2.3.1 STUDENT CENTRIC METHODS

Department of Statistics

STUDENT CENTRIC METHODS

Experiential Learning	Participative Learning	Problem-Solving
• Lab sessions • Project & Internship • Group Discussions • PPT Presentations	• Practical Demonstration • Student seminars • Competitions – Quiz • Work Shops • Guest Lectures • Field Trips • Plantations	• Campus Recruitment Training programmes • Assignments • Question bank preparation • Mini Projects

2022 -2023			
S.No	**Name of the Event**	**Date**	**No. of Students Participated**
1.	Group Discussion	24-6-2023	173
2.	PPT	23-6-2023	98
3.	Quiz	22-6-2023	173
4.	Workshop	21-6-2023	322
2021 -2022			
5.	Seminar Presentation	19-4-2022 to 21-4-2022	86
6.	Quiz	18-4-2022	157
7.	Special Lecture	23-4-2022	239
2019 -2020			
8.	Group Discussion	4-2-2020	113
9.	PPT	5-2-2020	83
10.	Quiz	6-2-2020	293
11.	Special Lecture	23-1-2020	196
12.	Tree Plantation	29-6-2019	183
2018 -2019			
13.	Paper Presentation	6-2-2019	54
14.	Quiz	5-2-2019	88

Experiential Learning

GROUP DISCUSSION

The Department of Statistics conducted GROUP DICUSSION competition in the Academic year 2022-2023 on 24th June 2023 on the topic **"Advantages and Disadvantages on the usage of Mobile phones".** All the students of the Department of 1st ,2nd & final year BSc-MSCs of 173 students were attended. and 16 Students were participated in the competition. Four groups of four members each had actively participated to perform their comprehensive level. **The Group C of Sk.Ruksana & Team** won the first prize and the **Group A of A.Kavya & Team** got the Second prize. There were presented with certificates.

PARTICIPANTS LIST IN GROUP DISCUSSION

S. No	Group-A	Group-B	Group-C	Group-D
1.	B.Sruthi I BSc (MSCs)	Sk.Karishma Begum I BSc (MSCs)	Sk.Ruksana III BSc (MSCs)	Y.Nithyasri I BSc (MSCs)
2.	P.Ramya I BSc (MSCs)	K.Deepthi III BSc (MSCs)	P.Sri Naga Durga II BSc (MSCs)	Sk.Reshu II BSc (MSCs)
3.	K.HrudayaPani II BSc (MSCs)	G.Gayathri III BSc (MSCs)	D.Suma Latha II BSc (MSCs)	T.Rajeswari II BSc (MSCs)
4.	A.Kavya II BSc (MSCs)	Sr:G.Sushma II BSc (MSCs)	Sr.S.Sucharitha I BSc (MSCs)	Md.Raisa Kousar II BSc (MSCs)


ST ANN'S COLLEGE FOR WOMEN

The Department of Statistics conducted GROUP DICUSSION competition in the Academic year 2019-2020 on 04th February 2020 on the topic **"Benefits of Registration of Births and Deaths".** All the students of the Department of II B Sc - MSCs of 113 students were attended and 30 Students were participated in the competition. Six groups of five members each had actively participated to perform their comprehensive level. **The Spearman's Group of Sk.Jaanu & Team** won the first prize and the **Fisher's Group of B.Tejaswini & Team** got the Second prize. There were presented with certificates and gifts by the Principal.

PARTICIPANTS LIST IN GROUP DISCUSSION

S.No	Bowley's Group	C.R.Rao's Group	Fisher's Group	Karlpearson's Group	P.C.Mahalanobis Group	Spearman's Group
1.	K. Kalyani (II MSCs)	G. Mounika (II MSCs)	A.Pavithra (II MSCs)	A. Triveni (II MSCs)	J. Anuradha (II MSCs)	B. Prameela (II MSCs)
2.	L.SivaParvathi (II MSCs)	G. Mercy Ran (II MSCs)	B.Durga Bai (II MSCs)	Ch. Poojitha (II MSCs)	K. Hena Priyanka (II MSCs)	P. Sireesha (II MSCs)
3.	N. Velangini (II MSCs)	K. Gowthami (II MSCs)	B.Tejaswini (II MSCs)	M .Pushpa Leela (II MSCs)	M. Jyothi(II MSCs)	Sk. Jaanu(II MSCs)
4.	S. Gowthami (II MSCs)	N. Apsana Begum (II MSCs)	G.Priya (II MSCs)	P .Alekhya (II MSCs)	P. Navya (II MSCs)	Sk. Nageena (II MSCs)
5.	V. Hema (II MSCs)	R. Sravani (II MSCs)	G.Sangeetha (II MSCs)	Sk. Salma (II MSCs)	S. Navya Sri (II MSCs)	T. Anjali (II MSCs)


POWER POINT
PRESENTATIONS

The Department of Statistics conducted **POWER POINT PRESENTATION** in the academic year 2022-2023 on 23rd June 2023 on the topic **"Role Of Statistics In Industry And Agriculture, Role of Statistics In Real Life And Correlation".** 98 Students of the Department were attended out of 98, 14 Students of the Department of 1st & 2nd BSc-MSCs were participated in the presentation**. T.Devayani and K.Mary Gold** won the first prize from 2nd BSc-MSCs and **Sk.Karishma Begum** from I-MSCs got the 2nd prize. **Sr. Sucharitha and V.Lalitha Devi** from I-MSCs won the 1nd prize and **P.Lakshmi** from 2nd MSCs got the 2nd prize. The winners and runners were presented with certificates.

PARTICIPANTS LIST IN POWER POINT PRESENTATION

S.No	Name of the Student	Group/Year	Topic
1.	B.Anusha	I BSc (MSCs)	Role of Statistics in Agriculture
2.	D.Maheswari	I BSc (MSCs)	Correlation Coefficient
3.	I.Amani Krishna Priya	I BSc (MSCs)	Role of Statistics in Industry
4.	P.Naga Mounika	I BSc (MSCs)	Role of Statistics in Real Life
5.	Sk.Karishma Begum	I BSc (MSCs)	Correlation Coefficient
6.	Sr.Sucharitha &V.Lalitha Devi	I BSc (MSCs)	Role of Statistics in Agriculture
7.	D.Alekhya	II BSc (MSCs)	Role of Statistics in Industry
8.	I.Lavanya	II BSc (MSCs)	Role of Statistics in Real Life
9.	K.Lakshmi	II BSc (MSCs)	Role of Statistics in Real Life
10.	K.Mary Gold &T.Devayani	II BSc (MSCs)	Role of Statistics in Industry
11.	P.Harika	II BSc (MSCs)	Role of Statistics in Real Life
12.	Y.Sowjanya	II BSc (MSCs)	Role of Statistics in Agriculture


GOOD
MORNING

The Department of Statistics conducted **POWER POINT PRESENTATION** in the academic year 2019-2020 on 5th February 2020 on the topic **"Applications of OR in Real Life, The Importance of Time series and Importance of Bio Statistics ".** 83 Students of Final year were attended and out of 85,8 Students of the Department of III BSc-MSCs were participated in the presentation**. Ms. Bhumika & Ms.Tejaswi** won the first prize**. Ms.Pravalika & Ms.Bhagya Kala** got the 2nd prize. The winners and runners were presented with certificates and gifts by the Principal.

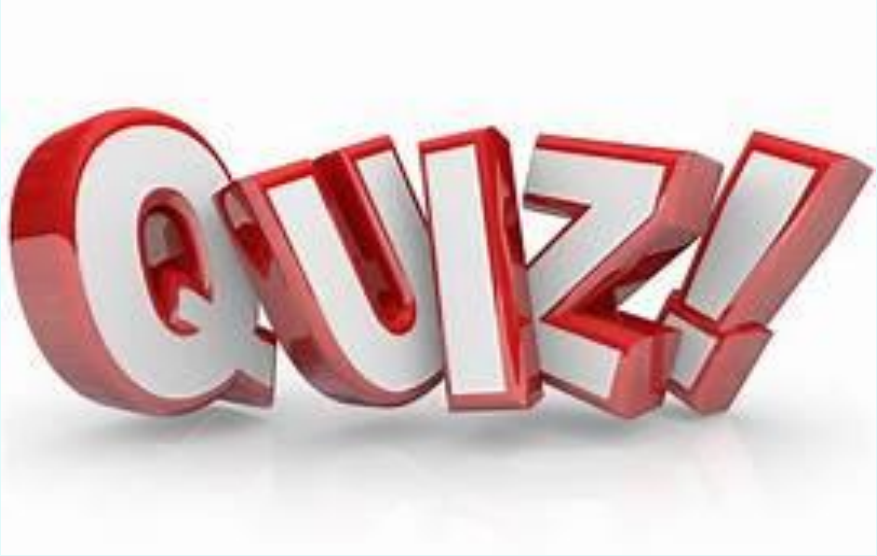
PARTICIPANTS LIST IN POWER POINT PRESENTATION

S.No	Name of the Student	Group/Year	Topic
1.	B.Naga Sudha Tejaswini	III BSc (MSCs)	Importance of Time Series
2.	D.Lakshmi	III BSc (MSCs)	Applications of OR in Real Life
3.	G.Pravallika & K.Bhagya Kala	III BSc (MSCs)	Applications of OR in Real Life
4.	D.Bumika & M. Tejaswi	III BSc (MSCs)	Importance of Vital Statistics
5.	K.Mahima	III BSc (MSCs)	Importance of Time Series
6.	Sk.Afreen Sultana	III BSc (MSCs)	Importance of Time Series
7.	Sk.Nageena	III BSc (MSCs)	Applications of OR in Real Life
8.	V.Hema	III BSc (MSCs)	Importance of Vital Statistics


STATISTA-2K20


Introduction
of
Biostatistics

Participative Learning



The Department of Statistics conducted **QUIZ COMPETITION** in the academic year 2022-2023 on 22nd June 2023. All the students of the Department of 1st ,2nd & final year B Sc-MSCs of 173 students were attended and 20 Students were participated in the competition . It was held in Three rounds of General Knowledge, Subject round & Visual round. Five groups of four members each had actively participated to perform their comprehensive level. **Ms.Shabana Aazmi & Team** won the first prize and the **Ms.B.Aishwarya & Team** got the Second prize. There were presented with certificates.

PARTICIPATES LIST IN QUIZ COMPETITION

S.No	Group A	Group B	Group C	Group D	Group E
1.	J.Naga Lakshmi I MSCs	B.Geethika-IMSCs	B.Pavani IIMSCs	MD.Raisa Kousar IIMSCs	B.AiswaryaBai IIIMSCs
2.	P.Naga Sri II MSCs	J.Bharathi-IIIMSCs	D.Madhavi IIIMSCs	Ms.Shabana Aazmi IIIMSCs	P.Harilka IIMSCs
3.	N.Supriya II MSCs	K.Mary Gold IIMSCs	G.Kavitha IIMSCs	T.Rajeswari IIMSCs	Sk.Reshu IIMSCs
4.	M.Gouthami IIIMSCs	T.Keerthi IIMSCs	Y.Sireesha-IMSCs	Y.Nithya Sri IMSCs	T.Triveni IIMSCs

The Department of Statistics conducted **QUIZ COMPETITION** in the academic year 2021-2022 on 18th April 2022. All the students of the Department of 1st & final year B Sc-MSCs of 157 students were attended for the competition . It was held in three rounds of General Knowledge, Subject round & Visual round. Five groups of six members each had actively participated to perform their comprehensive level. **Ms.A.Pavithra & Team** won the first prize and the **Ms.G.Sravana Sandhya & Team** got the Second prize. There were presented with certificates

PARTICIPATES LIST IN QUIZ COMPETITION.

S.No	Group A	Group B	Group C	Group D	Group E
1.	C.Hyamavathi (III MSCs)	A.Pavithra (III MSCs)	K.Saritha (III MSCs)	V.Anusha (III MSCs)	G.Sravana sandhya (III MSCs)
2.	M.Kalyani (III MSCs)	B.Bhavani (III MSCs)	Ch.Tanusha (III MSCs)	N.Haritha (III MSCs)	M. Ramya (III MSCs)
3.	D.Deevena (III MSCs)	T.Bindu Bhavana (III MSCs)	T.Aksa (III MSCs)	B.Anusha (III MSCs)	V.Rani Pravallika (III MSCs)
4.	B.Esther Rani (I MSCs)	I.Geetha (III MSCs)	E.Renuka (I MSCs)	D.Alekhya (I MSCs)	K.Mary Gold (I MSCs)
5.	Ch.Priya (I MSCs)	M.Sai Lakshmi (I MSCs)	K.Indira (I MSCs)	M.Shobha (I MSCs)	K.Kavya (I MSCs)
6.	B.Jhansi (I MSCs)	S.Niharika (I MSCs)	P.Srilatha (I MSCs)	R.Komali (I MSCs)	Sk.Reshu (I MSCs)


ROUND-II


DEPARTMENT
OF
STATISTICS
QUIZ COMPETITION
1. Who was known as Iron
man of India?
A. Govind Ballabh Pant
B. Jawaharlal Nehru

The Department of Statistics conducted **QUIZ COMPETITION** in the academic year 2019-2020 on 4th February 2020. All the students of the Department of 1st ,2nd & final year B Sc-MSCs of 293 students were attended and 36 Students were participated in the competition. It was held in Three rounds of General Knowledge, Subject round & Visual round. Six groups of Six members each had actively participated to perform their comprehensive level. **Ms. M. Aruna Kumari & Team** won the first prize and the **Ms.R.Aswini Teja & Team** got the Second prize. There were presented with certificates.

PARTICIPATES LIST IN QUIZ COMPETITION.

S.No	Group A	Group B	Group C	Group D	Group E	Group F
1.	M.Kalyani II MSCs	M.Aruna Kumari II MSCs	B.Nandini IMSCs	K.Sravani I MSCs	G.Devika I MSCs	A.Reethika IMSCs
2.	N.Lavanya II MSCs	G.Yamini Saraswathi III MSCs	B.Bhavani IMSCs	K.Akhila IMSCs	K.Ramya Sri I MSCs	I.Geetha IMSCs
3.	P.Sravani I MSCs	K.Sathyavathi IMSCs	Ch.Tejeswari IMSCs	K.Sravanthi IMSCs	K.Navya I MSCs	K.Anitha I MSCs
4.	P.Kavya Priya II MSCs	K.Mamatha Marina II MSCs	I.Mallika I MSCs	P.Rameejan I MSCs	K.Mary Sravanthi III MSCs	T.Bhavya IMSCs
5.	R.Sravani Bai II MSCs	P.Amrutha Rohini I MSCs	J.Manasa I MSCs	Sk.Apsana I MSCs	R.Aswini Teja II MSCs	T.Pavithra I MSCs
6.	S.Gowthami II MSCs	R.Naga Durga II MSCs	K.Suma I MSCs	Sk.Chandhbi I MSCs	V.Amani I MSCs	V.Deepthi I MSCs


Department of Statistics
STATISTA-2K20
2. The Indian to beat the computers in mathematical wizardry is
A. Ramanujam
B. Reva Partighshi
C. Raja Ramanna
D. Shakuntala Devi


STATISTA-2K20

The Department of Statistics conducted **QUIZ COMPETITION** in the academic year 2018-2019 on 5th February 2019. All the students of the Department of II BSc-MSCs students were participated in the event. It was held in four rounds of General Knowledge, Subject round & Visual round and rapid fire in the concepts of statistics. Six groups of five members each had actively participated to perform their comprehensive level. **Group-C-R.A.Fisher's group of Ms.Sk.Nazma & Team** won the first prize and **Group-A-W.A.Schwartz group of Ms.P.Renuka & Team** got the Second prize. There were presented with certificates.

PARTICIPATES LIST IN QUIZ COMPETITION.

S.No	W.A.Schewartz-Group A	C.R.Rao-Group B	R.A.Fisher's-Group C	Baye's-Group D	Yate's-Group E	A.L.Bowley-Group F
1.	K.Aswini IIMSCs	B.Srilatha IIMSCs	Bhavya Sri IIMSCs	I.Sirisha IIMSCs	S.Nagamani IIMSCs	A.Neelima IIMSCs
2.	K.Anuradha IIMSCs	B.Tanuja IIMSCs	Sk.Afreen Sultana IIMSCs	K.Sravani IIMSCs	Sk.Shaheena IIMSCs	A.Ratna Kumari IIMSCs
3.	P.Renuka IIMSCs	E.Sowdarya IIMSCs	Sk.Nazma IIMSCs	K.Aswini IIMSCs	T.Sirisha IIMSCs	B.Siva IIMSCs
4.	P.Kalpana IIMSCs	J.Srilatha IIMSCs	Sk.Shahina IIMSCs	N.Shoba Rani IIMSCs	V.Lavanya IIMSCs	G.Mamatha IIMSCs
5.	Sk.Sharmila IIMSCs	K.Preethi IIMSCs	P.Navya IIMSCs	R.Sowjanya IIMSCs	V.Hymavathi IIMSCs	G.Ramya IIMSCs


WELCOME
TO


WELCOME
TO

The Department of statistics, Mathematics & Physics Organized One day **WORK SHOP** in the academic year 2022-2023 On 21th June 2023 on **Research Methodology** conducted for I,II,III Year B.Sc (MSCs, MPCs & MPC) Students in the Auditorium, Gnanamma Block . The Departments invited two Resource Persons, one of them was Dr:M:Srinivasa Narayana , Professor CDOE Department, K.L.Business School, K.L.University, Vijayawada and the another Resource person was Dr:B.V.H.Kameswara Sastry, H.O.D of Department of Management Studies, TJPS College, Guntur.


THE ICEBERG
ATTITUDE

SEMINAR PRESENTATION

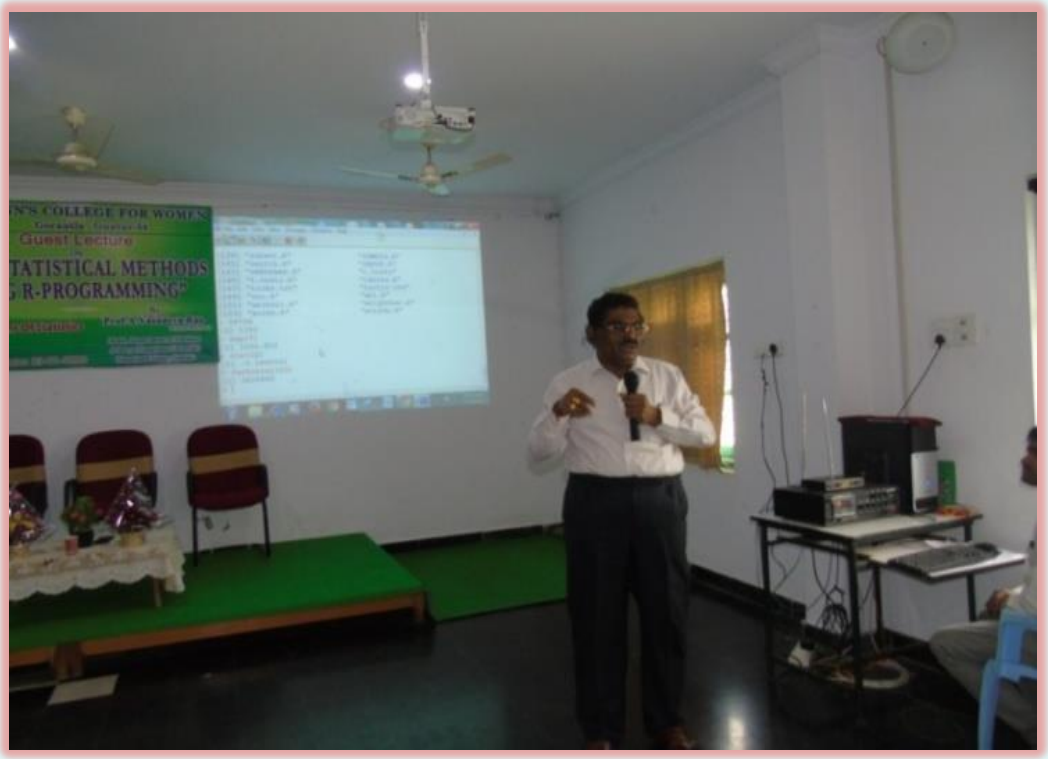
The Department of Statistics conducted **SEMINAR PRESENTATION** in the academic year 2021-2022 from 19-04-2022 to 21-04-2022 on the topic **"Role of Statistics In Real Life ".** 86 Students of the Department were attended out of 86, 8 Students of the Department of III BSc-MSCs were participated in the presentation**. A.Pavithra** won the 1nd prize and **T.Bhavya** got the 2nd prize. The winners and runners were presented with certificates.

PARTICIPANTS LIST IN SEMINAR PRESENTATION

S.No	Name of the Student	Group/Year	Topic
1.	A.Pavithra	III BSc (MSCs)	Role of Statistics in Real Life
2.	B.Anusha	III BSc (MSCs)	Role of Statistics in Real Life
3.	N.Chaitanya Deepthi	III BSc (MSCs)	Role of Statistics in Real Life
4.	P.Amrutha Rohini	III BSc (MSCs)	Role of Statistics in Real Life
5.	Sk.Sireesha begum	III BSc (MSCs)	Role of Statistics in Real Life
6.	T.Bhavya	III BSc (MSCs)	Role of Statistics in Real Life
7.	T.Bindu Bhavana	III BSc (MSCs)	Role of Statistics in Real Life
8.	M.Kalyani	III BSc (MSCs)	Role of Statistics in Real Life

The Department of statistics Organized One day **SPECIAL LECTURE** in the academic year 2021-2022 On 23rd April 2022 on Statistical tools for DATA ANALYTICS conducted for 239 Students of I,II,III Year B.Sc – MSCs in the Seminar Hall . The Department invited the Resource Persons Dr:D.V.Chandra Shekar, TJPS College, Guntur.

The Department of Statistics organized a Guest Lecture for II and III BSc MSCs Students on the topic **"BASIC STATISTICAL METHODS USING R-PROGRAMMING"** on January 23rd 2020 from 10:00am to 12:30pm in seminar hall by the Guest Faculty Prof : A.Vasudeva Rao, Professor in Statistics ,ANU, Nagarjuna Nagar, Nambur. The Students of the Department 196 were attended.


Guest Lecture
TATISTICAL METHODS
R-PROGRAMMING

The Department of Statistics organized **Tree Plantatoin"**programme on 29th June 2019 at 10:00a.m on the occasion of **"National Statistics Day"** with the Collaboration of APSSDC, Coordinator, Mr.Ch.Prasanna Kumar**.** The students of IInd& IIIrd BSc MSCs of 183 were actively participated in the programme.


CONFERENCE HALL


ST. ANN'S COLLEGE FOR WOMEN


Paper
presentation

The Department of Statistics conducted **PAPER PRESENTATION** in the academic year 2018-2019 on 6th February 2019 on the topic **"Applications of OR in Real Life,The Importances of Time series and Importances of Vital Statistics".** 54 Students of the Department were attended and 9 Students out of 54 the Department of III BSc-MSCs were participated in the presentation**. Ms.P.Ramya & G. Prasanna** won the first prize. **Ms.K.Sneha priya** got the 2nd prize.. The winners and runners were presented with certificates and gifts by the Principal.

PARTICIPANTS LIST IN POWER POINT PRESENTATION

S.No	Name of the Student	Group/Year	Topic
1.	G.Revathi	III BSc (MSCs)	Importance of Time Series
2.	G.P rasanna & P.Ramya	III BSc (MSCs)	Applications of OR in Real Life
3.	K.Gayathri	III BSc (MSCs)	Importance of Vital Statistics
4.	K.Sneha Priya	III BSc (MSCs)	Importance of Time Series
5.	P.Srilatha	III BSc (MSCs)	Applications of OR in Real Life
6.	T.Sirisha	III BSc (MSCs)	Importance of Time Series
7.	V.Pushpavathi	III BSc (MSCs)	Applications of OR in Real Life
8.	Y.Bala Divya	III BSc (MSCs)	Importance of Vital Statistics
9.	G. Hemalatha	III BSc (MSCs)	Importance of Time Series

WINNERS AND RUNNERS IN POWER POINT PRESENTATION

Ms.P.Ramya & G. Prasanna from III-MSCs won the 1nd prize with the Score of 34 and **Ms.K.Sneha priya** from III-MSCs got the 2nd prize with the Score of 30.

Experiential Learning

PROJECTS

The Department of Statistics conducted many projects in the academic year 2022-2023.For the students of Department of 1st,2nd& final year students of BSc-MSCs . The final BSc-MSCs students were completed their **Long Term Internship Program** in "**Campus Glues Software Training & Development Centre"** on **PYTHON** under the supervision of the mentors of different Departments of the faculty members. 80 students were successfully completed their long term internship program.

The II BSc-MSCs students are doing their **Short Term Internship program "Salesforce Developer Virtual Internship"** under the supervision of the mentors of different Departments of the faculty members.63 students are doing their short term internship program virtually.

The I BSc-MSCs students are doing their **Community Service Project (CSP)** on **Health and Hygiene ,Food Habits and Water Pollution** under the supervision of the mentors of different Departments of the faculty members.37 students are doing their community service project.

CAMPUS GLUES
Software Training & Development Centre
5/14, Brodipet, Guntur

Reg No: AP-07-58-006-03167742

ORACLE

9001 ISO CERTIFIED

Semester Internship Certificate

This is to certify that Mr. / Mrs. Annem. Bhagya Lakshmi

Register. No. Y20315812 of

St, Anns College for Women Guntur,

has successfully completed semester Internship program on

Python CAMPUSGLUES (Software Training & Development),

from 5th April 2023 to 25th June 2023

The overall performance of the Intern during his / her Internship is found Satisfactory.

CENTER MANAGER

CAMPUS GLUES CENTRE SOFTWARE TRAINING

+91-99 66 09 09 88 SATHYA.CAMPUSGLUES@GMAIL.COM

SHORT TERM INTERNSHIP

ST. ANN'S COLLEGE FOR WOMEN
GORANTLA, GUNTUR – 34.
BACHELOR OF SCIENCE

CERTIFICATE

This is to certify that NAMATHOTI.SUPRIYA, Register No. *Y213158195* of ST.ANN'S COLLEGE FOR WOMEN underwent Short-term internship in SALESFORCE-DEVELOPER-VIRTUAL from MAY-2023 To JULY-2023. The overall performance of the Intern during her internship is found to be Satisfactory.

3/8/23
Authorized signatory Date and seal
Head of the Department
Department of Statistics
ST. ANN'S COLLEGE FOR WOMEN
Gorantla, GUNTUR-522 035.

Dept. of Statistics
Dt. 3/8/23
St. Ann's College for Women
Gorantla, Guntur-522034

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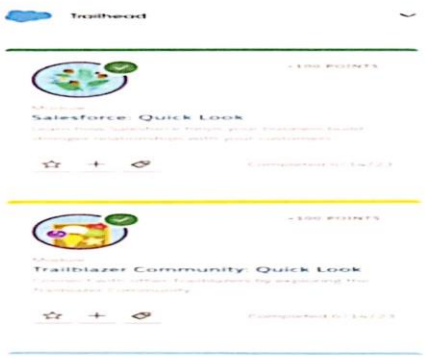

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COMMUNITY SERVICE PROJECT

ST . ANN'S COLLEGE FOR WOMEN

GORANTLA, GUNTUR-34

STUDENT'S DECLARATION

I PASUPULETI. RAMYA a student of B.Sc. M.S.Cs program Reg No Y223158126 of the Department of Statistics, ST. ANN'S COLLEGE FOR WOMEN, do hereby declare that, I have completed the mandatory Community Service Project from 01-05-2023 to 30-06-2023 in Gorantla, Guntur(Mandal), Guntur(District) under the faculty guideship of Mrs. L. Mary Anusha lecturer of Mathematics in ST. ANN'S COLLEGE FOR WOMEN, Gorantla, Guntur.

P. Ramya 18/07/23
Signature and date

Faculty guide: L. Mary-Anusha.

Head of the Department:
Head of Dept. of Mathematics
St. Ann's College for Women
GORANTLA, GUNTUR-522034.

Principle
PRINCIPAL
St. Ann's College for Women
GORANTLA, GUNTUR-522 034

The Department of Statistics conducted **LAB SESSIONS** on every week with two hours per paper for I,II & III BSc-MSCs students for the Semesters I,III,V & II,IV of the papers I,II,III,IV,V,VI,VII in the Statistics lab i.e.,

The Department of Statistics conducted **LAB SESSIONS** on every week with two hours per paper for I,II & III BSc-MSCs students for the semesters I,III,V& II,IV,VI of the papers I,II,III,IV,V,VI,VIIA(Elective), Cluster-A1, Cluster-A2, Cluster-A3-Project in the statistics lab i.e.,

Problem Solving

CRT ONLINE PROGRAME

The Department of Statistics conducted CRT ONLINE PROGRAME in the academic year 2022-2023 from December 5th 2022 to December 14th 2022. All the students of the Department of 1st year B Sc-MSCs of 37 students were attended and 8 Students were completed online CRT programe . They were presented with certificates.


ANDHRA PRADESH STATE SKILL DEVELOPMENT CORPORATION (APSSDC)
(Department of Skills Development and Training, Govt of Andhra Pradesh)

Certificate Of Completion

Certified that

Mr./Ms. Purimetla hima bindu

has successfully completed

Online Training Program on *CRT Aptitude* held from

5th Dec 2022 To 14th Dec 2022

CERT.NO: ESC-Dedicated Slot-5330

D V Rama Koti Reddy
Executive Director
APSSDC

S Satyanarayana, IAS
M.D. & C.E.O
APSSDC


ANDHRA PRADESH STATE SKILL DEVELOPMENT CORPORATION (APSSDC)
(Department of Skills Development and Training, Govt of Andhra Pradesh)

Certificate Of Completion

Certified that

Mr./Ms. Prameela. Palepu

has successfully completed

Online Training Program on *CRT Aptitude* held from

5th Dec 2022 To 14th Dec 2022

CERT.NO: ESC-Dedicated Slot-5345

D V Rama Koti Reddy
Executive Director
APSSDC

S Satyanarayana, IAS
M.D. & C.E.O
APSSDC

MINI PROJECTS

The Department of Statistics conducted many projects in the academic year 2021-2022.For the students of Department of 1st,2nd& final year students of BSc-MSCs . The final BSc-MSCs students were completed their **6th SEMESTER STATISTICS CLUSTER PROJECTS** on different Topics under the supervision of the Dr.J.Pratapa Reddy , HOD Of the Department of Statistics . 68 students were successfully completed their Projects.

ST. ANN'S COLLEGE FOR WOMEN

GORANTLA, GUNTUR – 35.

BACHELOR OF SCIENCE

CERTIFICATE

*This is to certify that this study on "**METHODS FOR COMPUTING TREND VALUES**" has been submitted by **CH.GAYATHRI** in partial fulfillment of the requirements for award of degree of **Bachelor of Science** as per the requirement of ACHARYA NAGARJUNA UNIVERSITY during the academic years 2021 -2022.*

Project Director
Dr. J. PRATAPA REDDY
M.Sc., M.Phil., Ph.D.

Head of the Department
Dr. J. PRATAPA REDDY
M.Sc., M.Phil., Ph.D.
Head of the Department
Department of Statistics
ST. ANN'S COLLEGE FOR WOMEN
Gorantla, GUNTUR-522 035.

EXTERNAL EXAMINER

A STUDY ON

METHODS FOR COMPUTING TREND VALUES

A project report Submitted in partial fulfillment of the requirement for the award of degree of

Bachelor of Science

Submitted by

CH.GAYATHRI
REGD.NO:Y193158190
SEMESTER - VI

Under the Guidance of

Dr. J. PRATAPA REDDY
M.Sc., M.Phil., Ph.D.

DEPARTMENT OF STATISTICS
ST. ANN'S COLLEGE FOR WOMEN
(AFFILIATED TO ACHARYA NAGARJUNA UNIVERSITY)
GORANTLA, GUNTUR-35.
ANDHRA PRADESH.
2021 – 22.

Participative Learning

A Field trip was conducted by the Department of Statistics on 03-12-2022.The Students of I,II &III B Sc – MSCs of 181 were attended with the faculty members of the Department Dr.J.Pratapa Reddy ,HOD and Miss.P.Jaya Lakshmi , Lecturer of the department at Acharya N.G.Ranga Agricultural University in Lam,Guntur on the occasion of Agricultural Exhibition.

The main aim of the agricultural exhibition was to create and improve the knowledge of different types of crops and usage of different types of modern agricultural machines, and also they explained how to manufacture of chocolates with coco powder.The farmers explained the life cycle of turmeric from seed to turmeric powder.

The field trip was really crated the awareness of agriculture activities to all the students.The department thankful to Principal and Correspondent of the college Rev.Dr.Sr.Fatima Rani .P to encourage the students to go to field trip.

Participative Learning

Practical Demonstration

The Department of Statistics conducting practical classes regularly according to the time table. Practical demonstration is the performance of an activity under the direct observation of a designated examiner for the purpose of establishing that the performer is sufficiently proficient in a practical skill to meet a specified standard of competence or other objective criterion.

Problem Solving

I B Sc, PAPER-I, SEMESTER-I
TITLE: DESCRIPTIVE STATISTICS

UNIT – I - Introduction to Statistics

Short Questions – 5 Marks

1. Characteristics of a good questionnaire.
2. Characteristics of Measures of Central Tendency.

Essay Questions – 10 Marks

1. Explain Primary and Secondary data with methods ,merits and demerits.
2. Measures of Central Tendency with merits and demerits.
3. Explain about Classification of data.
4. Explain about Tabulation of data.
5. Diagrammatic representation of data.

UNIT – II – Measures of Dispersion

Short Questions – 5 Marks

1. Characteristics of Measures of Dispersion.
2. Discuss about an Ideal Measure of Dispersion.
3. Explain about Sheppard's Corrections.
4.Explain about Kurtosis.

Essay Questions – 10 Marks

1. Explain Measures of Dispersion with merits and demerits.
2. Derive the relation between Central and Non-Central Moments.
3. Derive the relation between Non-Central and Central Moments.
4.Explain about Skewness with Measures.

UNIT – III - Correlation and Regression

Short Questions – 5 Marks

1. Define correlation and its types with examples.
2.Define Karlpearson's Coefficient of Correlation.
3. Derive the Limits of Karlpearson's Coefficient of Correlation.
4. Define Rank Correlation Coefficient.
5. Define Repeated Rank Correlation Coefficient.
6. Properties of Karlpearson's Coefficient of Correlation.
7. Properties of Rank Correlation Coefficient.
8. Define Regression Lines and Coefficients.
9. What are the properties of Regression Coefficients.
10. Define Correlation Ratio with properties.
11. Define Partial Correlation.
12. Define Multiple Correlation.

Essay Questions – 10 Marks

1. Derive the Formula for Karlpearson's Coefficient of Correlation.
2. Prove that $r_{xy} = r_{uv}$.
3. Derive the Formula for Spearman's Rank Correlation Coefficient.
4. Derive the limits for Spearman's Rank Correlation Coefficient.
5. Derive the Regression line X on Y.
6. Derive the Regression line Y on X.
7. State and Prove the Properties of Regression Coefficients.
8. Derive the Angle between two Regression Coefficients.
9. What are the differences between Correlation and Regression.

UNIT – IV – Curve Fitting

Short Questions – 5 Marks

1. Define Curve Fitting.
2. Explain the Legender's Method of Least Squares Technique.

Essay Questions – 10 Marks

1. Fit the Straight Line of the form $Y=a+bx$.
2. Fit the Second degree parabola of the form $Y=a+bx+cx^2$.
3. Fit the Exponential Curve of the form $Y=ab^x$.
4. Fit the Exponential Curve of the form $Y=ae^{bx}$.
5. Fit the Power Curve of the form $Y=ax^b$.
6. Fit the K^{th} degree Polynomial of the form $Y=a+bx+cx^2+--------+nx^k$.

UNIT – V – Attributes

Short Questions – 5 Marks

1. Define an Attribute , Classes and Class Frequencies.
2. Define YULE'S Coefficient of Association (Q).
3. Define YULE'S Coefficient of Colligation (Y).
4. Define Consistency of data and Contingency.

Essay Questions – 10 Marks

1. Derive the relation between Q and Y.
2. What is the Criteria of Independence of Attributes.
3. What is the Criteria of Association of Attributes.
4. What are the conditions of Consistency in case of single, two and three Attributes.
5. Explain about Coefficient of Contingency.

Assignment

ST. ANN'S COLLEGE

FOR WOMEN.

-Guorantla, Guntur.

DEPARTMENT OF STATISTICS.

TITLE:- Applied Statistics.

SEMESTER:- 4.

Submitted to:-

Dr. J. Pratapa Reddy Sir.

Submitted by:-

T. Devayani

II MSC's

Roll No:- 63

Regd No:- 4213158210.

* Components of Time Series

The various forces of work, effecting the values of a variance in a time series can be classified into the following four paths commonly known as "components of Time series". They are.

1. Secular Trend
2. Seasonal variations
3. Cyclic variations
4. Random variations.

The value of the time series 'Ut' at any time 't' is considered as the resultant of the combined impact of all four components.

Secular Trend:-

* By trend, we mean the general tendency of the time series data to increase or decrease during a long period of time.
* The upward tendency would be seen in the data relating to prices, agriculture, production, currency in circulation etc.
* The downward tendency would be seen in the data relating to death, epidemics etc.
* The word "long term" cannot be defined exactly.
* The trend is the general, smooth, long term average tendency.
* It is not neccessary that the increase (or) decrease in the data should be in the same direction throughout the given period.
* However, the overall tendency may be upward (or) downward or stable.

Trend can be classified into two ways.

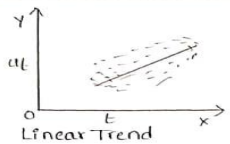
(i) Linear Trend
(ii) Non-Linear Trend.

• Linear Trend

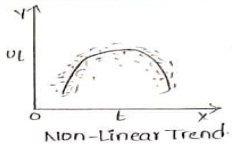
* If the time series data values are plotted on graph, if all points are fall cluster (or) more (or) less around a straight line. Then the trend exhibited by the time series is called Linear Trend.

• Non-Linear Trend

* If the time series data values are plotted on the graph, if all points are fall cluster more (or) less around a curve then the trend exhibited by the time series is called Non-Linear Trend.



Linear Trend



Non-Linear Trend.

Seasonal variations:-

This variations in the time series data occured during a time period 12 months and which are operate in a regular and periodic manual.

* Seasonal variation in the time series will be their if the data are recorded as Quarterly, monthly, weekly, daily etc.
* If the data is given in years then there is no seasonal variations.

The seasonal variations may be defined as

(i) Natural variations
(ii) Man made variations.

• Natural variations:-

The various season (or) weather conditions and climatic changes plays an important role in seasonal time series data.

Examples

1. The sales of umbrellas pick up very fast in Rainy season.
2. The demand for Ac's goes up in summer season.
3. Sales of woman clothes grown up in winter season.

• Man-made variations

These variations in a time series data with in a period of 12 months are due to habits, fashions, conventions, customs of the people in the society.

1. The sales of the ornaments goes up in marriages.
2. The sales and profits in departmental stores goes up during the festival like diwali, Ramzan, christmas.

This is very useful to business man, directors, producers, sales managers etc... in planning to make the future decisions.

Cyclical Variations:-

The oscillatory movements in a time series with period of oscillation more than one year is called cyclical variations.

One complete period of oscillation is called an cyclic. The cyclic movements in a time series are generally would be seen in a business are called business cycle.

i) Prosperity ii) Recession iii) Depression iv) Recovery

Normally the period may be four to seven years. Generally series relating to prices, production wages etc., are effected by Business cycle.

Random variations:-

* Apart from the regular variations almost all the series contain one (or) more factories called "Random variations (or) Irregular variations". These variations are unpredictable, and purely random. Also these are beyond the control of human hand.

* Ratio to Trend Method:-

The various steps to find the seasonal Indices by using Ratio to Trend method are;-

Step 1:- Find the trend values by using the principles of least square technique by fitting mathematical curves such as straight line (or) second degree parabola etc.

Step 2:- Express the original data as the percentages of the trend values, Assuming multiplicative model $\left(\frac{O_t}{T_t} \times 100\right)$. These percentages will contain seasonal, cyclical and Random components.

Step 3:- The cyclical and Random components are then wiped out by averaging the percentages for different quarters for quarterly data (or) for different months for monthly data, Thus leaving us with seasonal Indices

Step 4:- Finally we adjust these Indices obtained in step-3 by multiplying such of them throughout by a constant factor K as

$$K = \frac{400}{\text{sum of seasonal Indices}}, \text{ for quarterly data.}$$

$$K = \frac{1200}{\text{sum of seasonal Indices}}, \text{ for monthly data.}$$

* Fitting of modified exponential curve using method of three selected points

Let us consider the modified exponential curve is $y_t = a + bc^t$ ——(1) Or $a > 0$. a, b and c are called parameters (or) constant of the curve.

Let us consider three ordinates y_1, y_2 and y_3 corresponding to the three equidistant values of time, t_1, t_2 and t_3 respectively such that $t_2 - t_1 = t_3 - t_2$.

∴ The values of y_t at t_1, t_2 and t_3 are

$$y_1 = a + bc^{t_1} \text{ ——(2)}$$
$$y_2 = a + bc^{t_2} \text{ ——(3)}$$
$$y_3 = a + bc^{t_3} \text{ ——(4)}$$

Let $y_2 - y_1 = (a + bc^{t_2}) - (a + bc^{t_1})$

$$= a + bc^{t_2} - a - bc^{t_1}$$
$$= b[c^{t_2} - c^{t_1}]$$
$$= bc^t[c^{t_2 - t_1} - 1] \text{ ——(5)}$$

Let $y_3 - y_1 = (a + bc^{t_3}) - (a + bc^{t_2})$

$$= a + bc^{t_3} - a - bc^{t_2}$$
$$= b[c^{t_3} - c^{t_2}]$$
$$= bc^t[c^{t_3 - t_2} - 1] \text{ ——(6)}$$

consider $\frac{(6)}{(5)} = \frac{y_3 - y_2}{y_2 - y_1} = \frac{bc^t[c^{t_3 - t_2} - 1]}{bc^t[c^{t_2 - t_1} - 1]}$

$$= c^{t_2 - t_1}\left[\frac{c^{t_3 - t_2} - 1}{c^{t_3 - t_2} - 1}\right]$$
$$= c^{t_2 - t_1}$$
$$\hat{c} = \left[\frac{y_3 - y_2}{y_2 - y_1}\right]^{1/(t_2 - t_1)} \text{ ——(7)}$$

substitute 'c' value in equation (5) then

$$= b\left[\left(\frac{y_3 - y_2}{y_2 - y_1}\right)^{1/(t_2 - t_1)}\right]\left[\left(\frac{y_3 - y_2}{y_2 - y_1}\right)^{1/(t_2 - t_1)}\right]^{t_2 - t_1} - 1$$

$$= b\left[\left(\frac{y_3 - y_2}{y_2 - y_1}\right)^{\frac{t_1}{t_2 - t_1}}\right]\left[\left(\frac{y_3 - y_2}{y_2 - y_1}\right)^{\frac{t_2 - t_1}{t_2 - t_1}}\right] - 1$$

$$= b\left[\left(\frac{y_3 - y_2}{y_2 - y_1}\right)^{\frac{t_1}{t_2 - t_1}}\right]\left[\frac{y_3 - y_2 - y_2 + 1}{y_2 - y_1}\right]$$

$$= b\left[\left(\frac{U_3-U_2}{U_2-U_1}\right)^{\frac{t_1}{t_2-t_1}}\right]\left[\frac{U_3+U_1-2U_2}{U_2-U_1}\right]$$

$$b = \frac{U_2-U_1}{\left(\frac{U_3-U_2}{U_2-U_1}\right)^{\frac{t_1}{t_2-t_1}}\left(\frac{U_3+U_1-2U_2}{U_2-U_1}\right)}$$

$$\hat{b} = \frac{(U_2-U_1)^2}{U_3+U_1-2U_2}\left(\frac{U_2-U_1}{U_3-U_2}\right)^{\frac{t_1}{t_2-t_1}} \quad \text{——— (5)}$$

Substitute 'b' and 'c' values in equation (1) then

$$a = U_1 - bc^{t_1}$$

$$= U_1 - \left(\frac{(U_2-U_1)^2}{U_3+U_1-2U_2}\right)\left(\frac{U_2-U_1}{U_3-U_2}\right)^{\frac{t_1}{t_2-t_1}}\left[\left(\frac{U_3-U_2}{U_2-U_1}\right)^{\frac{1}{t_2-t_1}}\right]^{t_1}$$

$$= U_1 - \left[\frac{(U_2-U_1)^2}{U_3+U_1-2U_2}\right]\left[\left(\frac{U_2-U_1}{U_3-U_2}\right)^{\frac{t_1}{t_2-t_1}}\right]\left[\left(\frac{U_3-U_2}{U_2-U_1}\right)^{\frac{t_1}{t_2-t_1}}\right]$$

$$= U_1 - \left(\frac{(U_2-U_1)^2}{U_3+U_1-2U_2}\right)$$

$$= \frac{U_1U_3+U_1^2-2U_1U_2-U_2^2-U_1^2+2U_1U_2}{U_3+U_1-2U_2}$$

$$\hat{a} = \frac{U_1U_3-U_2^2}{U_3+U_1-2U_2}$$

∴ The fitted modified exponential curve by using the method of three selection points are

$$\boxed{\hat{U}_t = \hat{a} + \hat{b}\hat{c}^t}$$

* Weighted Index Number

In weighted Index numbers are assign appropriate weights, to various commodities i.e., the importance of each commodity will be considered.

Weighted Aggregate Price Index Numbers

The w_j is the weight of the j^{th} commodity then the weighted Aggregate price Index number for the given year in comparision with the base year is given by

$$\boxed{P_{oi} = \frac{\sum P_{ij}w_j}{\sum P_{oj}w_j} \times 100}$$

where the weights 'w_j' may be considered as quantities consumed in the base year (or) current year (or) average of both years.

Laspyre's weighted Price Index Number:-

Laspyre's assumes that the base year quantity as the weighted i.e., $\boxed{w_j = q_{oj}}$ base year quantity weight.

∴ The laspyre's price number is given by

$$\boxed{P_{oj}^{La} = \frac{\sum P_{ij}q_{oj}}{\sum P_{oj}q_{oj}} \times 100}$$

This method is also known as base year method.

Paasche's weighted price Index Number:-

Paasche's assumes that the current year quantity as the weighted i.e., $\boxed{w_j = q_{ij}}$

∴ The paasche's price number is given by

$$\boxed{P_{oi}^{Pa} = \frac{\sum P_{ij}q_{ij}}{\sum P_{oj}q_{ij}} \times 100}$$

This method is also known as current year method.

Fisher's aggregate weighted Index Number:-

Fisher's price Index numbers is the square root of the product of the laspeyr's and paasche's index number is given by

$$\boxed{P_{oi}^{F} = \sqrt{P_{oi}^{La} \times P_{oi}^{Pa}}}$$

Weighted Aggregate Quantity Index Numbers:

If 'wj' is the weight of the jth commodity then the weighted aggregate quantity index number for the given year in comparision with the base year is given by

$$\left| q_{0j} = \frac{\sum q_{ij} w_j}{\sum q_{0j} w_j} \times 100 \right|$$

where the weights 'wj' may be considered as prices of commodities in the base year (or) current year (or) average of both years, we have series of the weighted quantity index numbers.

Laspeyre's weighted Aggregate quantity Index Number:

Laspeyre's assumes that the base year price of the weight i.e. $(w_j = p_{0j})$

∴ The laspeyre's quantity index number is given by

$$\left| q_{0j}^{La} = \frac{\sum p_{0j} q_{ij}}{\sum p_{0j} q_{0j}} \times 100 \qquad q_{0j} = \frac{\sum q_{ij} p_{0j}}{\sum q_{0j} p_{0j}} \times 100 \right|$$

This method is also known as "Base year" method

Paasche's weighted Aggregate quantity Index Number:

Paasche's assumes that the current year price as the weight i.e. $(w_j = p_{ij})$

∴ The paasche's quantity index number is given by

$$\left| q_{0j}^{Pa} = \frac{\sum q_{ij} p_{ij}}{\sum q_{0j} p_{ij}} \times 100 \right|$$

This is also called as current year method.

Fisher's weighted Aggregate quantity Index Number:

Fisher's quantity index number is the square root of the product of the laspeyre's and paasche's quantity index numbers. It is given by

$$\left| q_{0i}^{f} = \sqrt{q_{0i}^{La} \times q_{0i}^{Pa}} \right|$$

Standardized Death Rate (SDR):

The crude death Rate is $m = \frac{D}{P} \times 1000$.

The Annual Age specific Death rate is $m_x = \frac{D_x}{P_x} \times 1000$.

The CDR in terms of ASDR of the regions A and B are given by

$$m^a = \frac{\sum_x m_x^a \cdot P_x^a}{\sum_x P_x^a} \quad \text{---(1)}$$

$$m_x^b = \frac{\sum_x m_x^b \cdot P_x^b}{\sum_x P_x^b} \quad \text{---(2)}$$

The expressions (1) and (2) are nothing but weighted Arithemetic means of the age specific death rates, the weights being corresponding populations in the age group.

Even though if age specific death rates are same i.e $m_x^a = m_x^b$ the values $m^a \neq m^b$ in general because $\frac{P_x^a}{\sum P_x^a} \neq \frac{P_x^b}{\sum P_x^b}$

* i.e The age distribution of the population in the two regions A and B are not identical.
* This Drawback is removed, if the same set of weights is used in (1) and (2) for computing the weighted average of age specific death rates.

This is done by using standardized death rates or "adjusted death rates".

Reference Books : Fundamentals of Applied Statistic
– S.C. Gupta & V.K. Kapur