.0011
6	Comilla	***1.49***	***4.28***	431.43	***5.76***	100.63	***3.90***	0.0027	0.0078	0.7880	0.0105	0.1838	0.0071
7	Cox's Bazar	***1.65***	21.86	559.78	***0.51***	127.40	***5.21***	0.0023	0.0305	0.7814	0.0007	0.1778	0.0073
8	Dhaka	***3.69***	***5.31***	315.88	***2.83***	56.15	6.78	0.0094	0.0136	0.8086	0.0073	0.1437	0.0174
9	Dinajpur	***3.44***	***5.31***	115.39	***4.64***	***3.95***	10.70	0.0094	0.0136	0.8086	0.0073	0.1437	0.0174
10	Faridpur	***0.14***	11.17	290.36	***1.73***	31.96	23.04	0.0240	0.0370	0.8045	0.0323	0.0275	0.0746
11	Feni	172.69	106.34	330.55	***4.15***	103.72	4.32E+33	0.0004	0.0312	0.8101	0.0048	0.0892	0.0643
12	Hatiya	***0.44***	11.86	395.52	***2.33***	69.89	***3.94***	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
13	Ishurdi	***2.18***	***5.31***	179.76	***1.41***	8.65	***5.95***	0.0009	0.0245	0.8172	0.0048	0.1444	0.0081
14	Jessore	***5.25***	9.10	276.68	7.55	30.69	35.77	0.0107	0.0261	0.8844	0.0069	0.0425	0.0293
15	Khepupara	8.54	16.34	329.49	8.63	33.30	25.62	0.0144	0.0249	0.7579	0.0207	0.0841	0.0980
16	Khulna	***1.37***	10.14	436.08	***2.45***	95.01	141.75	0.0202	0.0387	0.7809	0.0204	0.0789	0.0607
17	Kutubdia	***1.41***	16.69	460.00	***0.77***	85.17	***5.82***	0.0020	0.0148	0.6349	0.0036	0.1383	0.2064
18	Madaripur	7.43	***2.55***	197.86	***4.83***	16.95	9.07	0.0025	0.0293	0.8072	0.0014	0.1495	0.0102
19	M.Court	***3.90***	21.17	382.95	8.84	41.51	451.19	0.0043	0.0233	0.4210	0.0097	0.0456	0.4961
20	Mongla	***1.86***	***5.50***	383.50	8.79	124.87	***3.55***	0.0311	0.0107	0.8289	0.0202	0.0710	0.0380
21	Mymensingh	15.20	15.66	228.89	14.65	15.31	75.20	0.0035	0.0104	0.7262	0.0166	0.2365	0.0067
22	Patuakhali	8.60	19.79	371.22	12.90	40.16	307.56	0.0416	0.0429	0.6273	0.0402	0.0419	0.2061
23	Rajshahi	7.25	***3.59***	186.61	9.57	13.68	14.04	0.0113	0.0260	0.4883	0.0170	0.0528	0.4046
24	Rangamati	***4.33***	10.48	354.31	***3.55***	58.67	31.58	0.0309	0.0153	0.7950	0.0408	0.0583	0.0598
25	Rangpur	***3.64***	***5.31***	245.79	***5.41***	24.83	26.42	0.0094	0.0226	0.7654	0.0077	0.1267	0.0682
26	Sandwip	***2.04***	***5.31***	388.93	6.06	79.94	7.88	0.0117	0.0171	0.7893	0.0174	0.0797	0.0848
27	Satkhira	***3.88***	7.72	201.69	6.86	9.88	29.23	0.0042	0.0108	0.7935	0.0124	0.1631	0.0161
28	Shitakunda	14.61	12.21	311.56	9.09	38.15	95.79	0.0150	0.0298	0.7779	0.0265	0.0381	0.1128
29	Srimongol	9.47	34.97	354.21	14.81	24.81	513.70	0.0304	0.0254	0.6472	0.0189	0.0792	0.1990
30	Sylhet	***5.72***	8.07	328.59	***4.03***	56.81	9.66	0.0100	0.0367	0.3721	0.0156	0.0261	0.5396
31	Tangail	***4.08***	***3.45***	311.31	***5.12***	65.78	***5.45***	0.0139	0.0195	0.7958	0.0098	0.1376	0.0234
32	Teknaf	11.59	9.45	257.44	***4.45***	24.34	11.66	0.0139	0.0195	0.7958	0.0098	0.1376	0.0234
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3517	0.7413	22.9995	0.4083	3.4335	4.0658

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B128. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

Average Pre-Monsoon(Mar-May)

		Scaling					
	Rank	1	3	6	2	5	4
	Comparison	**1.00**	1.28	66.50	1.10	19.64	8.80

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
1	Barisal	6.45	***3.24***	849.09	8.89	476.07	***4.60***	0.0048	0.0024	0.6297	0.0066	0.3531	0.0034
2	Bhola	***3.79***	***3.24***	773.21	***5.21***	376.45	***4.10***	0.0032	0.0028	0.6631	0.0045	0.3229	0.0035
3	Bogra	***2.16***	7.03	349.47	***3.41***	57.29	6.57	0.0051	0.0165	0.8205	0.0080	0.1345	0.0154
4	Chandpur	***4.72***	26.69	924.94	***4.03***	325.35	***2.00***	0.0037	0.0207	0.7183	0.0031	0.2527	0.0016
5	Chittagong	7.56	7.03	849.11	9.15	412.80	16.10	0.0058	0.0054	0.6523	0.0070	0.3171	0.0124
6	Comilla	***2.98***	***5.31***	909.12	***2.40***	480.37	***2.06***	0.0021	0.0038	0.6483	0.0017	0.3426	0.0015
7	Cox's Bazar	9.36	***3.24***	831.90	8.59	451.75	12.71	0.0071	0.0025	0.6314	0.0065	0.3429	0.0096
8	Dhaka	***0.84***	14.62	553.91	***2.66***	146.22	***4.29***	0.0012	0.0202	0.7666	0.0037	0.2024	0.0059
9	Dinajpur	25.29	***2.90***	226.55	19.21	31.63	18.77	0.0012	0.0202	0.7666	0.0037	0.2024	0.0059
10	Faridpur	***0.82***	14.28	571.72	***0.81***	155.00	7.29	0.0780	0.0089	0.6985	0.0592	0.0975	0.0579
11	Feni	153.34	60.83	611.57	150.11	60.61	1.4E+28	0.0011	0.0190	0.7624	0.0011	0.2067	0.0097
12	Hatiya	***5.96***	16.00	771.10	13.37	260.68	58.81	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
13	Ishurdi	8.48	***5.66***	276.77	***4.06***	33.19	16.49	0.0053	0.0142	0.6849	0.0119	0.2315	0.0522
14	Jessore	22.98	13.59	660.42	24.23	201.04	28.24	0.0246	0.0164	0.8031	0.0118	0.0963	0.0478
15	Khepupara	***1.56***	17.03	503.97	***1.61***	93.71	6.02	0.0242	0.0143	0.6948	0.0255	0.2115	0.0297
16	Khulna	10.98	19.10	783.32	6.61	253.31	***5.41***	0.0025	0.0273	0.8078	0.0026	0.1502	0.0096
17	Kutubdia	***2.30***	12.90	895.36	***0.70***	380.64	***3.47***	0.0102	0.0177	0.7262	0.0061	0.2348	0.0050
18	Madaripur	13.47	***3.24***	358.68	15.87	77.78	12.98	0.0018	0.0100	0.6912	0.0005	0.2938	0.0027
19	M.Court	7.87	28.07	722.39	9.71	172.50	402081.91	0.0000	0.0001	0.0018	0.0000	0.0004	0.9977
20	Mongla	***3.55***	14.00	751.43	***3.45***	353.44	82.30	0.0279	0.0067	0.7441	0.0329	0.1614	0.0269
21	Mymensingh	16.09	9.45	359.43	14.41	55.05	46.98	0.0029	0.0116	0.6220	0.0029	0.2925	0.0681
22	Patuakhali	***2.10***	23.24	587.90	***2.09***	116.97	27.92	0.0321	0.0188	0.7168	0.0287	0.1098	0.0937
23	Rajshahi	***1.29***	7.38	291.76	***0.61***	37.31	***4.26***	0.0028	0.0306	0.7733	0.0027	0.1539	0.0367
24	Rangamati	***3.44***	***4.62***	510.77	6.06	161.63	18.19	0.0038	0.0215	0.8516	0.0018	0.1089	0.0124
25	Rangpur	8.43	***3.59***	428.19	31.53	110.01	13.51	0.0049	0.0066	0.7248	0.0086	0.2294	0.0258
26	Sandwip	13.19	***5.66***	796.60	12.94	348.49	23.37	0.0142	0.0060	0.7193	0.0530	0.1848	0.0227
27	Satkhira	8.26	10.14	340.16	8.22	46.91	34.04	0.0110	0.0047	0.6637	0.0108	0.2904	0.0195
28	Shitakunda	7.60	***4.28***	539.99	8.09	180.07	22.08	0.0184	0.0226	0.7598	0.0184	0.1048	0.0760
29	Srimongol	***4.31***	18.76	402.69	6.21	52.42	95.14	0.0100	0.0056	0.7085	0.0106	0.2363	0.0290
30	Sylhet	***3.53***	10.83	633.95	6.18	184.53	7.56	0.0074	0.0324	0.6949	0.0107	0.0905	0.1642
31	Tangail	***2.80***	***3.91***	503.18	***4.10***	210.75	***5.78***	0.0042	0.0128	0.7488	0.0073	0.2180	0.0089
32	Teknaf	***0.18***	10.48	366.45	***0.22***	53.45	***5.67***	0.0042	0.0128	0.7488	0.0073	0.2180	0.0089
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99	0.3254	0.4152	21.6439	0.3592	6.3917	2.8646

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B129. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

Average Monsoon(Jun-Oct)

		Scaling											
		Rank	1	3	6	2	5	4					
		Comparison	**1.00**	1.39	160.38	1.04	107.98	13.83					
	Station	**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	19.43	38.07	2855.19	28.38	2299.29	257.59		0.0035	0.0069	0.5193	0.0052	0.4182	0.0469
2	Bhola	***4.04***	6.69	1482.72	***3.72***	1074.28	***3.26***		0.0016	0.0026	0.5759	0.0014	0.4172	0.0013
3	Bogra	***2.68***	17.03	1476.34	***2.60***	920.31	6.45		0.0011	0.0070	0.6087	0.0011	0.3794	0.0027
4	Chandpur	9.44	7.38	1181.96	6.95	787.79	8.65		0.0047	0.0037	0.5903	0.0035	0.3935	0.0043
5	Chittagong	***3.53***	20.48	1271.65	***3.71***	654.76	32.10		0.0018	0.0103	0.6402	0.0019	0.3296	0.0162
6	Comilla	***1.28***	***5.31***	1378.57	***1.22***	994.27	***1.53***		0.0005	0.0022	0.5787	0.0005	0.4174	0.0006
7	Cox's Bazar	6.65	16.00	2154.17	6.56	2004.72	***1.94***		0.0016	0.0038	0.5141	0.0016	0.4784	0.0005
8	Dhaka	***3.14***	12.55	1287.06	***4.45***	814.75	21.54		0.0015	0.0059	0.6005	0.0021	0.3801	0.0100
9	Dinajpur	26.29	18.41	1387.29	25.37	689.42	33.76		0.0015	0.0059	0.6005	0.0021	0.3801	0.0100
10	Faridpur	***4.19***	25.31	2124.64	***5.74***	1663.48	882.46		0.0121	0.0084	0.6362	0.0116	0.3162	0.0155
11	Feni	***0.72***	9.45	1397.53	***0.64***	1021.59	***2.04***		0.0009	0.0054	0.4515	0.0012	0.3535	0.1875
12	Hatiya	***0.29***	9.45	1371.50	***0.40***	872.29	***0.91***		0.0003	0.0039	0.5746	0.0003	0.4201	0.0008
13	Ishurdi	8.48	12.55	1125.12	10.65	597.79	21.39		0.0001	0.0042	0.6082	0.0002	0.3869	0.0004
14	Jessore	18.37	17.38	2115.29	18.03	1874.34	236.42		0.0048	0.0071	0.6335	0.0060	0.3366	0.0120
15	Khepupara	***1.99***	8.41	1478.12	***1.65***	1140.75	6.35		0.0043	0.0041	0.4942	0.0042	0.4379	0.0552
16	Khulna	6.56	12.21	1612.07	***0.47***	1275.36	***3.79***		0.0008	0.0032	0.5605	0.0006	0.4325	0.0024
17	Kutubdia	***4.77***	***3.93***	1982.79	***3.09***	2113.76	6.60		0.0023	0.0042	0.5539	0.0002	0.4382	0.0013
18	Madaripur	18.03	***2.55***	826.60	17.01	307.87	15.76		0.0012	0.0010	0.4819	0.0007	0.5137	0.0016
19	M.Court	6.92	9.45	1622.13	6.43	1346.79	39.46		0.0023	0.0031	0.5352	0.0021	0.4443	0.0130
20	Mongla	***2.16***	***2.50***	1545.82	***2.01***	1750.59	***1.63***		0.0152	0.0021	0.6959	0.0143	0.2592	0.0133
21	Mymensingh	15.75	26.00	1032.69	22.60	361.95	9811.88		0.0007	0.0008	0.4678	0.0006	0.5297	0.0005
22	Patuakhali	10.92	11.52	1114.93	9.60	580.36	50.27		0.0014	0.0023	0.0916	0.0020	0.0321	0.8706
23	Rajshahi	10.06	17.03	1407.18	7.12	839.09	295.17		0.0061	0.0065	0.6272	0.0054	0.3265	0.0283
24	Rangamati	6.45	7.38	1306.00	***4.78***	887.14	13.46		0.0039	0.0066	0.5463	0.0028	0.3258	0.1146
25	Rangpur	***5.18***	16.00	1503.14	***5.59***	966.13	21.17		0.0029	0.0033	0.5869	0.0021	0.3987	0.0060
26	Sandwip	***0.77***	10.14	1511.93	***0.64***	1029.44	***2.44***		0.0021	0.0064	0.5971	0.0022	0.3838	0.0084
27	Satkhira	25.52	15.31	1301.46	34.71	756.46	38.55		0.0003	0.0040	0.5917	0.0002	0.4029	0.0010
28	Shitakunda	11.90	***4.62***	766.79	14.04	332.09	17.62		0.0117	0.0070	0.5992	0.0160	0.3483	0.0177
29	Srimongol	17.86	19.10	1554.39	20.82	986.46	77.70		0.0104	0.0040	0.6685	0.0122	0.2895	0.0154
30	Sylhet	***5.36***	16.69	1527.19	***5.60***	1000.28	82.94		0.0067	0.0071	0.5808	0.0078	0.3686	0.0290
31	Tangail	8.48	***3.91***	1835.14	7.79	1861.77	***5.13***		0.0020	0.0063	0.5789	0.0021	0.3792	0.0314
32	Teknaf	28.09	12.21	1353.69	27.03	754.69	33.83		0.0020	0.0063	0.5789	0.0021	0.3792	0.0314
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99		0.1120	0.1556	17.9688	0.1164	12.0973	1.5499

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

Table B130. Determination of Best Fit Distribution

Chi-square values of Relative Humidity Data for different probability distributions

Average Post-Monsoon(Nov-Feb)

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I
	Scaling						
	Rank	3	1	6	4	5	2
	Comparison	3.57	**1.00**	6.70	3.81	6.20	2.09
		Normal	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	171.78	47.72	313.81	160.68	292.73	95.67
		0.1587	0.0441	0.2899	0.1484	0.2704	0.0884
2	Bhola	172.66	47.72	314.37	171.90	270.82	97.28
		0.1607	0.0444	0.2925	0.1599	0.2520	0.0905
3	Bogra	156.43	41.86	282.66	177.62	224.84	87.85
		0.1611	0.0431	0.2910	0.1829	0.2315	0.0904
4	Chandpur	180.88	47.72	321.04	172.74	271.97	92.60
		0.1664	0.0439	0.2954	0.1589	0.2502	0.0852
5	Chittagong	155.72	47.72	286.70	150.60	401.39	97.83
		0.1366	0.0419	0.2515	0.1321	0.3521	0.0858
6	Comilla	169.58	47.72	305.36	164.68	291.84	97.10
		0.1576	0.0443	0.2837	0.1530	0.2712	0.0902
7	Cox's Bazar	165.93	47.72	304.50	162.97	259.24	98.86
		0.1597	0.0459	0.2930	0.1568	0.2495	0.0951
8	Dhaka	166.69	47.72	302.78	152.82	250.77	97.71
		0.1637	0.0469	0.2973	0.1500	0.2462	0.0959
9	Dinajpur	105.35	28.41	202.98	143.24	209.99	61.87
		0.1637	0.0469	0.2973	0.1500	0.2462	0.0959
10	Faridpur	134.61	36.69	248.28	166.76	227.69	79.93
		0.1401	0.0378	0.2700	0.1905	0.2793	0.0823
11	Feni	167.78	47.72	313.51	166.94	252.44	97.85
		0.1506	0.0410	0.2777	0.1865	0.2547	0.0894
12	Hatiya	141.77	41.86	275.27	137.42	253.21	90.56
		0.1604	0.0456	0.2997	0.1596	0.2413	0.0935
13	Ishurdi	134.70	36.69	254.83	169.31	207.51	79.12
		0.1508	0.0445	0.2928	0.1462	0.2693	0.0963
14	Jessore	116.10	32.21	223.53	140.88	230.58	69.91
		0.1527	0.0416	0.2889	0.1919	0.2352	0.0897
15	Khepupara	68.63	20.14	145.58	89.61	176.51	42.80
		0.1428	0.0396	0.2749	0.1732	0.2835	0.0860
16	Khulna	166.24	47.72	305.70	161.80	279.51	98.62
		0.1263	0.0371	0.2680	0.1649	0.3249	0.0788
17	Kutubdia	166.87	47.72	290.28	164.67	328.90	99.13
		0.1569	0.0450	0.2885	0.1527	0.2638	0.0931
18	Madaripur	95.50	25.31	198.78	105.47	153.39	58.41
		0.1520	0.0435	0.2645	0.1500	0.2997	0.0903
19	M.Court	167.15	47.72	305.43	161.57	289.28	97.66
		0.1564	0.0447	0.2858	0.1512	0.2707	0.0914
20	Mongla	99.14	30.50	169.72	98.66	213.02	50.75
		0.1500	0.0397	0.3121	0.1656	0.2409	0.0917
21	Mymensingh	81.97	22.90	171.68	88.93	181.95	50.81
		0.1498	0.0461	0.2565	0.1491	0.3219	0.0767
22	Patuakhali	119.05	32.21	230.92	166.02	206.61	70.30
		0.1370	0.0383	0.2870	0.1487	0.3041	0.0849
23	Rajshahi	170.81	47.72	313.60	162.33	250.05	97.74
		0.1443	0.0390	0.2799	0.2012	0.2504	0.0852
24	Rangamati	119.63	32.21	237.38	145.15	190.16	69.37
		0.1639	0.0458	0.3009	0.1557	0.2399	0.0938
25	Rangpur	151.86	41.86	267.90	161.22	316.34	86.22
		0.1507	0.0406	0.2990	0.1828	0.2395	0.0874
26	Sandwip	173.04	47.72	314.90	165.26	256.00	99.05
		0.1481	0.0408	0.2613	0.1572	0.3085	0.0841
27	Satkhira	84.68	22.90	177.31	117.06	152.84	50.01
		0.1639	0.0452	0.2982	0.1565	0.2424	0.0938
28	Shitakunda	110.26	28.41	223.00	105.43	153.64	61.50
		0.1400	0.0379	0.2932	0.1936	0.2527	0.0827
29	Srimongol	136.41	36.69	255.29	170.24	227.48	77.94
		0.1616	0.0416	0.3269	0.1545	0.2252	0.0901
30	Sylhet	165.03	47.72	298.03	154.72	269.98	102.48
		0.1509	0.0406	0.2824	0.1883	0.2516	0.0862
31	Tangail	124.46	33.00	203.24	121.12	186.39	60.43
		0.1590	0.0460	0.2871	0.1491	0.2601	0.0987
32	Teknaf	87.26	25.31	173.33	118.51	222.03	59.27
		0.1590	0.0460	0.2871	0.1491	0.2601	0.0987
Critical Chi Square Value (95% Confidence Level)		5.99	5.99	7.81	5.99	7.81	5.99
		4.8951	1.3693	9.1737	5.2104	8.4891	2.8624

Note:Chi square values less than the critical Chi square values at 95% confidence level are marked in bold & italic format

APPENDIX-C

Terminology and Relevant Theory

C.1 TERMINOLOGY

Different terms are used as variables in preliminary analysis for trend analysis and probability distribution study.

C1.1 Variables

a) **Yearly Average**: This is the arithmetic average of monthly data series of a particular year.

b) **Yearly Maximum Monthly**: This is the maximum value among 12 months of monthly average data series for a particular year.

c) **Yearly Minimum Monthly**: This is the minimum value among 12 months of monthly average data series for a particular year.

d) **Average Pre-Monsoon** (March-May): This is the arithmetic average of three successive months i.e. March to May of monthly average data series for a particular year.

e) **Average Monsoon** (June-October): This is the arithmetic average of five successive months i.e. June to October of monthly average data series for a particular year.

f) **Average Post-Monsoon** (November-February): This is the arithmetic average of four months following monsoon, two months (November and December) for a particular year & two months (January and February) of the next year of monthly average data series.

g) **Annual Total or Yearly Tota**l: This is the sum of annual or yearly data series for a particular year.

h) **Yearly Maximum Daily**: This is the maximum value of daily data series for a particular year.

i) **Yearly Minimum Daily**: This is the minimum value of daily data series for a particular year.

j) **Total Pre-Monsoon** (March-May): This is the sum of three successive months i.e. March to May of monthly total data series for a particular year

k) **Total Monsoon** (June-October): This is the sum of five successive months i.e. June to October of monthly total data series for a particular year

l) **Total Post-Monsoon** (November-February): This is the sum of four months following monsoon, two months (November and December) for a particular year & two months (January and February) of the next year of monthly total data series.

m) **Yearly Average Monthly**: This is the arithmetic average of twelve successive months of a particular year of monthly data series.

n) **Yearly Average Daily**: This is the arithmetic average of 365 successive days of a particular year of daily data series.

o) **Yearly Maximum Monthly of Monthly Average Maximum**: This is the maximum value among twelve months of monthly average of maximum data series of a particular year.

p) **Yearly Minimum Monthly of Monthly Average Maximum**: This is the minimum value among twelve months of monthly average of maximum data series of a particular year.

q) **Yearly Average Monthly of Monthly Average Maximum**: This is the arithmetic average of twelve successive months of monthly average of maximum data series of a particular year.

r) **Maximum of Monthly Average Maximum of Total Pre-Monsoon** (March-May): This is the maximum value among three successive months i.e. March to May (Pre-Monsoon) of monthly average of maximum data series for a particular year.

s) **Maximum of Monthly Average Maximum of Total Monsoon** (June-October): This is the maximum value among five successive months i.e. June to October (Monsoon) of monthly average of maximum data series for a particular year.

t) **Maximum of Monthly Average Maximum of Total Post-Monsoon** (November-February): This is the maximum value among four months following monsoon, two months (November and December) for a particular year & two months (January and February) of the next year of monthly average of maximum data series.

u) **Yearly Maximum Monthly of Monthly Average Minimum**: This is the maximum value among twelve months of monthly average of minimum data series of a particular year.

v) **Yearly Minimum Monthly of Monthly Average Minimum**: This is the minimum value among twelve months of monthly average of minimum data series of a particular year.

w) **Yearly Average Monthly of Monthly Average Minimum**: This is the arithmetic average of twelve successive months of monthly average of minimum data series of a particular year.

x) **Minimum of Monthly Average Minimum of Total Pre-Monsoon** (March-

May): This is the minimum value among three successive months i.e. March to May (Pre-Monsoon) of monthly average of minimum data series for a particular year.

y) **Minimum of Monthly Average Minimum of Total Monsoon** (June-October): This is the minimum value among five successive months i.e. June to October (Monsoon) of monthly average of minimum data series for a particular year.

z) **Minimum of Monthly Average Minimum of Total Post-Monsoon** (November-February): This is the minimum value among four months following monsoon, two months (November and December) for a particular year & two months (January and February) of the next year of monthly average of minimum data series.

C.1.2 Global Climate related

Global Warming: Global Warming is the increase in the average temperature of the Earth's near-surface air and oceans since the mid-20th century and its projected continuation. Global surface temperature increased 0.74±0.18^{o}C (1.33 ± 0.32^{o}F) during the 100 years ending in 2005 (IPCC, 2007).

Global Dimming: Global dimming in the gradual reduction in the amount of global direct irradiance at the Earth's surface that was observed for several decades after the start of systematic measurements in 1950s. The effect varies by location, but worldwide it has been estimated to be of the order of a 4% reduction over the three decades from 1960-1990 (Hergel et. Al., 2007)

Global Cooling: The term Global cooling is opposite of Global Warming, which is the global decrease in Earth's average temperature, is mostly the result of aerosol effects. Aerosols (solid tiny particles or tiny liquid droplets in a gas) are mostly created as the byproducts of fossil fuels combustion. If the number of aerosols in atmosphere is high they can have cooling effect on our planet by reducing the total amount of sunshine reaching the surface. (Global Cooling, 2009)

Global cooling was a conjecture during the 1970s of imminent cooling of the Earth's surface and atmosphere along with a posited commencement of glaciation. This hypothesis had little support in the scientific community, but gained temporary popular attention due to a combination of a slight downward trend of temperatures from the 1940s to the early 1970s and press reports that did not accurately reflect the scientific understanding of ice age cycles. In contrast to the global cooling conjecture, the current scientific opinion on climate change is that the Earth has not durably cooled, but undergone global warming throughout the twentieth century. (Wikipedia)

Wetter/Drier Winter: Due to climate change spatial distribution of rainfall pattern

has changed as a result some place become wetter than before because of increase in rainfall and some place become drier than before because of decrease in rainfall during winter.

Wetter/Drier Summer: Due to climate change spatial distribution of rainfall pattern has changed as a result some place become wetter than before because of increase in rainfall and some place become drier than before because of decrease in rainfall during summer.

C.1.3 Analytical method related

C.1.3.1 Time Series

A sequence of values collected over time on a particular variable is a time series. A single time series is called a realization. An ensemble of time series is a set of several time series measuring the same variable. Thus an ensemble is made up of several realizations.

C.1.3.1.1 Deterministic and Stochastic Component of Time series

A time series may be composed of only deterministic events, only stochastic events, or a combination of the two. Generally a hydrologic time series will be composed of a stochastic component superimposed on a deterministic component.

For example, the series composed of average daily temperature at some point would contain seasonal variation, the deterministic component, plus random deviations from the seasonal values, the stochastic components.

The deterministic component may be classified as a periodic component, a trend, a jump or a combination of these.

C.1.3.1.2 Stationarity of Time series

If the properties of a time series do not change with time, the series is called stationary.

Illustration – A stochastic process can be represented by X(t). The pdf of X(t) is denoted by p(x;t) which describes the probabilistic behavior of X(t) at specified time.

For a stationary series $p(x;t_1)$ equals $p(x;t_2)$ where t_1 and t_2 represent any two different possible times.

If $p(x;t_1)$ and $p(x;t_2)$ are not equal, the series is termed nonstationary.

C.1.3.2 Trend Analysis

Definition of trend analysis –Trend analysis is based on the idea that what has happened in the past gives traders an idea of what will happen in the future. There are three main types of trends. Those are -Short-term, Intermediate and long-term. (Investopedia)

Usefulness – In the context of climatologic data and hydrological data the necessity of trend analysis are the overall pattern of change in an indicator over time, comparing one time period to another time period, comparing one parameter to another, making future projections & prediction of climate change pattern

C.1.3.3 Probability Distribution

In probability and statistics, a probability distribution assigns a probability to each of the possible outcomes of a random experiment. (Wikipedia)

There are three **definitions** of probability

i) Classical probability distribution: The classical definition applies when there are n equally likely outcomes to an experiment. It is obtained by dividing the number of favorable outcomes by the total number of possible outcomes. The probability of certain events is already known or the resulting probabilities are definitive. For example:

(1) The chance that a woman gives birth to a male or female baby (p = 0.50 or ½),

(2) The chance that tail or head appears in a toss of coin (p = 0.50 or ½), and

(3) The chance that one spot will appear in die-rolling (p = 0.16 or 1/6)

ii) Empirical Probability Distribution: That is based on past experience. This is determined dividing the number of times an event happens by the total number of observations. For example:

(1) 383 of 751 business graduates were employed in the past. The probability that a particular graduate will be employed in his or her major area is383/751 = 0.51 or 51%.

(2) The probability that your income tax return will be audited if there are two million mailed to your district office and 2,400 are to be audited is2,400/2,000,000 = 0.0012 or 0.12%.

iii) Subjective Probability Distribution: Subjective probability is a probability assigned to an event based on whatever evidence is available. It is an educated guess. Unlike empirical probability, it is not based on past experience. Subjective probability is obtained by evaluating the available options and by assigning the probability. Examples of events that require computing subjective probability:

(1) Estimating the probability that a person wins a jackpot lottery.

(2) Estimating the probability that the GM will lose its first ranking in car sales.

Types of Probability distribution –

(Probability: Concepts and Applications, 2008)

There are mainly two types of probability distribution- Discrete probability distribution & Continuous Probability distribution.

Discrete probability distribution	Continuous probability distribution
- Binomial distribution	- Normal distribution
- Geometric distribution	- Uniform distribution
- Negative Binomial distribution	- Exponential distribution
- Poisson distribution	- Log-normal distribution
- Exponential distribution	- Gamma distribution
- Gamma distribution	- Beta distribution
- Multinomial distribution	- Pearson distribution
	- Extreme Value Type-I distribution
	- Extreme Value Type-III distribution

Source: (Hann, C.T)

Application of Probability Distribution

- The concept of the probability distribution and the random variables which they describe underlies the mathematical discipline of probability theory, and the science of statistics. There is spread or variability in almost any value that can be measured in a population (e.g. height of people, durability of a metal, sales growth, traffic flow, etc.); almost all measurements are made with some intrinsic error; in physics many processes are described probabilistically, from the kinetic properties of gases to the quantum mechanical description of fundamental particles. For these and many other reasons, simple numbers are often inadequate for describing a quantity, while probability distributions are often more appropriate. (Wikipedia)

-If we know the likelihood (probability, chance, risk, p) that an event, E_1, will take place, then we can make some predictions for the future. For instance, if the probability of getting a warm spring in western Norway is $p = 0.64$ after having observed warm sea surface temperatures in the North Sea during the preceding winter,

one may use this knowledge to make seasonal predictions. In the long run, such predictions should give more (correct) hits than a pure guess (p=50%).

Probability is an important concept for making forecasts and risk assessments**.**

-Some practical uses of probability distributions are:

- To calculate confidence intervals for parameters and to calculate critical regions for hypothesis tests.
- For univariate data, it is often useful to determine a reasonable distributional model for the data.
- Statistical intervals and hypothesis tests are often based on specific distributional assumptions. Before computing an interval or test based on a distributional assumption, we need to verify that the assumption is justified for the given data set. In this case, the distribution does not need to be the best-fitting distribution for the data, but an adequate enough model so that the statistical technique yields valid conclusions.
- Simulation studies with random numbers generated from using a specific probability distribution are often needed. (http://www.itl.nist.gov/div898/handbook/eda/section3/eda36.htm)

Analytical Methods of Probability Distribution:

i) Discrete probability distributions -

- Binomial distribution: The probability of X=x occurrences of an event in n independent trials if p is the probability of an occurrences in a single trial is given by

$$f_x(x;n,p) = \binom{n}{x} p^x q^{n-x} \quad x = 0,1,2,3,\ldots\ldots\ldots n \text{ ....(c.1)}$$

The mean and variance of the binomial distributions are

$$E(X) = np \text{ ....(c.2)}$$

$$Var(X) = npq \text{ ....(c.3)}$$

- Geometric distribution: The probability that the first exceedence (or success) of a Bernoulli trial occurs on the X^{th} trial can be found by noting that for the first exceedance to be on the X^{th} trial there must be X-1 preceding trials without an exceedance followed by 1 trial with an exceedance. Thus the desired probability is pq^{x-1}. This is known as the geometric distribution

$$f_x(x ; p) = p\, q^{n-1} \quad x = 1,2,3,\ldots\ldots\ldots \text{ ....(c.4)}$$

The mean and variance of the geometric distributions are

$E(X) = 1/p$ ....(c.5)

$Var(X) = q/p^2$ ....(c.6)

- Negative Binomial distribution: The probability that the k^{th} exceedance (success) occurs on the X^{th} trial ($X \geq k$) of a Bernoulli process can be found by noting that there must be k-1 exceedences in the X-1 trials preceeding the k^{th} exceedance on the X^{th} trial. The probability of k-1 exceedances in X-1 trials is given by the binomial distribution as $\binom{x-1}{k-1} p^{k-1} q^{x-k}$. The probability that the X^{th} trial results in an exceedance is p so the desired probability is given by the negative binomial distribution.

$f_x(x; k, p) = \binom{x-1}{k-1} p^k q^{x-k}$ $x = k, k+1,$…… ....(c.7)

The mean and variance of the negative binomial distributions are

$E(X) = k/p$ ....(c.8)

$Var(X) = kq/p^2$ .... (c.9)

- Poisson distribution: Consider a Bernoulli process defined over an interval of time (or space) so that p is the probability that an event may occur during the time interval. If the time interval is allowed to become shorter and shorter so that the probability, p, of an event occurring in the interval gets smaller and the number of trials, n, increase in such a fashion that np remains constant, then the expected number of occurrences in any total time intervals remains the same. It can be shown that as n gets large and p gets small so that np remains a constant, λ, the binomial distribution approaches the poisson distribution given by

$f_x(x ; \lambda) = \lambda^x e^{-\lambda} / x!$ ....(c.10)

$x = 0, 1, 2$……, $\lambda > 0$ .... (c.11)

The mean and variance of the poisson distribution are

$E(X) = \lambda$ .... (c.12)

$Var(X) = \lambda$ .... (c.13)

- Exponential distribution: The probability distribution of the time, T, between occurrences of the event can be found by noting that the prob($T \leq t$) is equal to 1-prob($T>t$). The prob ($T>t$) is equal to the probability of no occurrences in time t which is $f_x(0; \lambda, t)$ or $e^{-\lambda t}$.

Thus

$Prob(T \leq t) = P_T(t; \lambda) = 1-e^{-\lambda t}$ ....(c.14)

This is a cumulative distribution known as exponential distribution.

The mean and variance of the exponential distribution are

$E(X) = 1/\lambda$ ....(c.15)

$Var(X) = 1/\lambda^2$ ....(c.16)

- Gamma distribution: The probability distribution of the time of the n^{th} occurrence can be found by noting that the time to the n^{th} occurrence is the sum of n independent random variables, $T_1 + T_2 + \ldots\ldots\ldots\ldots\ldots\ldots + T_n$, from the exponential distribution. The method of derived distributions can be used with the result that the probability density function of the time to the n^{th} occurrence is

$P_T(t; n, \lambda) = \lambda^n t^{n-1} e^{-\lambda t} / (n-1)!$ ....(c.17)

Where, $t>0$; $\lambda>0$; $n = 1,2\ldots\ldots\ldots..$

The mean and variance of the Gamma distribution are

$E(T) = n/\lambda$ ....(c.18)

$Var(T) = n/\lambda^2$ ....(c.19)

- Multinomial distribution: The binomial can be generalized to include the probabilities of outcome of several types rather than the two possible outcomes of the binomial. If the probabilities associate with each of k distinct outcomes are p_1 , p_2 , $\ldots\ldots\ldots\ldots\ldots p_k$, then in independent trials the probability of x_1 outcomes of type 1, x_2 outcomes of type 2,$\ldots\ldots\ldots..x_k$ outcomes of type k is given by the multinomial distribution as

$f_{\underline{\lambda}}(\underline{x}; n, \underline{p}) = n! \prod^k_{i=1} p^{xi}_i / x_i!$ ....(c.20)

Where $\underline{x}$ and $\underline{p}$ are vecors.

The mean and variance of the multinomial distributions are

$E(X_i) = np_i$ ....(c.21)

$Var(X_i) = np_i (1- p_i)$ ....(c.22)

ii) Some Continuous probability distributions are-

- Normal distribution: The normal distribution is a two parameter (μ and σ^2) distribution which is bell-shaped, continuous and symmetrical about μ (the co-efficient of skew is zero). The parameters μ and σ^2 are sometimes denoted as location and scale parameters. A common notation for indicating that a random variable is normally distributed with mean μ and variance σ^2 is $N((\mu,\sigma^2)$.

The random variable Z is said to be standardized (has $\mu = 0$ and $\sigma^2 = 1$) and N(0,1) is said to be standard normal distribution. The standard normal distribution is given by

$P_z(z) = (2\prod)^{-1/2} e^{-z^{\wedge}2 / 2}$ $-\infty < z < \infty$ ....(c.23)

And the cumulative standerd normal is given by

$Prob(Z \leq z) = P_z(z) = \int_{-\infty}^{z} (2\prod)^{-1/2} e^{-t^{\wedge}2 / 2} dt$ ....(c.24)

Normal Approximation:

- Binomial distribution: The normal distribution approximates the binomial distribution if n is large. Thus as n gets large the distribution of

$Z = (X-\mu)/\sigma = (X-np)/ \sqrt{\{np(1-p)\}}$ approaches a N(0, 1) ....(c.25)

- Poisson distribution: The poisson distribution may be approximated by a normal distribution. In this case the distribution of

$Z = (X-\mu)/\sigma = (X-\lambda)/\lambda^{1/2}$ approaches a N (0, 1) ....(c.26)

- Uniform distribution: If a continuous random process is defined over an interval a to b and the probability of an outcome of this process being in a subinterval of a to b is proportional to the length of the subinterval, the process is said to be uniformly distributed over the interval a to b. The probability density function for the continuous uniform distribution is

$p_x(x) = 1/(\beta - \alpha)$ for $\alpha \leq X \leq \beta$ ....(c.27)

And the cumulative distribution function is

$p_x(x) = (x - \alpha) /(\beta - \alpha)$ for $\alpha \leq X \leq \beta$ ....(c.28)

The mean and variance of the uniform distribution are

$E(X) = (\beta + \alpha)/2$ ....(c.29)

$Var(X) = (\beta - \alpha)^{2}/12$ ....(c.30)

- Exponential distribution: The exponential density function is given by

$p_x(x) = \lambda e^{-\lambda x}$ $x>0,\ \lambda>0$ ....(c.31)

and the cumulative exponential by

$P_x(x) = \int_{0}^{x} \lambda e^{-\lambda t} dt = 1- e^{-\lambda x}$ $x>0$ ....(c.32)

The mean and variance of the exponential distribution are

$E(X) = 1/\lambda$ ....(c.33)

$Var(X) = 1/\lambda^2$ ....(c.34)

- Log-normal distribution: If a random variable X is made up of the sum of many small effects, then X might be expected to be normally distributed. Similarly if X is equal to the product of many small effects, that is if $X = X_1 X_2 \ldots\ldots X_n$, then the lnX can be expected to be normally distributed. This can be seen by letting $Y=\ln(X_1 X_2 \ldots\ldots X_n) = \ln X_1 + \ln X_2 + \ldots\ldots\ldots\ldots + \ln X_n$. Since the X_i are random variables, the $\ln X_i$ are also random variables and Y=lnX is a random variable made up from the sum of many other random variables. From the central limit theorem, Y can be expected to be normally distributed with mean μ_y and variance σ^2_y.

The distribution of X can be found from

$p_x(x) = p_y(y) \mid dy/dx \mid$ ....(c.35)

Since Y = lnX ....(c.36)

$\mid dy/dx \mid = 1/x \quad x>0$ ....(c.37)

and

$p_x(x) = (2\prod x^2\sigma^2_y)^{-1/2} \exp[-1/2(\ln x - \mu_y)^2/\sigma^2_y] \quad x>0$ ....(c.38)

Y = lnX is normally distributed while X is log-normally distributed.

The parameters μ_y and σ^2_y can be estimated by

$y_i = \ln x_i$ ....(c.39)

Then

$\bar{y} = \sum y_i/n$ ....(c.40)

and $s^2_y = (\sum y_i^2 - n\ \bar{y}^2)/(n-1)$ ....(c.41)

with all of the summations from 1 to n.

The mean and variance of the lognormal distribution are

$E(X) = \exp(\mu_y + \sigma^2_y/2)$ ....(c.42)

$Var(X) = \mu_x^2 [\exp(\sigma^2_y) - 1]$ ....(c.43)

- Gamma distribution: The distribution of the sum of n exponentially distributed random variables each with parameters n and λ. In general n does not have to be an integer. The gamma density function is given by

$p_x(x) = \lambda^{\eta} x^{\eta-1} e^{-\lambda x} / \Gamma(\eta)$ x, λ, η>0 ....(c.44)

Γ(η) is the gamma function.

The mean and variance of the Gamma distribution are

E(X) = η/λ ....(c.45)

Var(X) = η/λ^2 ....(c.46)

- Beta distribution : The beta density function is given by

$p_x(x) = x^{\alpha-1}(1-x)^{\beta-1} / B(\alpha,\beta)$..... ....(c.47)

The function $B(\alpha,\beta) = \int_0^1 x^{\alpha-1} (1-x)^{\beta-1} dx$ is called the beta function. The beta function is related to the gamma function by

$B(\alpha,\beta) = \Gamma(\alpha)\,\Gamma(\beta)/\Gamma(\alpha+\beta)$ ....(c.48)

The mean and variance of the beta distribution are

E(X) = α/(α+β) ....(c.2)

Var(X) = αβ / [(α+β+1) $(\alpha+\beta)^2$] ....(c.49)

- Pearson distribution: Karl Pearson (Elderton 1953) has proposed that frequency distribution can be represented by

$P_x(x) = \exp\int_{-\infty}^{x} (t + \alpha) / (\beta_0 + \beta_1 t + \beta_2 t^2 + \ldots\ldots) dt$ ....(c.50)

-Extreme Value Type-I distribution: The probability density function for the extreme value type 1 distribution is

$P_x(x) = \exp\{ \mp (x - \beta)/\alpha - \exp[\mp (x - \beta)/\alpha]\}/ \alpha$ ....(c.51)

$-\infty < x < \infty$; $-\infty < \beta < \infty$; $\alpha > 0$

where the + applies for maximum values and the - for minimum values. The parameters α and β are scale and location parameters with β being the mode of distribution. The type 1 for maximum and minimum values are symmetrical with each other about β.

The mean and variance of the extreme value type 1 distribution are

E(X) = β + 0.577α (maximum) ....(c.52)

β - 0.577α (minimum) ....(c.53)

Var(X) = $1.645\alpha^2$ ....(c.54)

- Extreme Value Type-III distribution: The extreme value type III distribution arises when the extreme is from a parent distribution that is limited in the direction of interest. This distribution has found its greatest use in hydrology as the distribution of low stream flows. Naturally low flows are bounded by zero on the left. The type III for minimum values is also knows as the weibull distribution.. The probability density function of the extreme value type III distribution is

$$p_x(x) = \alpha(x-\varepsilon)^{\alpha-1} (\beta-\varepsilon)^{-\alpha} \exp [-\{(x - \varepsilon)/(\beta - \varepsilon)\}^{\alpha}] \text{ ....(c.55)}$$

and the cumulative distribution function becomes

$$P_x(x) = 1 - \exp [-\{(x - \varepsilon)/(\beta - \varepsilon)\}^{\alpha}] \text{ ....(c.56)}$$

By using the transformation

$$y = (x - \varepsilon)/(\beta - \varepsilon)\}^{\alpha} \text{ ....(c.57)}$$

The mean and variance of the extreme value type III distribution are

$$E(X) = \varepsilon + (\beta - \varepsilon) \Gamma(1 + 1/\alpha) \text{ ....(c.58)}$$ and

$$Var(X) = (\beta - \varepsilon)^2 [\Gamma (1 + 2/\alpha) - \Gamma^2 (1 + 1/\alpha)] \text{ ....(c.59)}$$

Testing the goodness of fit of data to probability distribution:

- Chi-Square Goodness of Fit Test: One of the most commonly used tests for goodness of fit for empirical data to specified theoretical frequency distributions is the chi-square test. This test makes a comparison between the actual number of observations and the expected number of observations that fall in the class intervals. The expected numbers are calculated by multiplying the expected relative frequency by the total number of observations. The test statistic is calculated from the relationship

$$\chi^2_c = \sum^k_{i=1} (O_i - E_i)^2 / E_i \text{ ....(c.60)}$$

Where k is the number of class intervals, O_i is the observed and E_i is the expected number of observations in the i^{th} class interval. The distribution of χ^2_c is a chi-square distribution with k-p-1 degrees of freedom where p is the number of parameters estimated from the data. The hypothesis that the data are from the specified distribution is rejected if

$$\chi^2_c > \chi^2_{1-\alpha,\, k-p-1} \text{ ....(c.61)}$$

- The Kolmogorov-smirnov Test : This test is conducted as follows:

1) Let $P_x(x)$ be the completely specified theoretical cumulative distribution function under the null hypothesis.
2) Let S_n (x) be the sample cumulative density function based on n observations. For any observed x, S_n (x) = k/n where k is the number of observations less than or equal to x.
3) The maximum deviation, D. defined by

$$D = \max [P_x(x) - S_n(x)] \text{ ....(c.62)}$$

4) If, for the chosen significant level, the observed value of D is greater than or equal to the critical tabulated value of the Kolmogorov-Smirnov statistic, the hypothesis is rejected. (Hann, C.T., 1977).

APPENDIX-D

Sample Calculation

D.1 SAMPLE CALCULATION FOR TREND ANALYSIS

D.1.1 Sample data

For sample calculation of trend analysis, the rainfall data (mm) for Barisal station has been chosen as a random sample. Sample data (Barisal, Rainfall) follows:

Table D.1: Sample data of Rainfall (mm) for Barisal station

Year	Jan.	Feb.	Mar.	Apr.	May	Jun	Jul.	Aug.	Sep	Oct	Nov.	Dec	Annual	Yearly maximum monthly	Yearly minimum monthly	Yearly average monthly	Yearly average daily	Total Pre-monsoon(March-May)	Total monsoon (Jun-oct)	Total Post-monsoon (Nov-Feb)
1980	0	55	47	13	235	272	526	297	192	282	0	0	1919	526	0	159.9	5	295	1569	67
1981	24	43	115	412	280	433	521	217	173	71	0	33	2322	521	0	193.5	6	807	1415	90
1982	0	57	17	178	65	465	223	593	219	6	34	11	1868	593	0	155.7	5	260	1506	92
1983	8	39	18	92	318	292	399	575	312	192	48	19	2312	575	8	192.7	6	428	1770	83
1984	16	0	1	102	283	1025	448	431	224	118	0	1	2649	1025	0	220.8	7	386	2246	4
1985	1	2	45	64	226	322	291	308	180	198	8	0	1645	322	0	137.1	5	335	1299	14
1986	6	0	7	102	181	254	381	252	526	135	274	1	2119	526	0	176.6	6	290	1548	282
1987	4	3	8	150	96	275	568	683	302	93	37	0	2219	683	0	184.9	6	254	1921	59
1988	0	22	65	96	393	565	422	459	228	101	113	0	2464	565	0	205.3	7	554	1775	127
1989	0	14	1	89	164	206	453	203	413	451	0	0	1994	453	0	166.2	5	254	1726	79
1990	0	79	182	139	352	386	457	299	190	194	70	30	2378	457	0	198.2	7	673	1526	124
1991	10	14	38	53	191	562	356	369	232	497	54	16	2392	562	10	199.3	7	282	2016	172
1992	4	98	0	1	205	190	299	326	210	98	8	0	1439	326	0	119.9	4	206	1123	44
1993	1	35	173	216	352	384	408	556	245	134	12	0	2516	556	0	209.7	7	741	1727	29
1994	4	13	92	101	178	571	202	378	144	87	7	0	1777	571	0	148.1	5	371	1382	70
1995	1	62	6	12	144	657	517	342	208	156	153	0	2258	657	0	188.2	6	162	1880	172
1996	0	19	12	131	98	446	314	322	202	270	4	1	1819	446	0	151.6	5	241	1554	36
1997	1	30	79	203	235	205	406	191	378	7	11	12	1758	406	1	146.5	5	517	1187	225
1998	148	54	273	251	179	208	616	516	254	89	270	0	2858	616	0	238.2	8	703	1683	270
1999	0	0	0	20	212	260	527	404	301	228	1	2	1955	527	0	162.9	5	232	1720	38
2000	19	16	50	135	246	286	389	203	245	171	10	0	1770	389	0	147.5	5	431	1294	27
2001	0	17	4	16	282	641	556	191	149	305	67	0	2228	641	0	185.7	6	302	1842	86

Year	Jan.	Feb.	Mar.	Apr.	May	Jun	Jul.	Aug.	Sep	Oct	Nov.	Dec	Annual	Yearly maximum monthly	Yearly minimum monthly	Yearly average monthly	Yearly average daily	Total Pre-monsoon(March-May)	Total monsoon (Jun-oct)	Total Post-monsoon (Nov-Feb)
2002	19	0	36	101	324	577	717	272	346	53	92	0	2537	717	0	211.4	7	461	1965	96
2003	0	4	117	104	85	521	243	186	206	301	0	28	1795	521	0	149.6	5	306	1457	28
2004	0	0	11	87	126	316	241	478	1067	203	0	0	2529	1067	0	210.8	7	224	2305	11
2005	11	0	138	26	85	326	463	302	174	415	0	3	1943	463	0	161.9	5	249	1680	3
2006	0	0	4	41	274	352	384	378	522	41	2	0	1998	522	0	166.5	5	319	1677	74
2007	0	72	33	50	146	471	560	218	326	357	95	0	2328	560	0	194.0	6	229	1932	160
2008	41	24	22	16	64	239	550	357	210	341	0	0	1864	550	0	155.3	5	102	1697	

D.1.2 Trend Analysis

Trend analysis of each variable including twelve months of each climatologic parameter has been carried out over time that means year. Figure D.1, D.2 and D.3 are sample output of trend analysis for Barisal station for rainfall parameter.

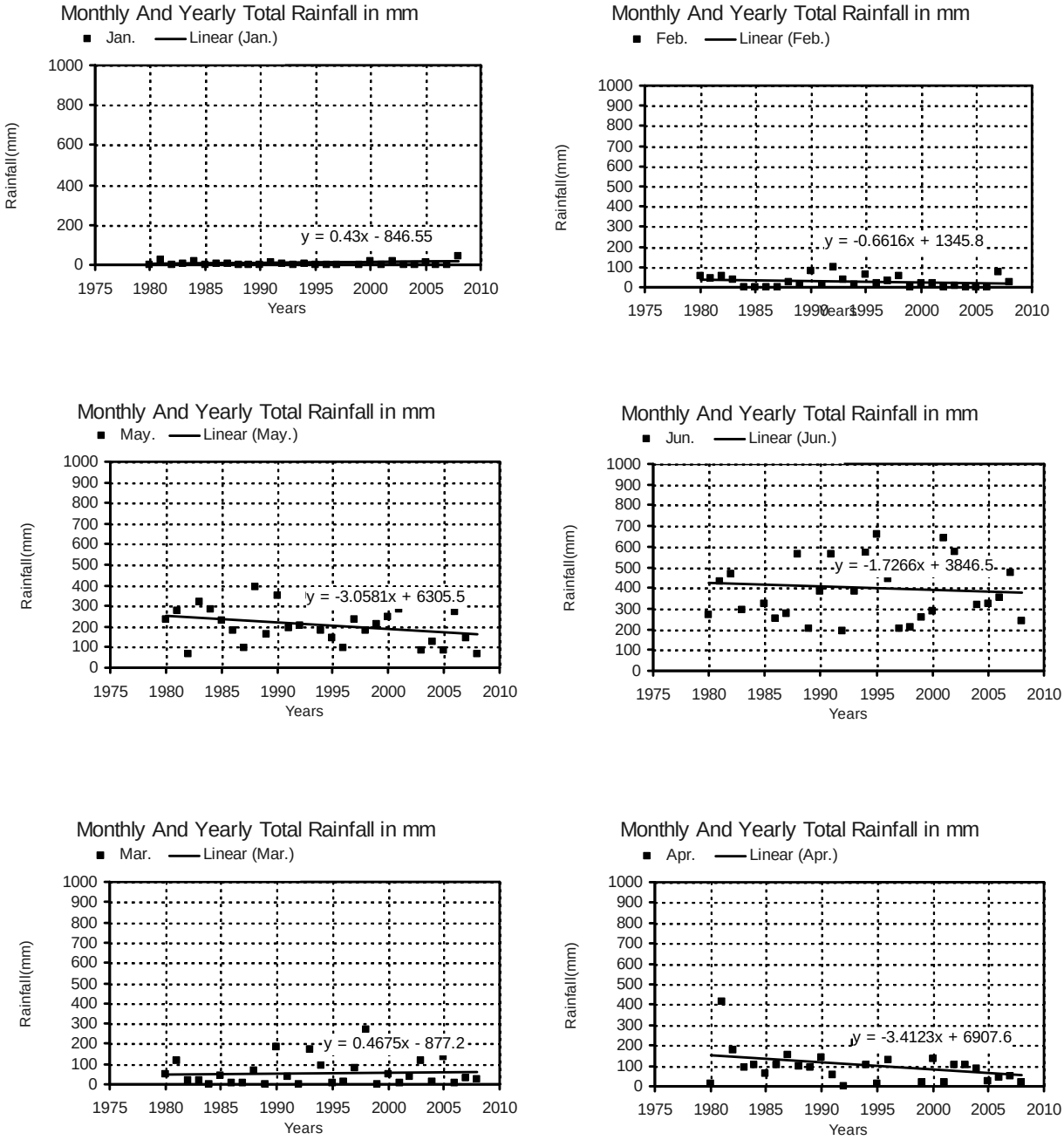


Figure D.1: *Sample output of trend analysis for rainfall variables (Barisal)*

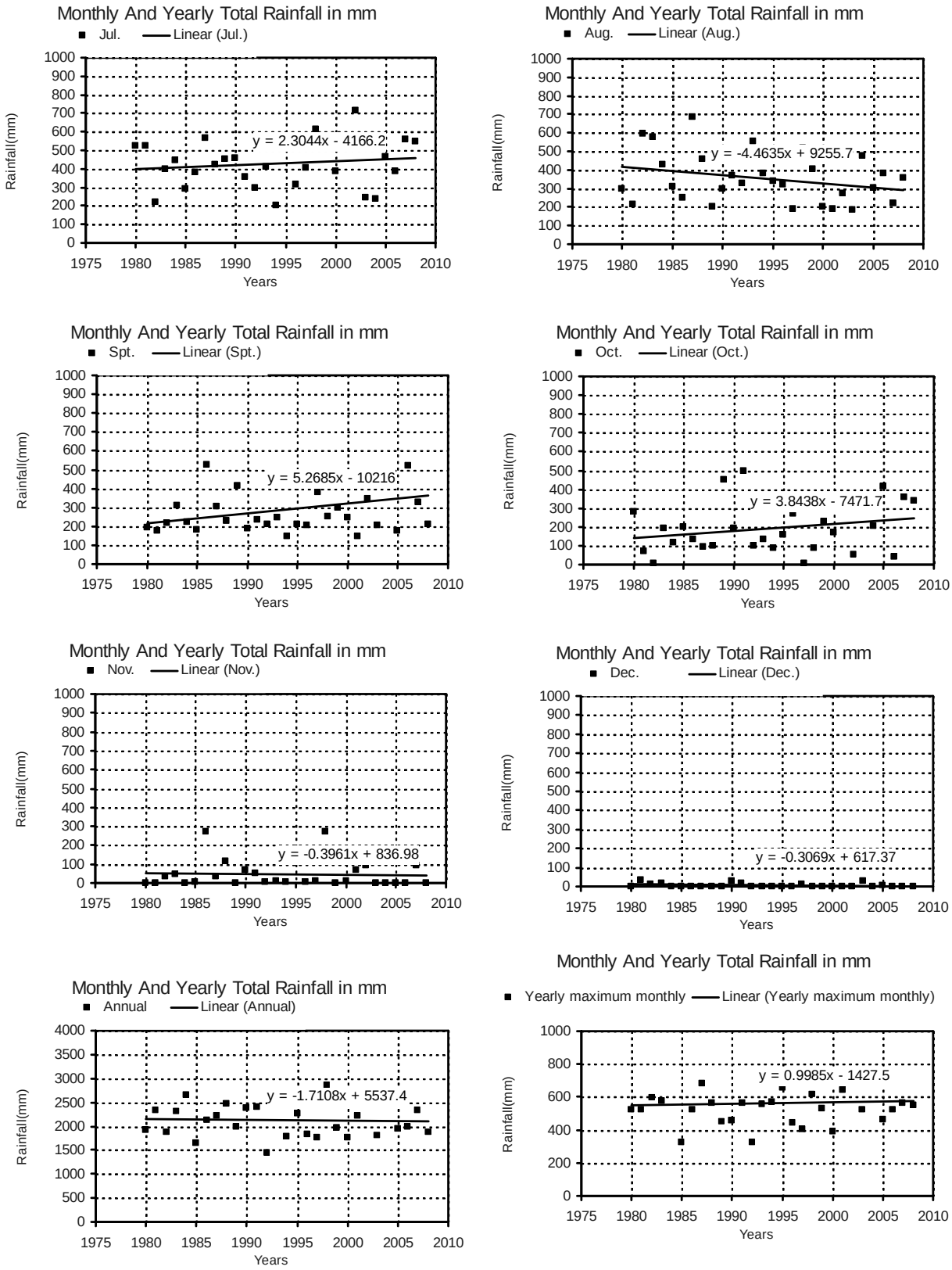
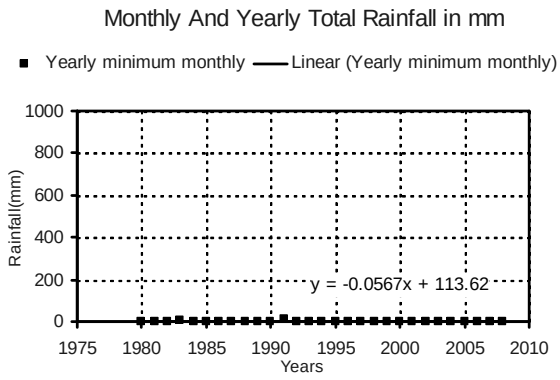
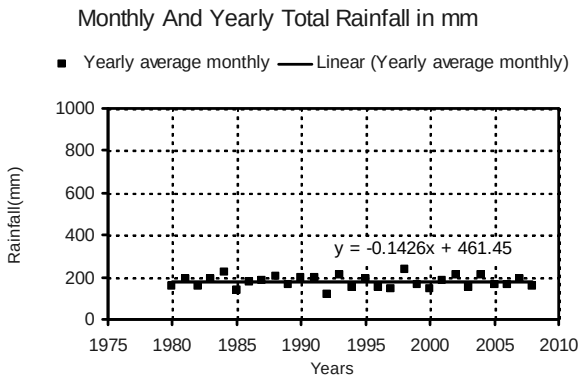
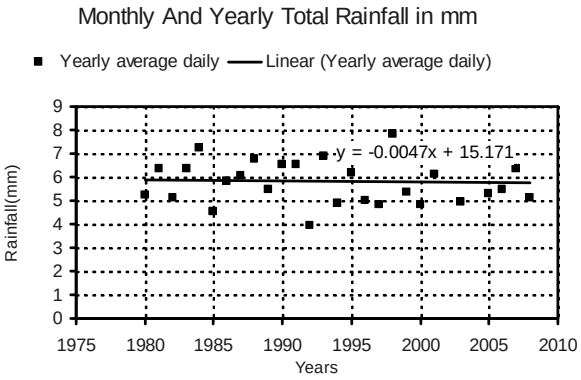
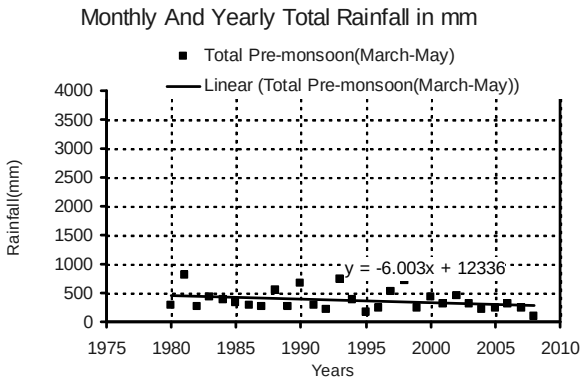


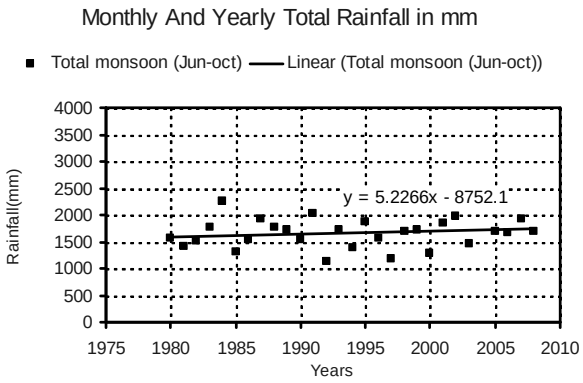
Figure D.2: Sample output of trend analysis for rainfall variables (Barisal)











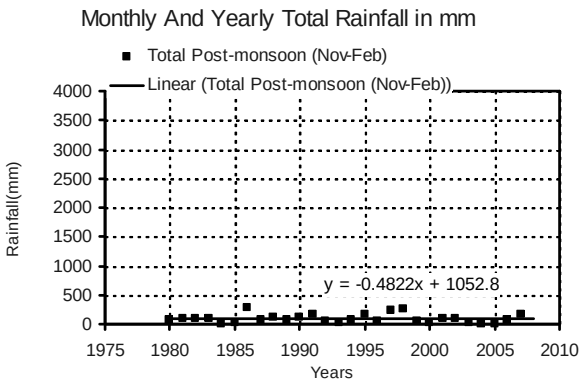


Figure D.3: Sample output of trend analysis for rainfall variables (Barisal)

D.1.3 Sample calculation for Probability Distribution

D.1.3.1 Sample data

For sample calculation the rainfall data (mm) from Barisal station for the month of July has been chosen as a random sample.

Table D.2: Sample Data (Barisal, Rainfall, July) follows*:*

Year	Jul.	Log
1980	526	2.72099
1981	521	2.71684
1982	223	2.3483
1983	399	2.60097
1984	448	2.65128
1985	291	2.46389
1986	381	2.58092
1987	568	2.75435
1988	422	2.62531
1989	453	2.6561
1990	457	2.65992
1991	356	2.55145
1992	299	2.47567
1993	408	2.61066
1994	202	2.30535
1995	517	2.71349
1996	314	2.49693
1997	406	2.60853
1998	616	2.78958
1999	527	2.72181
2000	389	2.58995
2001	556	2.74507
2002	717	2.85552
2003	243	2.38561
2004	241	2.38202
2005	463	2.66558
2006	384	2.58433
2007	560	2.74819
2008	550	2.74036

Following values are obtained from this data:

Max	717
Min	202
Mean μ	428.9
Std. Dev. σ	126.7

D.1.3.2 Normal distribution

Table D.3: Chi-square test using Normal distribution*:*

Class Limit		Observed #, O	Z	Z (absolute)	Sign	Z_1	Z_2	$P_Z(Z_1)$	$P_Z(Z_2)$	$P_Z(Z)$ (absolute)	$P_Z(Z)$	Expected cumulative relative frequency	Expected relative frequency	Expected Number, E	χ^2
Lower Limit	Upper Limit														
200	310	6	-0.9381	0.9381	-	0.9300	0.9400	0.8238	0.8264	0.8259	0.1741	0.1511	0.1511	4.38	0.596
310	420	8	-0.0699	0.0699	-	0.0600	0.0700	0.5239	0.5279	0.5279	0.4721	0.4099	0.2587	7.50	0.033
420	530	9	0.7982	0.7982	+	0.7900	0.8000	0.7852	0.7881	0.7876	0.7876	0.6837	0.2739	7.94	0.141
530	640	5	1.6664	1.6664	+	1.6600	1.6700	0.9515	0.9525	0.9521	0.9521	0.8266	0.1429	4.14	0.177
640	750	1	2.5345	2.5345	+	2.5300	2.5400	0.9943	0.9945	0.9944	0.9944	0.8633	0.0367	1.06	0.004
	N =	29												**Computed Chi square value =**	**0.951**

Z, the reduced variable, is calculated using the following formula:

$Z = \frac{X - \mu}{\sigma}$, where, X = upper class limit; μ = Arithmetic mean; σ = Standard deviation

for the first row, $Z = \frac{X - \mu}{\sigma} = \frac{310 - 428.862}{126.7} = -0.9381$

P(-Z) = 1 – P(Z)

Probability for this value P(Z) is determined using the probability table. In the table no data for P(0.9381) is provided. But P(0.93) and P(0.94) is used to calculate the interpolated value for P(0.9381).

P(0.9381) = P(0.93) + (0.9381 – 0.93) {P(0.94) – P(0.93)}/(0.94-0.93)= 0.8238 + (0.0081)(0.8264 – 0.8238)/(0.01) = 0.8259

P(-0.9381) = 1 – P(0.9381)=1 – 0.8259=0.1741

Expected cumulative relative frequency, ECRF $= \frac{\Delta x . P_z(Z)}{\sigma}$;

where, Δx =class interval

Therefore, *Expected cumulative frequency* = 110 x 0.1741 / 126.7 = 0.1511

Expected Relative frequency is calculated by subtracting two consecutive *ECRFs*. The first row is the direct value of *ECRF*, i.e. 0.1511.

For second row, *Expected Relative frequency* = 0.4099 – 0.1511 = 0.2588

Expected Number (E) = N × *Expected Relative Frequency* = 29 × 0.1511 = 4.38

Chi-square value, $\chi^2 = \frac{(O - E)^2}{E} = \frac{(6 - 4.38)^2}{4.38}$ = 0.596

Table D.4: Probability table for calculation of probabilities:

Cumulative Probability of the Standard normal distribution										
z	**0**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

D.1.3.3 Uniform distribution

Table D.5: Chi-square test using Uniform distribution:

Class Limit		Observed #, O	Expected Number, E	χ^2
Lower Limit	Upper Limit			
200	310	6	5.80	0.007
310	420	8	5.80	0.834
420	530	9	5.80	1.766
530	640	5	5.80	0.110
640	750	1	5.80	3.972
	N =	29		**6.690**

Expected number, E = N / Number of Class intervals = 29/5 = 5.80

Chi-square value, $\chi^2 = \frac{(O-E)^2}{E} = \frac{(6-5.80)^2}{5.80}$ = 0.007

D.1.3.4 Exponential Distribution

Table D.6: Chi-square test using Exponential distribution:

Class Limit		Observed #, O	Exp. Density Fn P_A (X_i)	Expected relative frequency	Expected Number, E	χ^2
Lower Limit	Upper Limit					
200	310	6	0.0011	0.1245	3.61	1.582
310	420	8	0.0009	0.0963	2.79	9.704
420	530	9	0.0007	0.0745	2.16	21.635
530	640	5	0.0005	0.0577	1.67	6.620
640	750	1	0.0004	0.0446	1.29	0.067
	N =	29			**Computed Chi square value =**	**39.608**

$\lambda = \frac{1}{\bar{x}}$, where $\bar{x} = mean$, Exp. Density Fn $P_A(x_i) = \lambda e^{-(\lambda x_i)} = \frac{e^{-\frac{310}{428.9}}}{428.9} = 0.0011$

Expected relative frequency, $f_{x_i} = \Delta x_i . P_A(x_i) = 110 \times 0.0011 = 0.1245$

Expected Number (E) = N × *Expected Relative Frequency* = 29 × 0.1245 = 3.61

Chi-square value, $\chi^2 = \frac{(O-E)^2}{E} = \frac{(6-3.61)^2}{3.61} = 1.582$

D.1.3.5 Log-normal distribution

This distribution is the same as Normal distribution except that, log values of the main data was used to construct the class intervals.

Table D.7: Chi-square test using Log-normal distribution:

Class Limit		Observed #, O									$P_Z(Z)$	Expected cumulative relative frequency	Expected relative frequency	Expected Number, E	χ^2
Lower Limit	Upper Limit		Z	Z (absolute)	Sign	Z_1	Z_2	$P_Z(Z_1)$	$P_Z(Z_2)$	$P_Z(Z)$ (absolute)					
2.30	2.42	4	-1.3760	1.3760	-	1.3700	1.3800	0.9147	0.9162	0.9156	0.0844	0.0726	0.0726	2.10	1.707
2.42	2.54	3	-0.5161	0.5161	-	0.5100	0.5200	0.6950	0.6985	0.6971	0.3029	0.2604	0.1878	5.45	1.099
2.54	2.66	11	0.3437	0.3437	+	0.3400	0.3500	0.6331	0.6368	0.6345	0.6345	0.5455	0.2851	8.27	0.902
2.66	2.78	9	1.2035	1.2035	+	1.2000	1.2100	0.8849	0.8869	0.8856	0.8856	0.7615	0.2159	6.26	1.197
2.78	2.90	2	2.0633	2.0633	+	2.0600	2.0700	0.9803	0.9808	0.9805	0.9805	0.8430	0.0816	2.37	0.056
	N =	29												**Computed Chi square value =**	**4.962**

D.1.3.6 Poisson distribution

Table D.8: Chi-square test using Poisson distribution:

Class Limit		Observed #, O									$P_Z(Z)$	Expected cumulative relative frequency	Expected relative frequency	Expected Number, E	χ^2
Lower Limit	Upper Limit		Z	Z (absolute)	Sign	Z_1	Z_2	$P_Z(Z_1)$	$P_Z(Z_2)$	$P_Z(Z)$ (absolute)					
200	310	6	-5.7396	5.7396	-	5.7300	5.7400	0.9998	0.9998	0.9998	0.0002	0.0011	0.0011	0.03	1156.563
310	420	8	-0.4279	0.4279	-	0.4200	0.4300	0.6628	0.6664	0.6657	0.3343	1.7759	1.7749	51.47	36.715
420	530	9	4.8838	4.8838	+	4.8800	4.8900	0.9998	0.9998	0.9998	0.9998	5.3106	3.5347	102.51	85.297
530	640	5	10.1955	10.1955	+	10.1900	10.2000	0.9998	0.9998	0.9998	0.9998	5.3106	0.0000	0.00	-
640	750	1	15.5072	15.5072	+	15.5000	15.5100	0.9998	0.9998	0.9998	0.9998	5.3106	0.0000	0.00	-
	N =	29												**Computed Chi square value =**	**1278.574**

In Poisson distribution is similar to normal distribution except that the *reduced variate (Z)* and *Expected Cumulative Relative Frequency (ECRF)* is calculated differently.

$$Z = \frac{X-\lambda}{\lambda^{\frac{1}{2}}} = \frac{310-428.862}{428.862^{\frac{1}{2}}} = -5.7396,$$

where X = upper class limit; λ = mean

$$\text{ECRF} = \frac{\Delta x . P_z(Z)}{\lambda^{1/2}} = \frac{110 \times 0.0002}{428.862^{1/2}} = 0.0011$$

D.1.3.7 Extreme Value (EV-I) Distribution

Table D.9: Chi-square test using EV-I distribution:

Class Limit		Observed #, O	Y	Expected cumulative relative frequency	Expected relative frequency	Expected Number, E	χ^2
Lower Limit	Upper Limit						
200	310	6	-0.6260	0.1541	0.1541	4.47	0.524
310	420	8	0.4875	0.5411	0.3870	11.22	0.925
420	530	9	1.6010	0.8173	0.2762	8.01	0.122
530	640	5	2.7144	0.9359	0.1186	3.44	0.709
640	750	1	3.8279	0.9785	0.0426	1.23	0.045
	N =	29				**Computed Chi square value =**	**2.325**

$$\alpha = \frac{\sqrt{6}}{\pi} S = \frac{\sqrt{6}}{\pi} 126.7 = 98.7912 \quad \text{(S = standard deviation)}$$

$$U = \bar{x} - 0.5772\alpha = 428.862 - 0.5772 \times 98.7912 = 371.84$$

Reduced variate, $Y = \frac{X-U}{\alpha} = \frac{310-371.84}{98.7912} = -0.6260$

ECRF, $F(x_i) = e^{-e^{-Y}} = e^{-e^{0.6260}} = 0.1541$

D.1.3.8 Goodness of Fit Test of the probability distribution methods

For explaining the computing process a sample data sheet for Post monsoon average of “Summary of Wind Speed” is chosen.

Table D.10: Sample analysis to find the best fit distribution

Wind Speed

Post-monsoon Average(November-February)

								Rank	4	3	5	1	6	2
								Comparison	1.40	1.35	3.39	**1.00**	18.02	1.16
	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
1	Barisal	9.63	5.21	33.04	6.59	682.98	5.45		0.0130	0.0070	0.0445	0.0089	0.9193	0.0073
2	Bhola	7.17	26.64	85.82	3.94	1447.90	2.95		0.0046	0.0169	0.0545	0.0025	0.9196	0.0019
3	Bogra	9.45	14.50	173.11	11.62	177.38	607.10		0.0095	0.0146	0.1743	0.0117	0.1786	0.6113
4	Chandpur	10.24	0.93	19.74	10.91	293.56	7.53		0.0299	0.0027	0.0576	0.0318	0.8561	0.0220
5	Chittagong	2.42	13.79	37.13	5.69	73.74	9.06		0.0170	0.0972	0.2618	0.0401	0.5199	0.0639
6	Comilla	5.44	22.00	38.76	1.30	201.59	1.76		0.0201	0.0812	0.1431	0.0048	0.7443	0.0065
7	Cox's Bazar	7.66	3.79	43.84	7.45	186.19	6.64		0.0300	0.0148	0.1715	0.0292	0.7285	0.0260
8	Dhaka	6.62	2.36	36.75	14.70	495.73	2.83		0.0118	0.0042	0.0657	0.0263	0.8869	0.0051
9	Dinajpur	9.99	18.43	20.35	1.27	78.78	1.45		0.0118	0.0042	0.0657	0.0263	0.8869	0.0051
10	Faridpur	9.76	2.00	30.44	18.10	206.57	8.31		0.0767	0.1415	0.1562	0.0098	0.6047	0.0111
11	Feni	11.01	1.29	21.67	18.58	200.44	7.49		0.0355	0.0073	0.1106	0.0658	0.7506	0.0302
12	Hatiya	7.01	12.00	18.69	7.25	42.42	2.01		0.0423	0.0049	0.0832	0.0713	0.7695	0.0288
13	Ishurdi	7.13	10.93	83.09	6.68	788.53	14.08		0.0784	0.1343	0.2091	0.0812	0.4746	0.0224
14	Jessore	10.37	3.07	22.31	11.41	176.43	5.85		0.0078	0.0120	0.0913	0.0073	0.8661	0.0155
15	Khepupara	2.93	10.21	19.97	3.90	93.30	2.70		0.0452	0.0134	0.0972	0.0497	0.7689	0.0255
16	Khulna	3.33	5.93	16.44	10.61	80.20	2.08		0.0220	0.0768	0.1501	0.0293	0.7014	0.0203
17	Kutubdia	1.87	8.07	44.66	7.22	187.80	5.67		0.0281	0.0500	0.1386	0.0895	0.6763	0.0176
18	Madaripur	8.65	3.07	17.15	12.95	228.74	5.20		0.0073	0.0316	0.1749	0.0283	0.7356	0.0222
19	M.Court	7.40	5.93	44.22	83.30	328.13	17.72		0.0152	0.0122	0.0909	0.1712	0.6742	0.0364
20	Mongla	4.24	12.84	30.27	16.06	96.39	19.62		0.0314	0.0111	0.0622	0.0470	0.8295	0.0189
21	Mymensingh	3.49	7.36	81.71	12.31	852.30	2.41		0.0236	0.0716	0.1687	0.0895	0.5372	0.1094
22	Patuakhali	5.17	14.86	14.17	3.91	46.05	2.13		0.0036	0.0077	0.0852	0.0128	0.8882	0.0025
23	Rajshahi	8.81	2.00	24.63	12.39	129.28	7.56		0.0599	0.1722	0.1642	0.0453	0.5337	0.0247
24	Rangamati	300.39	38.07	37.87	1.57	83.45	9.16		0.0477	0.0108	0.1334	0.0671	0.7001	0.0409
25	Rangpur	0.92	12.36	60.26	3.63	404.56	1.80		0.6384	0.0809	0.0805	0.0033	0.1774	0.0195
26	Sandwip	7.60	22.36	37.78	9.41	87.86	6.03		0.0019	0.0256	0.1246	0.0075	0.8367	0.0037

27	Satkhira	21.38	25.57	18.59	3.98	21.64	9.82		0.0445	0.1307	0.2209	0.0550	0.5137	0.0353
28	Shitakunda	16.85	21.29	24.53	2.06	120.13	8.02		0.2117	0.2532	0.1841	0.0394	0.2143	0.0972
29	Srimongol	13.36	10.83	43.77	20.22	453.19	12.77		0.0873	0.1104	0.1272	0.0107	0.6228	0.0416
30	Sylhet	6.07	6.64	105.91	5.22	480.88	3.13		0.0241	0.0195	0.0790	0.0365	0.8178	0.0231
31	Tangail	6.07	6.64	105.91	5.22	480.88	3.13		0.0100	0.0109	0.1742	0.0086	0.7911	0.0052
32	Teknaf	2.37	20.93	48.79	2.05	199.65	1.52		0.0100	0.0109	0.1742	0.0086	0.7911	0.0052
								Sum =	1.7004	1.6424	4.1194	1.2163	21.9157	1.4059

In the left table Chi-square test results of 6 distributions for all the stations were listed. The minimum value of Chi-square test denotes the best fit distribution.

For comparison between different stations all the values were converted to a scale of 1 and noted on the right table. For example:

	Station	Normal	Uniform	Exponential	Log-Normal	Poisson	EV-I		**Normal**	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
3	Bogra	9.45	14.50	173.11	11.62	177.38	607.10		0.0095	0.0146	0.1743	0.0117	0.1786	0.6113
	Sum of values = 9.45 + 14.5 + 173.11 + 11.62 + 177.38 + 607.1 = 993.16								= 9.46 ÷ 993.16	= 14.5 ÷ 993.16	= 173.11 ÷ 993.16	= 11.62 ÷ 993.16	= 177.38 ÷ 993.16	= 607.1 ÷ 993.16

The scaled values for each column of the right table were added to get the cumulative score of each distribution. The smallest cumulative distribution is the best-fit distribution. This ranking is noted at the top of the table. Besides, the comparisons of other values as a ratio to the minimum value are also noted to get a clearer picture of comparison.

Scaling

	Normal	**Uniform**	**Exponential**	**Log-Normal**	**Poisson**	**EV-I**
Sum =	1.7004	1.6424	4.1194	1.2163	21.9157	1.4059
Rank	4	3	5	1	6	2
Comparison	1.40 (=1.7004/1.2163)	1.35 (=1.6424/1.2163)	3.39 (=4.1194/1.2163)	**1.00**	18.02 (=21.9157/1.2163)	1.16 (=1.4059/1.2163)

Now it can be seen that Log-Normal is the best fit distribution. But EV-1, Uniform and Normal distributions are not that bad in comparison.

D.1.3.9 Comparison of Chi-square value with critical Chi-square value

Calculated Chi-square values were compared with the corresponding critical chi-square value for 95% confidence level to assure its adequacy. The following table D.11 shows the calculation of the degrees of freedom for different distribution. This value of the degree of freedom is then used to find the critical chi-square value from Table D.12 for 95% degrees of freedom.

TableD.11: Calculation of degrees of freedom (v)

Name of the distribution	k	l	*v* =k-l-1	Corresponding chi-square value for 95% confidence level
Normal distribution	5	2	2	5.99
Uniform distribution	5	2	2	5.99
Exponential distribution	5	1	3	7.81
Log-normal distribution	5	2	2	5.99
Poisson distribution	5	1	3	7.81
EV-1 distribution	5	2	2	5.99

Table D.12: χ^2 Distribution

V	$\chi^2_{.995}$	$\chi^2_{.99}$	$\chi^2_{.975}$	$\chi^2_{.95}$	$\chi^2_{.90}$	$\chi^2_{.75}$	$\chi^2_{.50}$	$\chi^2_{.25}$	$\chi^2_{.10}$	$\chi^2_{.05}$	$\chi^2_{.025}$	$\chi^2_{.01}$	$\chi^2_{.005}$
1	7.88	6.63	5.02	3.84	2.71	1.32	0.455	0.102	0.0158	0.0039	0.001	0.0002	0
2	10.6	9.21	7.38	5.99	4.61	2.77	1.39	0.575	0.211	0.103	0.0506	0.0201	0.01
3	12.8	11.3	9.35	7.81	6.25	4.11	2.37	1.21	0.584	0.352	0.216	0.115	0.072
4	14.9	13.3	11.1	9.49	7.78	5.39	3.36	1.92	1.06	0.711	0.484	0.297	0.207
5	16.7	15.1	12.8	11.1	9.24	6.63	4.35	2.67	1.61	1.15	0.831	0.554	0.412
6	18.5	16.8	14.4	12.6	10.6	7.84	5.35	3.45	2.2	1.64	1.24	0.872	0.676
7	20.3	18.5	16	14.1	12	9.04	6.35	4.25	2.83	2.17	1.69	1.24	0.989
8	22	20.1	17.5	15.5	13.4	10.2	7.34	5.07	3.49	2.73	2.18	1.65	1.34
9	23.6	21.7	19	16.9	14.7	11.4	8.34	5.9	4.17	3.33	2.7	2.09	1.73
10	25.2	23.2	20.5	18.3	16	12.5	9.34	6.74	4.87	3.94	3.25	2.56	2.16
11	26.8	24.7	21.9	19.7	17.3	13.7	10.3	7.58	5.58	4.57	3.82	3.05	2.6
12	28.3	26.2	23.3	21	18.5	14.8	11.3	8.44	6.3	5.23	4.4	3.57	3.07
13	29.8	27.7	24.7	22.4	19.8	16	12.3	9.3	7.04	5.89	5.01	4.11	3.57
14	31.3	29.1	26.1	23.7	21.1	17.1	13.3	10.2	7.79	6.57	5.63	4.66	4.07
15	32.8	30.6	27.5	25	22.3	18.2	14.3	11	8.55	7.26	6.26	5.23	4.6
16	34.3	32	28.8	26.3	23.5	19.4	15.3	11.9	9.31	7.96	6.91	5.81	5.14
17	35.7	33.4	30.2	27.6	24.8	20.5	16.3	12.8	10.1	8.67	7.56	6.41	5.7
18	37.2	34.8	31.5	28.9	26	21.6	17.3	13.7	10.9	9.39	8.23	7.01	6.26
19	38.6	36.2	32.9	30.1	27.2	22.7	18.3	14.6	11.7	10.1	8.91	7.63	6.84
20	40	37.6	34.2	31.4	28.4	23.8	19.3	15.5	12.4	10.9	9.59	8.26	7.43
21	41.4	38.9	35.5	32.7	29.6	24.9	20.3	16.3	13.2	11.6	10.3	8.9	8.03
22	42.8	40.3	36.8	33.9	30.8	26	21.3	17.2	14	12.3	11	9.54	8.64
23	44.2	41.6	38.1	35.2	32	27.1	22.3	18.1	14.8	13.1	11.7	10.2	9.26
24	45.6	43	39.4	36.4	33.2	28.2	23.3	19	15.7	13.8	12.4	10.9	9.89
25	46.9	44.3	40.6	37.7	34.4	29.3	24.3	19.9	16.5	14.6	13.1	11.5	10.5
26	48.3	45.6	41.9	38.9	35.6	30.4	25.3	20.8	17.3	15.4	13.8	12.2	11.2
27	49.6	47	43.2	40.1	36.7	31.5	26.3	21.7	18.1	16.2	14.6	12.9	11.8
28	51	48.3	44.5	41.3	37.9	32.6	27.3	22.7	18.9	16.9	15.3	13.6	12.5
29	52.3	49.6	45.7	42.6	39.1	33.7	28.3	23.6	19.8	17.7	16	14.3	13.1
30	53.7	50.9	47	43.8	40.3	34.8	29.3	24.5	20.6	18.5	16.8	15	13.8
40	66.8	63.7	59.3	55.8	51.8	45.6	39.3	33.7	29.1	26.5	24.4	22.2	20.7
50	79.5	76.2	71.4	67.5	63.2	56.3	49.3	42.9	37.7	34.8	32.4	29.7	28

v	$\chi^2_{.995}$	$\chi^2_{.99}$	$\chi^2_{.975}$	$\chi^2_{.95}$	$\chi^2_{.90}$	$\chi^2_{.75}$	$\chi^2_{.50}$	$\chi^2_{.25}$	$\chi^2_{.10}$	$\chi^2_{.05}$	$\chi^2_{.025}$	$\chi^2_{.01}$	$\chi^2_{.005}$
60	92	88.4	83.3	79.1	74.4	67	59.3	52.3	46.5	43.2	40.5	37.5	35.5
70	104.2	100.4	95	90.5	85.5	77.6	69.3	61.7	55.3	51.7	48.8	45.4	43.3
80	116.3	112.3	106.6	101.9	96.6	88.1	79.3	71.1	64.3	60.4	57.2	53.5	51.2
90	128.3	124.1	118.1	113.1	107.6	98.6	89.3	80.6	73.3	69.1	65.6	61.8	59.2
100	140.2	135.8	129.6	124.3	118.5	109.1	99.3	90.1	82.4	77.9	74.2	70.1	67.3