A Survey on Pro-Environmental Attitude

B.Stat 2nd Year

Indian Statistical Institute, Kolkata

Course name:

Psychology

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Acknowledgement:

I would like to express my profound gratitude and indebtedness to Mr. Debdulal Dutta Roy , Associate Professor of Head, Psychology Research Unit, Indian Statistical Institute and for his contributions to the completion of my project "A Survey on **Pro-Environmental Attitude".**

I express my special thanks for his time and efforts he provided for the project. Your useful advice, constant inspiration and suggestions were really helpful to me during the project's completion. In this aspect, I am eternally grateful to you.

I would like to acknowledge that this project was completed entirely by me and not by someone else.

Last but not the least, regards and gratitude are being extended to my parents, friends and relatives for their good wishes which always inspire me to go ahead.

Samahriti Mukherjee

Date: May 13, 2022
Place: Kolkata

1 Abstract

By this project, we have identified people's attitude towards the environment, i.e., how much they are active in improving and aware of the environment.

2 Executive Summary

We have collected data from undergraduate and graduate students, so all the people are very much concerned about the environment because of having a good educational background. So there is a lack of variety in the dataset, so we cannot interpret Pro-Environmental Attitude of the whole Society. Also people are not that much interactive in finding new ways to protect environment than how much they support protecting the environment.

3 Introduction

When solving problems involving human-environment interactions, whether global or local, one must have a model of human nature that predicts the environmental conditions under which humans will respond well. So, can bottom-up pro-environmental initiatives overcome collective-action problems by 3 motivating pro-environmental attitude in the overarching group in which they are embedded. Pro environmental social identities can motivate individual and collective pro-environmental behaviours (Fielding Hornsey, 2016; Fritsche et al., 2018). Although valuable, most research on the topic emphasizes individual action while disregarding the societal and contextual factors that may motivate or inhibit pro environmental attitude. Recent calls have thus emphasized the importance of collective action in conjunction with individual action to effectively overcome global environmental change (Bamberg, 4 Rees, Seebauer, 2015; Fritsche, Barth, Jugert, Masson, Reese, 2018). Indeed, the scale and unprecedented nature of global environmental change requires collective efforts that involve people from across national and cultural boundaries. Extant research has identified various factors that affect pro- environmental attitudes.

3.1 Study Variable

The Study Variables we are dealing with are

- Recycling
- Environmental Safety
- Perceived Control
- Social Support
- Environmental Reduction
- Environmental Sensitivity
- Reuse
- Conservation

3.1.1 Scope and Importance

The importances and scopes of each study variable are given below:

- By the variable 'Recycling', we can predict how much individuals support:
  - upcycling old products into new and useful items.
  - reduction of consumption of new raw materials by recycling.

  - learning more about product recycling.
  - that recycling is truely benificial for the environment.
  - reduction of waste production.
  - promoting sustainable living.

- By the variable 'Environmental Safety', we can predict how much individuals support:
  - having a fine imposed on people not following proper protocols.
  - having strict policies to conserve the environment.
  - taking proper precautions when dealing with toxic chemicals.
  - undertaking precautionary measures in a firm manner with regard to natural disasters.
  - putting policies to increase environmental safety.

  We also ask each individual that what they think about cost of safe disposal of wastes and will think about some ways to decrease the cost, in case that is very costly.

- By the variable 'Perceived Control', we can predict how much individuals think that:
  - they are adept at managing wastes around their surroundings.
  - one single person cannot change the environment.
  - their actions are responsible for climate change.
  - environmental conservation is everyone's responsibility.
  - our cumulative efforts can reduce global warming.
  - they can control environmental pollution.

- By the variable 'Social Support', we can predict how much individuals think that:
  - an individual alone cannot help in conserving the environment without social support.
  - participating in mass clean-up drives to reduce pollution.
  - reating nature clubs can help generate awareness about environmental issues.
  - volunteering my services for habitat management work.
  - through the local clubs and NGOs we can protect environment.

- By the variable 'Environmental Reductionism', we can predict how much individuals think that:
  - closing the taps when we brush can help save water.
  - the Earth has plenty of natural resources if we just learn how to effectively use them.
  - we should support closing the lights and fans in a room before leaving it.
  - all products (like shampoo and soap) should be used till the very end.
  - everyone should switch to eco-friendly methods more frequently.

- By the variable 'Environmental Sensitivity', we can predict how much individuals :
  - like working in well-illuminated, airy places.
  - disordered surroundings make them anxious.
  - crowded places make them feel uneasy.
  - very loud noise or music makes them uncomfortable.
  - get irritated when they see garbage thrown on the road and the roadside.

- By the variable 'Reuse', we can predict how much individuals support:

  - finding new ways to use waste products.
  - repairing items before deciding to throw them away.
  - buying products that can be used again, rather than disposable items.
  - that Reuse preserves natural resources.
  - looking for new ways to reuse old products.

- By the variable 'Conservation', we can predict how much individuals think that:
  - regular awareness programs can help conserve the natural environment.
  - they should try to find ways to conserve natural resources in daily life.
  - conservation can help create a greener planet for the future.
  - social media platforms can be used to promote nature conservation.
  - we should intend to save natural resources whenever possible.

Asking same questions in different manners will also help us to check the consistency of an individual towards Pro-Environmental Attitude.

3.2 Objective of the Study

The objective of the study is **to explore the correlates of the pro-environmental attitude through literature survey.**

4 Literature Review

Since attitudes are generally more easily acquired in childhood, the study of environmental education should begin at an early age. Dewey (1996) states that education at a young age is very important in raising awareness, creating desirable behaviors and encouraging positive attitudes towards the environment. Güven (2013) emphasizes that individuals with a positive environmental attitude show positive behaviors towards the environment and that determining the level of attitudes of individuals towards the environment and environmental issues and taking necessary actions in accordance with the results in terms of elimination is of great importance and avoidance of environmental problems. People with a negative attitude towards the environment do not react to environmental problems and can even become part of the problems (Uluçınar Sağır et al., 2008). Therefore, having a positive attitude towards the environment is very valuable for people of all ages, gender, professional and socio-economic background.

5 Method

Environmental psychology largely uses the same quantitative and qualitative methods as other psychological disciplines. However, whereas other psychological disciplines often have one dominant research paradigm, environmental psychology is characterized by the use of a wide diversity of methods. Each research method has its strengths and weaknesses. Choosing a method typically involves a trade-off between internal and external validity. Internal validity reflects the extent to which cause–effect relationships can be established. External validity reflects the extent to which the results of a study can be generalized to other populations or settings. The main research methods used in environmental research include questionnaire studies, laboratory experiments, simulation studies, field studies, and case studies.

5.1 Participants

We have collected data from undergraduate and graduated college students.

5.1.1 Inclusion and Exclusion

- The studies had followed standard statistical analysis (where applicable) of pro-environmental attitude.
- The questionnaire is in English. So we could collect the data from only those people who can speak, read and write English.

5.2 Instruments

There are total 44 items. We have categorized the replies of each item as:

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

The questionnaire is madde by our Psychology Professor, **Dr. Debdulal Dutta Roy**.

5.3 Research Design

We have used 'Survey' method to collect data.

5.4 Statistics

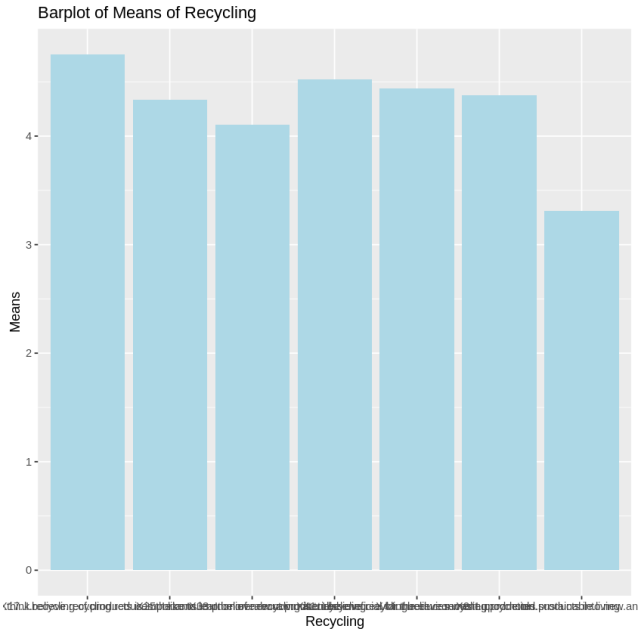
We have used R to analyse the data. Here are the Statistical tools we have used:

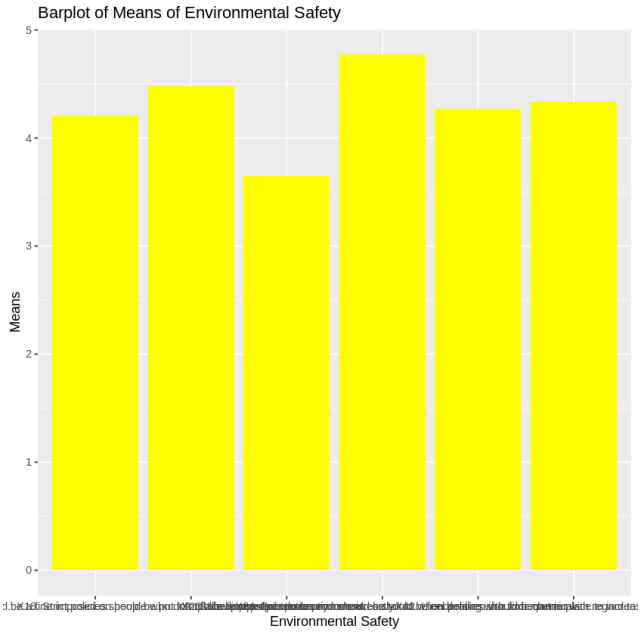
- Barplots
- Linecharts
- Correlation
- Correlation Plots
- Item Total Correlation
- Factor Analysis Scree Plot
- Very Simple Structure
- mean
- median
- Standard Deviation
- Skewness
- Kurtosis
- Frequency and Percentage Distributions
- Item Cluster Analysis
- Violin Plot
- Density Estimation
- Item-Wise Best Line Fit
- Multiple Regression Model between Correlations

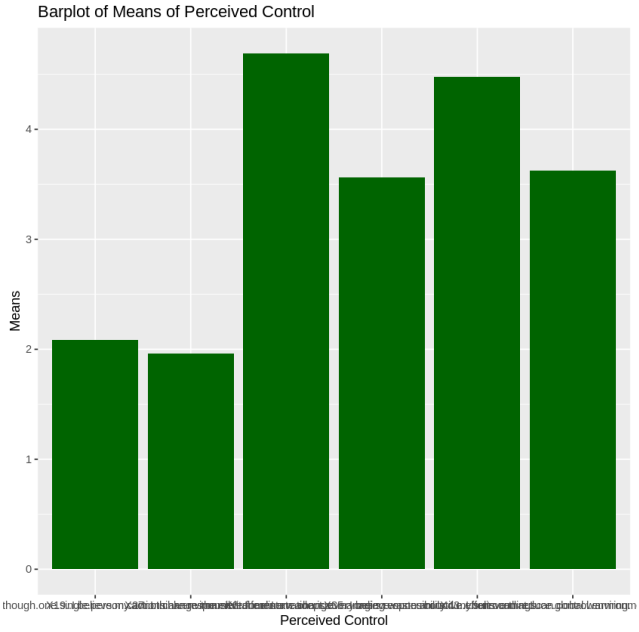
6 Results

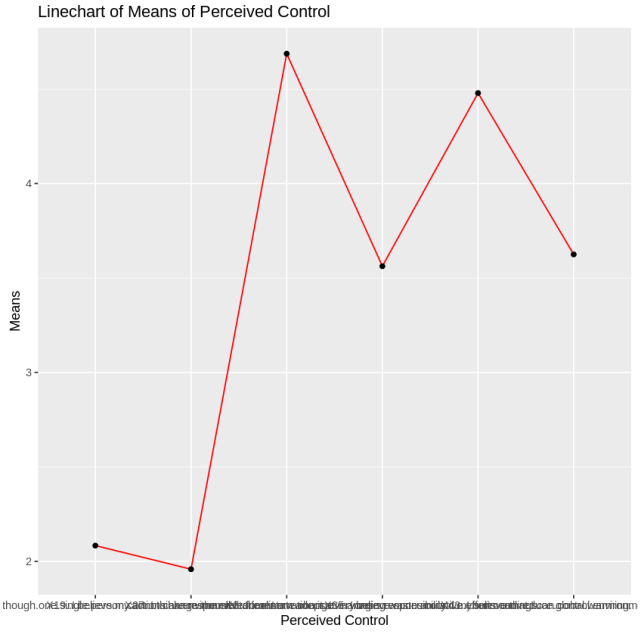
6.1 Descriptive Statistics

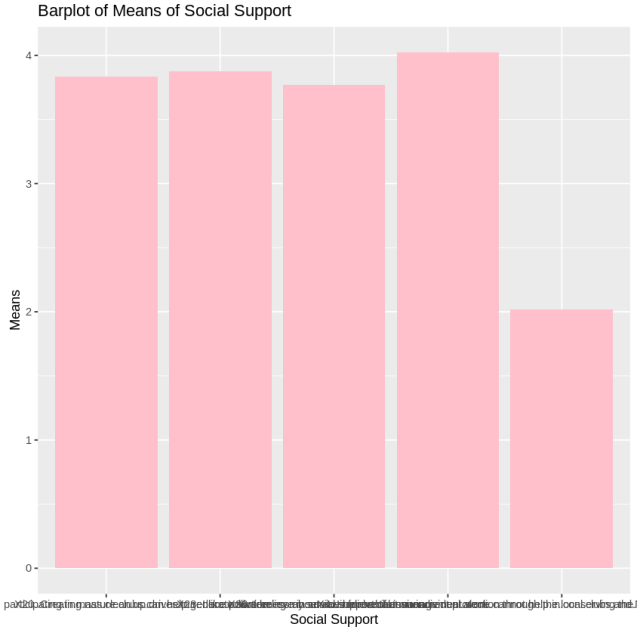
We have first plotted Linecharts and Barplots for each Study Variables considering means of each answer of questions:

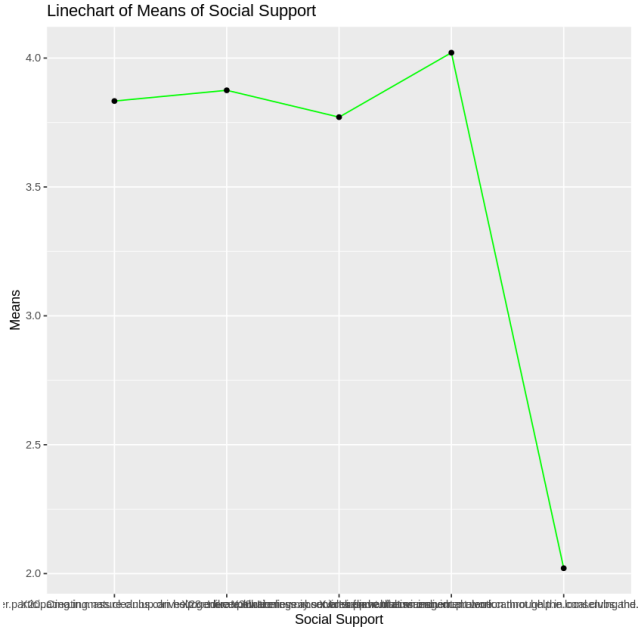


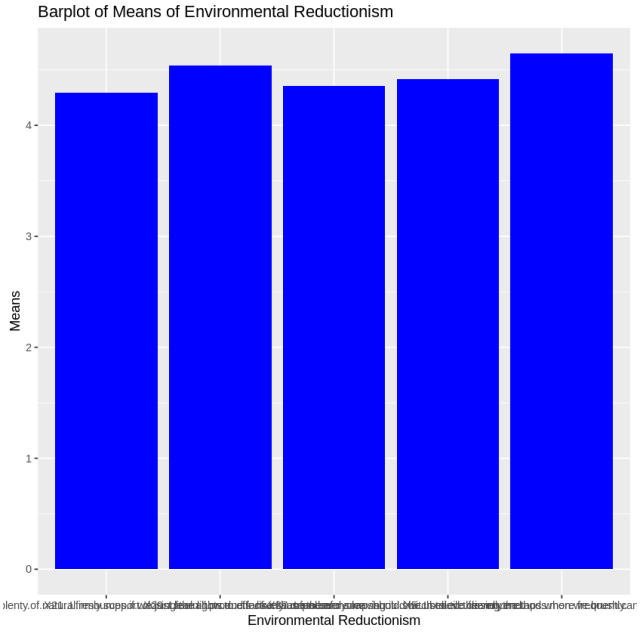


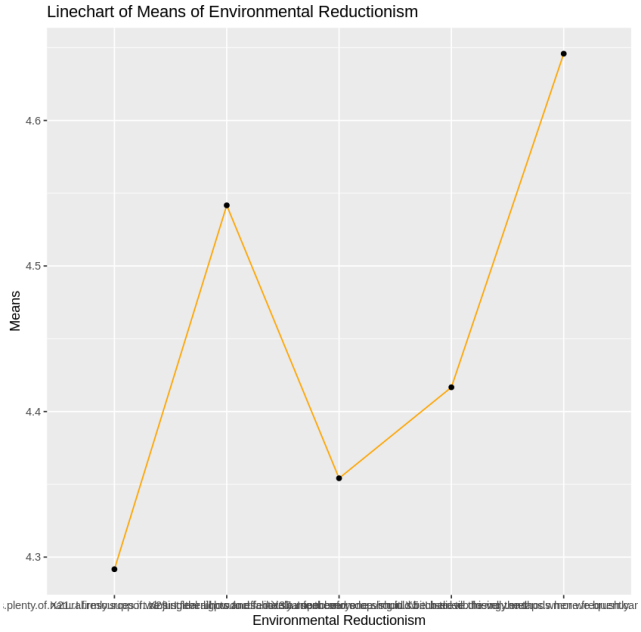

Barplot of Means of Perceived Control
Means
Perceived Control

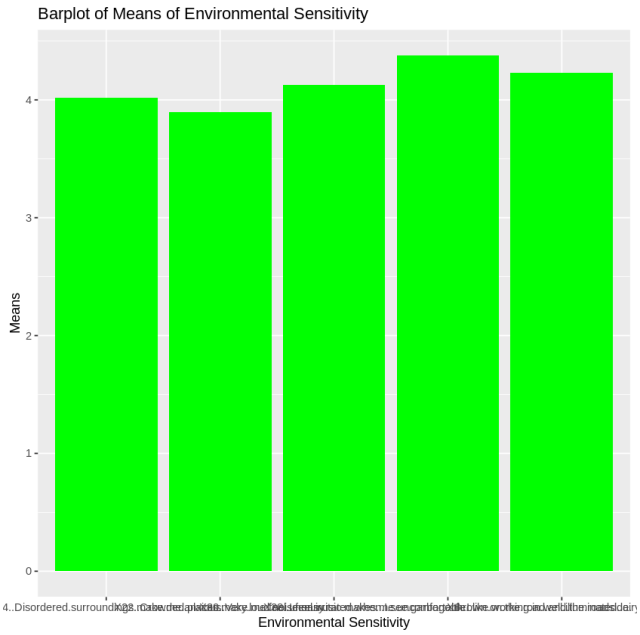

Linechart of Means of Perceived Control
Means
Perceived Control

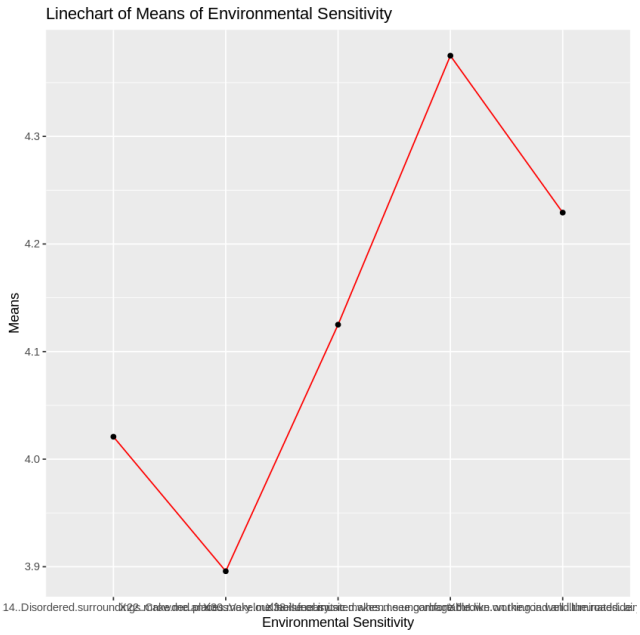

Barplot of Means of Social Support
Means
Social Support

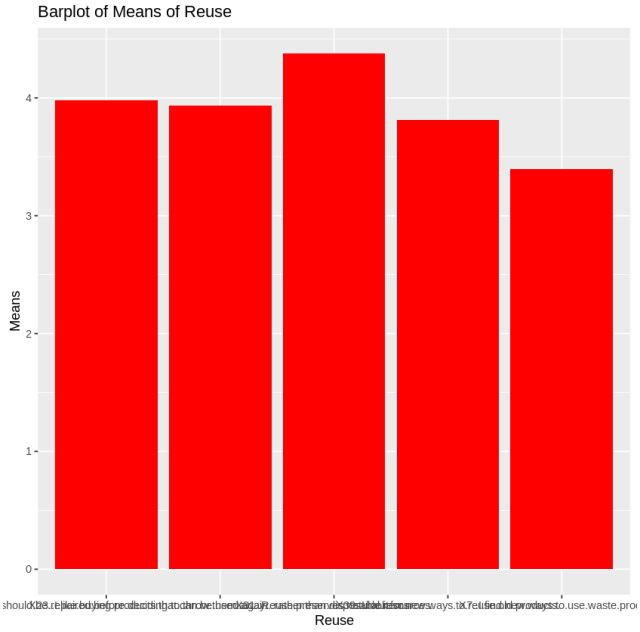

Linechart of Means of Social Support
Means
Social Support

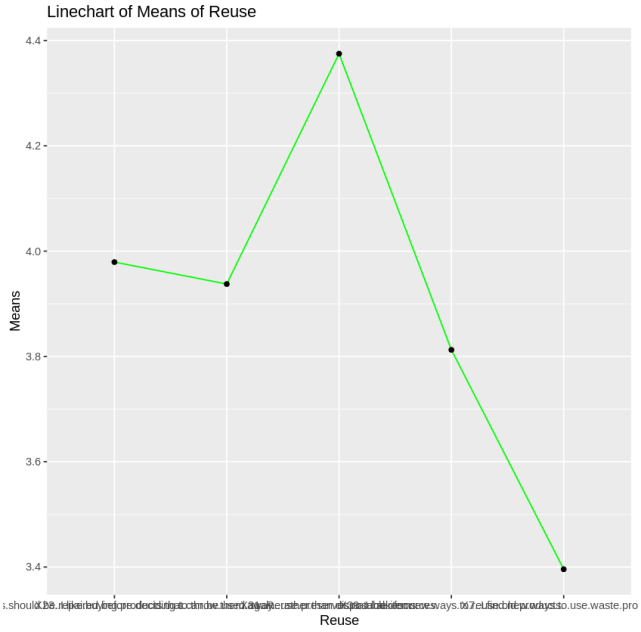

Barplot of Means of Environmental Reductionism
Means
0
1
2
3
4
Environmental Reductionism

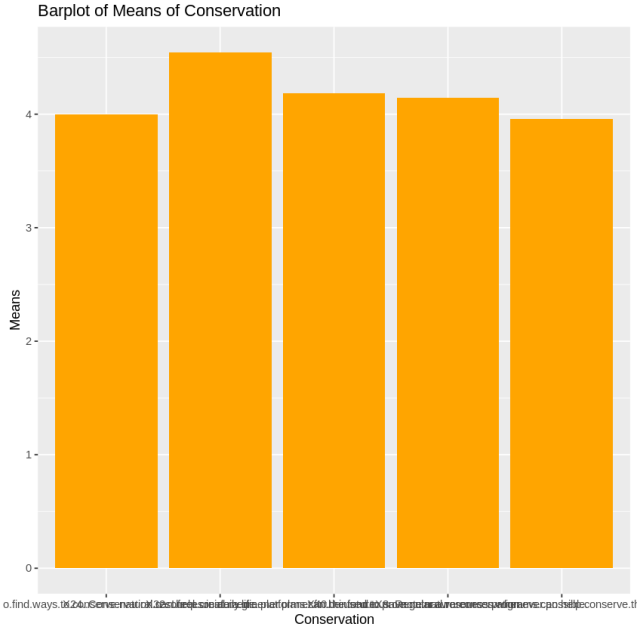

Linechart of Means of Environmental Reductionism
Means
4.3
4.4
4.5
4.6
Environmental Reductionism

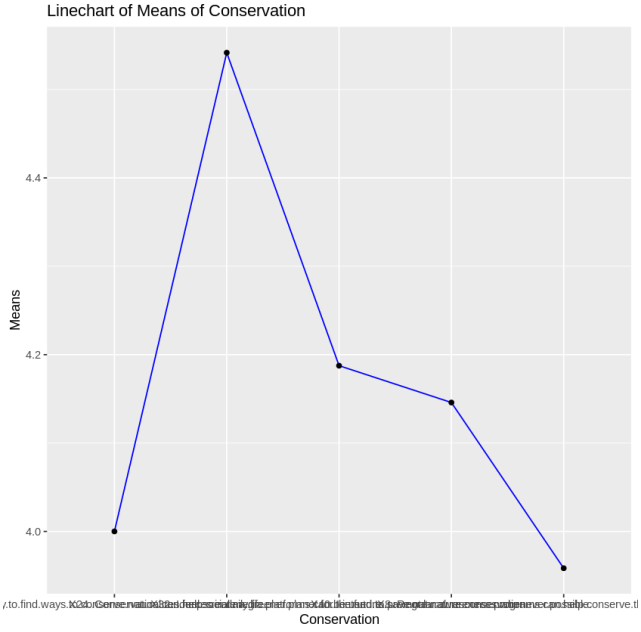

Barplot of Means of Environmental Sensitivity
Means
0
1
2
3
4
Environmental Sensitivity


Linechart of Means of Environmental Sensitivity
Means
3.9
4.0
4.1
4.2
4.3
Environmental Sensitivity

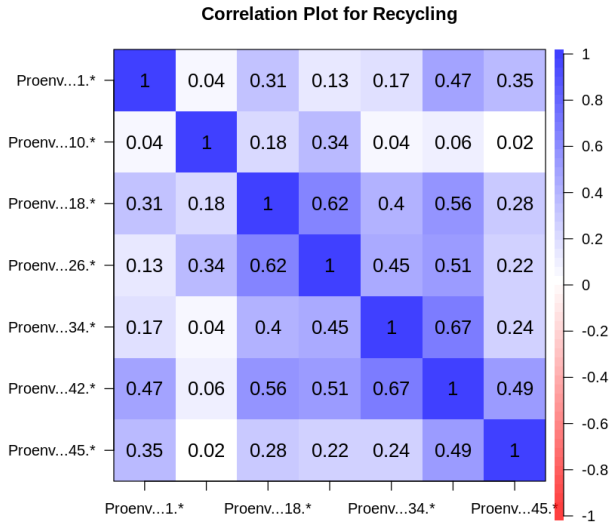

Barplot of Means of Reuse
Means
Reuse

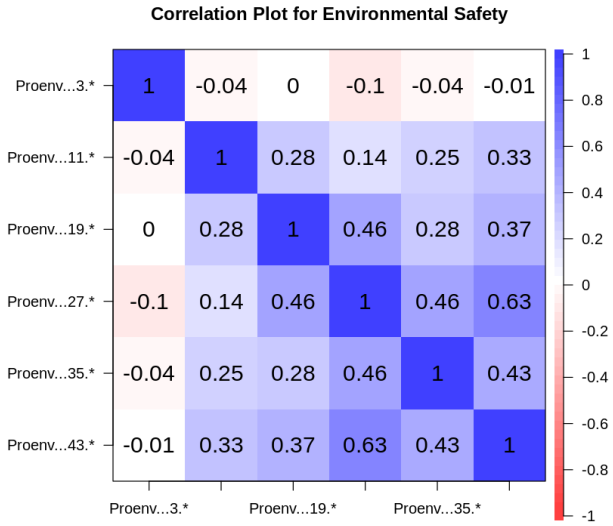

Linechart of Means of Reuse
Means
Reuse

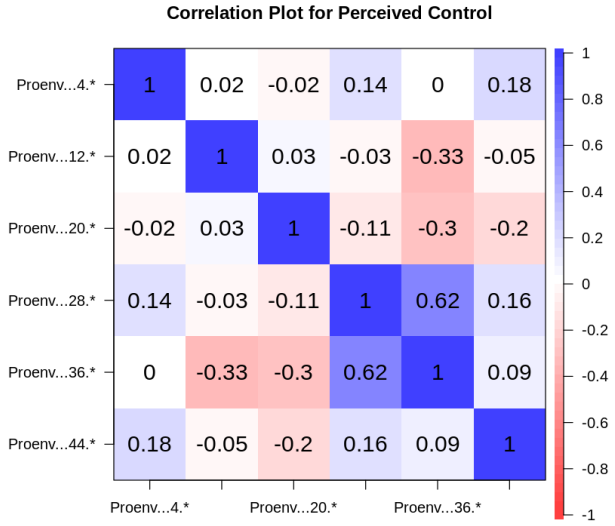

Barplot of Means of Conservation
Means
Conservation

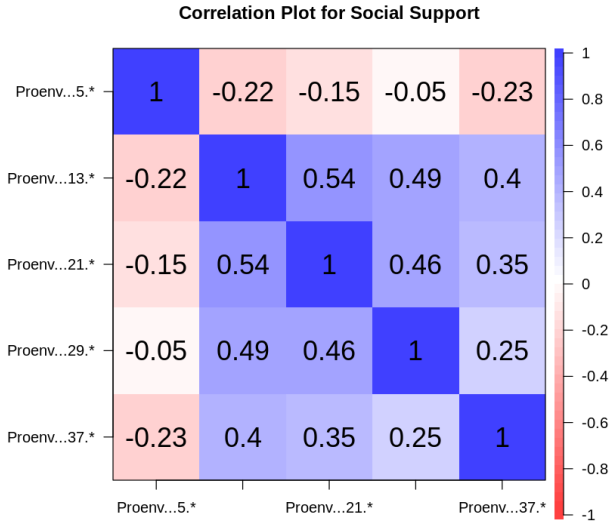

Linechart of Means of Conservation
Means
Conservation

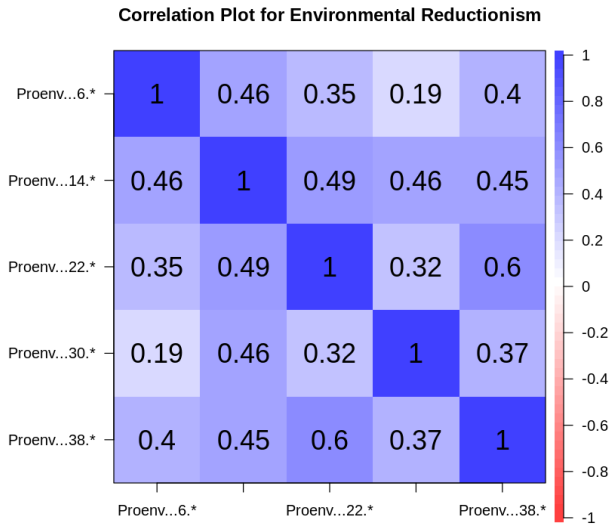
Then we plot the correlation plot for each study variable:

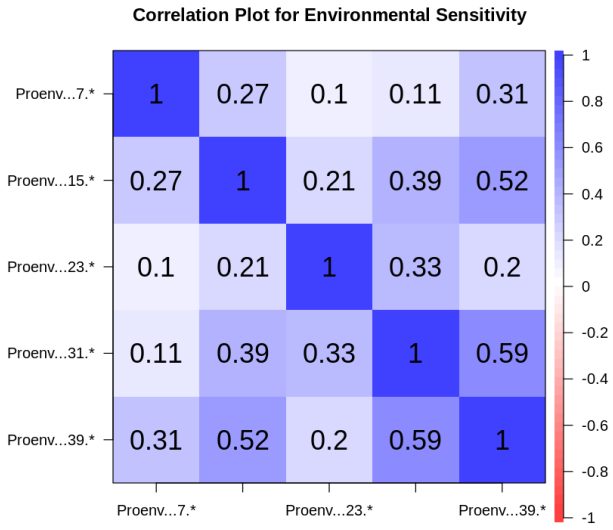


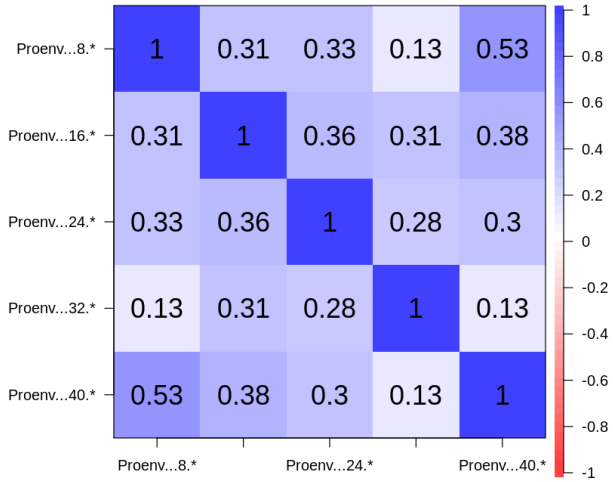


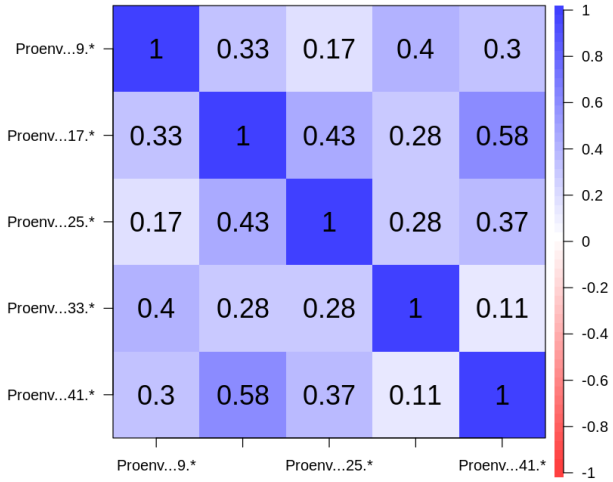




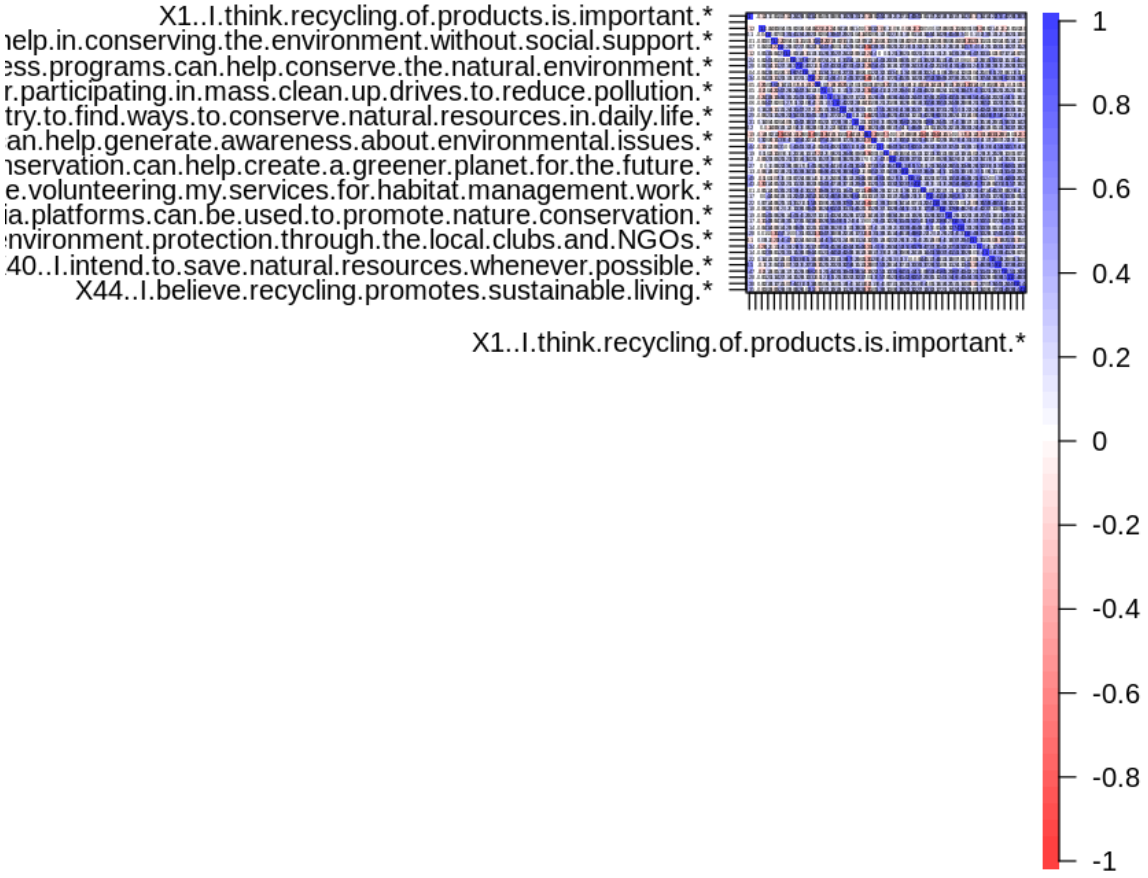

Correlation Plot for Environmental Reductionism
Proenv...6.*
Proenv...14.*
Proenv...22.*
Proenv...30.*
Proenv...38.*
1 0.46 0.35 0.19 0.4
0.46 1 0.49 0.46 0.45
0.35 0.49 1 0.32 0.6
0.19 0.46 0.32 1 0.37
0.4 0.45 0.6 0.37 1
Proenv...6.*
Proenv...22.*
Proenv...38.*
1 0.8 0.6 0.4 0.2 0 -0.2 -0.4 -0.6 -0.8 -1


Correlation Plot for Environmental Sensitivity
Proenv...7.*
Proenv...15.*
Proenv...23.*
Proenv...31.*
Proenv...39.*
1 0.27 0.1 0.11 0.31
0.27 1 0.21 0.39 0.52
0.1 0.21 1 0.33 0.2
0.11 0.39 0.33 1 0.59
0.31 0.52 0.2 0.59 1
Proenv...7.*
Proenv...23.*
Proenv...39.*
1 0.8 0.6 0.4 0.2 0 -0.2 -0.4 -0.6 -0.8 -1


Correlation Plot for Reuse
Proenv...8.*
Proenv...16.*
Proenv...24.*
Proenv...32.*
Proenv...40.*
1 0.31 0.33 0.13 0.53
0.31 1 0.36 0.31 0.38
0.33 0.36 1 0.28 0.3
0.13 0.31 0.28 1 0.13
0.53 0.38 0.3 0.13 1
Proenv...8.*
Proenv...24.*
Proenv...40.*
1 0.8 0.6 0.4 0.2 0 -0.2 -0.4 -0.6 -0.8 -1


Correlation Plot for Conservation
Proenv...9.*
Proenv...17.*
Proenv...25.*
Proenv...33.*
Proenv...41.*
1 0.33 0.17 0.4 0.3
0.33 1 0.43 0.28 0.58
0.17 0.43 1 0.28 0.37
0.4 0.28 0.28 1 0.11
0.3 0.58 0.37 0.11 1
Proenv...9.*
Proenv...25.*
Proenv...41.*
1 0.8 0.6 0.4 0.2 0 -0.2 -0.4 -0.6 -0.8 -1

Then we plot the correlation plot of the whole dataset:



Now we present some tables which represent the **Item Total Correlations**:

- **Item Total Correlation of Recycling:**

Categories	REC1	REC2	REC3	REC4	REC5	REC6	REC7
Correlation-Coefficient	0.4565137	0.4913224	0.7474637	0.7906511	0.6487323	0.7847712	0.4990557

- **Item Total Correlation of Environmental Safety:**

Categories	SA1	SA2	SA3	SA4	SA5	SA6
Correlation-Coefficient	0.3224592	0.5829707	0.6396671	0.6253698	0.6519942	0.7287488

- **Item Total Correlation of Perceived Control:**

Categories	PC1	PC2	PC3	PC4	PC5	PC6
Correlation-Coefficient	0.5479389	0.4002894	0.2101938	0.559876	0.235954	0.5073522

- **Item Total Correlation of Social Support:**

Categories	SS1	SS2	SS3	SS4	SS5
Correlation-Coefficient	0.2041244	0.7339349	0.7368995	0.7141627	0.54211

- **Item Total Correlation of Environmental Reductionism:**

Categories	ER1	ER2	ER3	ER4	ER5
Correlation-Coefficient	0.6238301	0.8168987	0.7669041	0.6407463	0.7768291

- **Item Total Correlation of Environmental Sensitivity:**

Categories	ES1	ES2	ES3	ES4	ES5
Correlation-Coefficient	0.5309661	0.7351616	0.5542861	0.7261367	0.778553

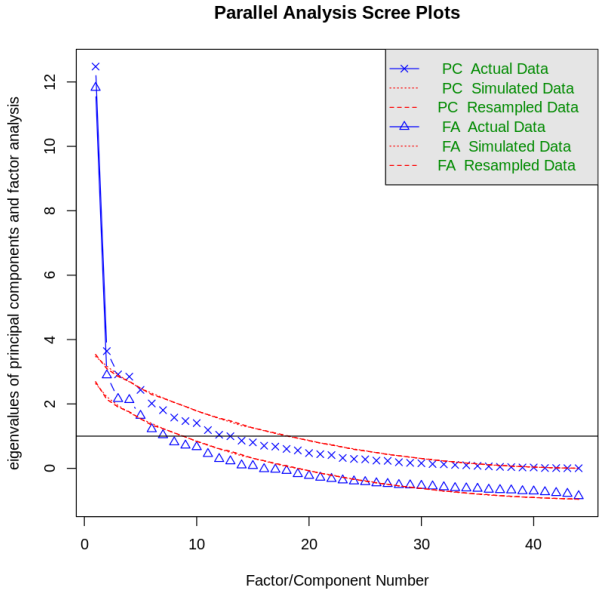
- **Item Total Correlation of Reuse:**

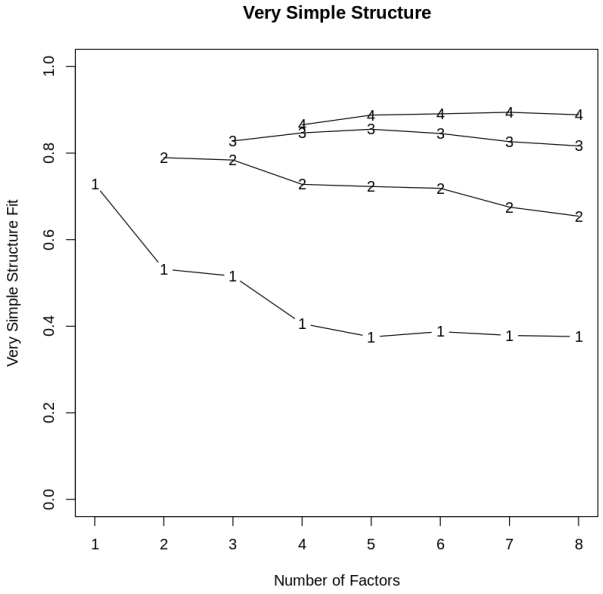
Categories	RES1	RES2	RES3	RES4	RES5
Correlation-Coefficient	0.7196301	0.7238039	0.6700122	0.5007734	0.7104787

- **Item Total Correlation of All Conservation:**

Categories	CON1	CON2	CON3	CON4	CON5
Correlation-Coefficient	0.6641994	0.7725918	0.5742426	0.6069429	0.7060935

Now after Factor Analysis, we plot a Parallel Analysis Scree Plot and a Very Simple Structure Fit:





Now we present some basic descriptive statistics:

Description of the Whole Dataset:

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
	<int>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>
X1..I.think.recycling.of.products.is.important.	1	48	4.750000	0.4375950	5	4.800	0.0000	4	5	1	-1.118804744	-0.7628761	0.06316139
X	2	0	NaN	NA	NA	NaN	NA	Inf	-Inf	-Inf	NA	NA	NA
X2...Safe.disposal.of.waste.products.is.costly.	3	48	3.645833	0.9106832	4	3.700	0.0000	1	5	4	-0.757242149	0.2717967	0.13144580
X3..I.feel.I.am.adept.at.managing.waste.around.my.surroundings.	4	48	3.562500	0.8729078	4	3.650	0.0000	1	5	4	-1.126868543	1.2755699	0.12599339
X4..I.believe.that.an.individual.alone.cannot.help.in.conserving.the.environment.without.social.support.	5	48	2.020833	1.2114627	2	1.850	1.4826	1	5	4	1.086060129	0.1443483	0.17485958
X5..I.believe.closing.the.taps.when.we.brush.can.help.save.water.	6	48	4.645833	0.5255021	5	4.700	0.0000	3	5	2	-1.016015419	-0.1450555	0.07584970
X6..I.like.working.in.well.illuminated..airy.places.	7	48	4.229167	0.9506903	4	4.375	1.4826	1	5	4	-1.328251718	1.5319796	0.13722033
X7..I.find.new.ways.to.use.waste.products.	8	48	3.395833	0.9618153	4	3.425	1.4826	1	5	4	-0.552779914	-0.1194517	0.13882608
X8..Regular.awareness.programs.can.help.conserve.the.natural.environment.	9	48	3.958333	0.9443749	4	4.075	1.4826	1	5	4	-0.958682879	0.7482794	0.13630878
X9..I.upcycle.old.products.into.new.and.useful.items.	10	48	3.312500	0.9261278	3	3.275	1.4826	2	5	3	-0.006761607	-1.0390951	0.13367504
X10..I.believe.there.should.be.a.fine.imposed.on.people.who.don.t.follow.proper.protocols.	11	48	4.208333	0.7978251	4	4.275	1.4826	2	5	3	-0.620769662	-0.4943916	0.11515613
X11..I.often.feel.as.though.one.single.person.cannot.change.the.environment.	12	48	2.083333	1.0685710	2	2.000	1.4826	1	4	3	0.760764924	-0.6845108	0.15423494
X12..I.prefer.participating.in.mass.clean.up.drives.to.reduce.pollution.	13	48	3.833333	1.0382746	4	3.925	1.4826	1	5	4	-0.678349304	-0.2890255	0.14986203
X13..I.feel.the.Earth.has.plenty.of.natural.resources.if.we.just.learn.how.to.effectively.use.them.	14	48	4.291667	0.8741764	4	4.425	1.4826	1	5	4	-1.516209100	2.7808003	0.12617650
X14..Disordered.surroundings.make.me.anxious.	15	48	4.020833	1.0617044	4	4.200	1.4826	1	5	4	-1.398061629	1.7148148	0.15324384
X15..Items.should.be.repaired.before.deciding.to.throw.them.away.	16	48	3.979167	0.9562690	4	4.075	1.4826	2	5	3	-0.531598434	-0.7819663	0.13802554
X16..I.try.to.find.ways.to.conserve.natural.resources.in.daily.life.	17	48	4.000000	0.8251370	4	4.075	0.0000	2	5	3	-0.667502793	0.0560709	0.11909827
X17..I.believe.recycling.reduces.the.consumption.of.new.raw.materials.	18	48	4.333333	0.6302088	4	4.375	0.0000	2	5	3	-0.869342147	1.8721035	0.09096280
X18..Strict.policies.should.be.put.into.place.to.conserve.the.environment.	19	48	4.479167	0.6838434	5	4.575	0.0000	2	5	3	-1.294836166	1.7905221	0.09870430
X19..I.believe.my.actions.are.responsible.for.climate.change.	20	48	1.958333	0.8741764	2	1.850	0.0000	1	5	4	1.200449513	1.9246033	0.12617650
X20..Creating.nature.clubs.can.help.generate.awareness.about.environmental.issues.	21	48	3.875000	1.0236564	4	3.975	1.4826	1	5	4	-0.688270687	-0.1985533	0.14775207
X21..I.firmly.support.closing.the.lights.and.fans.in.a.room.before.leaving.it.	22	48	4.541667	0.7133479	5	4.675	0.0000	2	5	3	-1.520500697	1.9211308	0.10296290
X22..Crowded.places.make.me.feel.uneasy.	23	48	3.895833	0.9506903	4	3.975	1.4826	2	5	3	-0.379960517	-0.9163716	0.13722033
X23..I.like.buying.products.that.can.be.used.again..rather.than.disposable.items.	24	48	3.937500	0.8096821	4	4.000	0.0000	2	5	3	-0.596995595	0.0283248	0.11686754
X24..Conservation.can.help.create.a.greener.planet.for.the.future.	25	48	4.541667	0.7133479	5	4.625	0.0000	1	5	4	-2.553564343	9.8861783	0.10296290
X25..I.like.to.learn.more.about.product.recycling.	26	48	4.104167	0.8312918	4	4.200	0.7413	2	5	3	-0.841513252	0.3394844	0.11998664
X26..I.believe.proper.precaution.should.be.taken.when.dealing.with.toxic.chemicals.	27	48	4.770833	0.4247444	5	4.825	0.0000	4	5	1	-1.248708518	-0.4487836	0.06130657
X27..I.think.environmental.conservation.is.everyone.s.responsibility.	28	48	4.687500	0.5891303	5	4.800	0.0000	3	5	2	-1.654890574	1.6144716	0.08503363
X28..I.like.volunteering.my.services.for.habitat.management.work.	29	48	3.770833	0.9280403	4	3.825	1.4826	2	5	3	-0.171843656	-0.9758637	0.13395108
X29..I.feel.all.products..like.shampoo.and.soap..should.be.used.till.the.very.end.	30	48	4.354167	0.6354621	4	4.425	1.4826	3	5	2	-0.430111180	-0.7685014	0.09172105
X30..Very.loud.noise.or.music.makes.me.uncomfortable.	31	48	4.125000	0.9812064	4	4.250	1.4826	1	5	4	-1.037893203	0.6248552	0.14162494
X31..Reuse.preserves.natural.resources.	32	48	4.375000	0.6724044	4	4.450	1.4826	2	5	3	-0.989370929	1.3596379	0.09705321
X32..I.feel.social.media.platforms.can.be.used.to.promote.nature.conservation.	33	48	4.187500	0.8162251	4	4.275	1.4826	2	5	3	-0.801847314	0.0994151	0.11781194
X33..I.believe.recycling.is.truly.beneficial.for.the.environment.	34	48	4.520833	0.6519882	5	4.600	0.0000	2	5	3	-1.428148124	2.5952690	0.09410640
X34..Precautionary.measures.should.be.undertaken.in.a.firm.manner.with.regard.to.natural.disasters.	35	48	4.270833	0.7646327	4	4.375	1.4826	2	5	3	-1.038299976	1.0703066	0.11036522
X35..I.believe.our.cumulative.efforts.can.reduce.global.warming.	36	48	4.479167	0.6519882	5	4.550	0.0000	2	5	3	-1.277940376	2.2493925	0.09410640
X36..I.believe.in.social.support.of.environment.protection.through.the.local.clubs.and.NGOs.	37	48	4.020833	0.8376660	4	4.125	0.0000	1	5	4	-1.313622481	2.5854418	0.12090668
X37..I.feel.everyone.should.switch.to.eco.friendly.methods.more.frequently.	38	48	4.416667	0.7096098	5	4.525	0.0000	2	5	3	-1.111019096	1.0802293	0.10242336
X38..I.feel.irritated.when.I.see.garbage.thrown.on.the.road.and.the.roadside.	39	48	4.375000	0.8660254	5	4.525	0.0000	1	5	4	-1.738064873	3.5403645	0.12500000
X39..I.look.for.new.ways.to.reuse.old.products.	40	48	3.812500	0.8162251	4	3.875	0.0000	2	5	3	-0.577365983	-0.0413970	0.11781194
X40..I.intend.to.save.natural.resources.whenever.possible.	41	48	4.145833	0.8502711	4	4.250	0.7413	1	5	4	-1.288364300	2.4534490	0.12272607
X41..I.believe.recycling.reduces.waste.production.	42	48	4.437500	0.5421097	4	4.450	0.0000	3	5	2	-0.150177364	-1.2177774	0.07824680
X42..I.feel.policies.should.be.put.in.place.to.increase.environmental.safety.	43	48	4.333333	0.6944563	4	4.400	1.4826	3	5	2	-0.525285177	-0.8900483	0.10023613
X43..I.believe.that.I.can.control.environmental.pollution.	44	48	3.625000	0.9592772	4	3.650	1.4826	2	5	3	-0.349586574	-0.8758092	0.13845974
X44..I.believe.recycling.promotes.sustainable.living.	45	48	4.375000	0.4892461	4	4.350	0.0000	4	5	1	0.500344692	-1.7855613	0.07061659

Now we show the frequency and percentage distributions of each study variable:

Frequency Distribution of Recycling:

	REC1	REC2	REC3	REC4	REC5	REC6	REC7
5	36	4	19	16	28	22	18
4	12	18	27	24	18	25	30
3	0	15	1	5	1	1	0
2	0	11	1	3	1	0	0

Percentage Distribution of Recycling:

	REC1	REC2	REC3	REC4	REC5	REC6	REC7
5	17.28	1.92	9.12	7.68	13.44	10.56	8.64
4	5.76	8.64	12.96	11.52	8.64	12.00	14.40
3	0.00	7.20	0.48	2.40	0.48	0.48	0.00
2	0.00	5.28	0.48	1.44	0.48	0.00	0.00

Frequency Distribution of Environmental Safety:

	SA1	SA2	SA3	SA4	SA5	SA6
5	6	20	27	37	20	22
4	26	19	18	11	23	20
3	10	8	2	0	3	6
2	5	1	1	0	2	0
1	1	0	0	0	0	0

Percentage Distribution of Environmental Safety:

	SA1	SA2	SA3	SA4	SA5	SA6
5	2.88	9.60	12.96	17.76	9.60	10.56
4	12.48	9.12	8.64	5.28	11.04	9.60
3	4.80	3.84	0.96	0.00	1.44	2.88
2	2.40	0.48	0.48	0.00	0.96	0.00
1	0.48	0.00	0.00	0.00	0.00	0.00

Frequency Distribution of Perceived Control:

	PC1	PC2	PC3	PC4	PC5	PC6
4	28	9	2	9	20	22
5	3	0	1	36	26	8
3	12	2	5	3	1	10
1	2	16	14	0	0	0
2	3	21	26	0	1	8

Percentage Distribution of Perceived Control:

	PC1	PC2	PC3	PC4	PC5	PC6
4	13.44	4.32	0.96	4.32	9.60	10.56
5	1.44	0.00	0.48	17.28	12.48	3.84
3	5.76	0.96	2.40	1.44	0.48	4.80
1	0.96	7.68	6.72	0.00	0.00	0.00
2	1.44	10.08	12.48	0.00	0.48	3.84

Frequency Distribution of Social Support:

	SS1	SS2	SS3	SS4	SS5
3	5	9	10	15	4
1	21	1	1	0	1
2	15	5	4	4	2
4	4	19	18	17	29
5	3	14	15	12	12

Percentage Distribution of Social Support:

	SS1	SS2	SS3	SS4	SS5
3	2.40	4.32	4.80	7.20	1.92
1	10.08	0.48	0.48	0.00	0.48
2	7.20	2.40	1.92	1.92	0.96
4	1.92	9.12	8.64	8.16	13.92
5	1.44	6.72	7.20	5.76	5.76

Frequency Distribution of Environmental Reductionism:

	ER1	ER2	ER3	ER4	ER5
5	32	23	31	21	25
4	15	19	13	23	19
3	1	4	3	4	3
1	0	1	0	0	0
2	0	1	1	0	1

Percentage Distribution of Environmental Reductionism:

	ER1	ER2	ER3	ER4	ER5
5	15.36	11.04	14.88	10.08	12.00
4	7.20	9.12	6.24	11.04	9.12
3	0.48	1.92	1.44	1.92	1.44
1	0.00	0.48	0.00	0.00	0.00
2	0.00	0.48	0.48	0.00	0.48

Frequency Distribution of Environmental Sensitivity:

	ES1	ES2	ES3	ES4	ES5
4	17	22	17	16	17
5	23	17	15	21	26
1	1	3	0	1	1
2	2	1	4	2	1
3	5	5	12	8	3

Percentage Distribution of Environmental Sensitivity:

	ES1	ES2	ES3	ES4	ES5
4	8.16	10.56	8.16	7.68	8.16
5	11.04	8.16	7.20	10.08	12.48
1	0.48	1.44	0.00	0.48	0.48
2	0.96	0.48	1.92	0.96	0.48
3	2.40	2.40	5.76	3.84	1.44

Frequency Distribution of Reuse:

	RES1	RES2	RES3	RES4	RES5
4	21	17	26	23	27
5	4	17	11	22	8
1	2	0	0	0	0
2	6	4	3	1	4
3	15	10	8	2	9

Percentage Distribution of Reuse:

	RES1	RES2	RES3	RES4	RES5
4	10.08	8.16	12.48	11.04	12.96
5	1.92	8.16	5.28	10.56	3.84
1	0.96	0.00	0.00	0.00	0.00
2	2.88	1.92	1.44	0.48	1.92
3	7.20	4.80	3.84	0.96	4.32

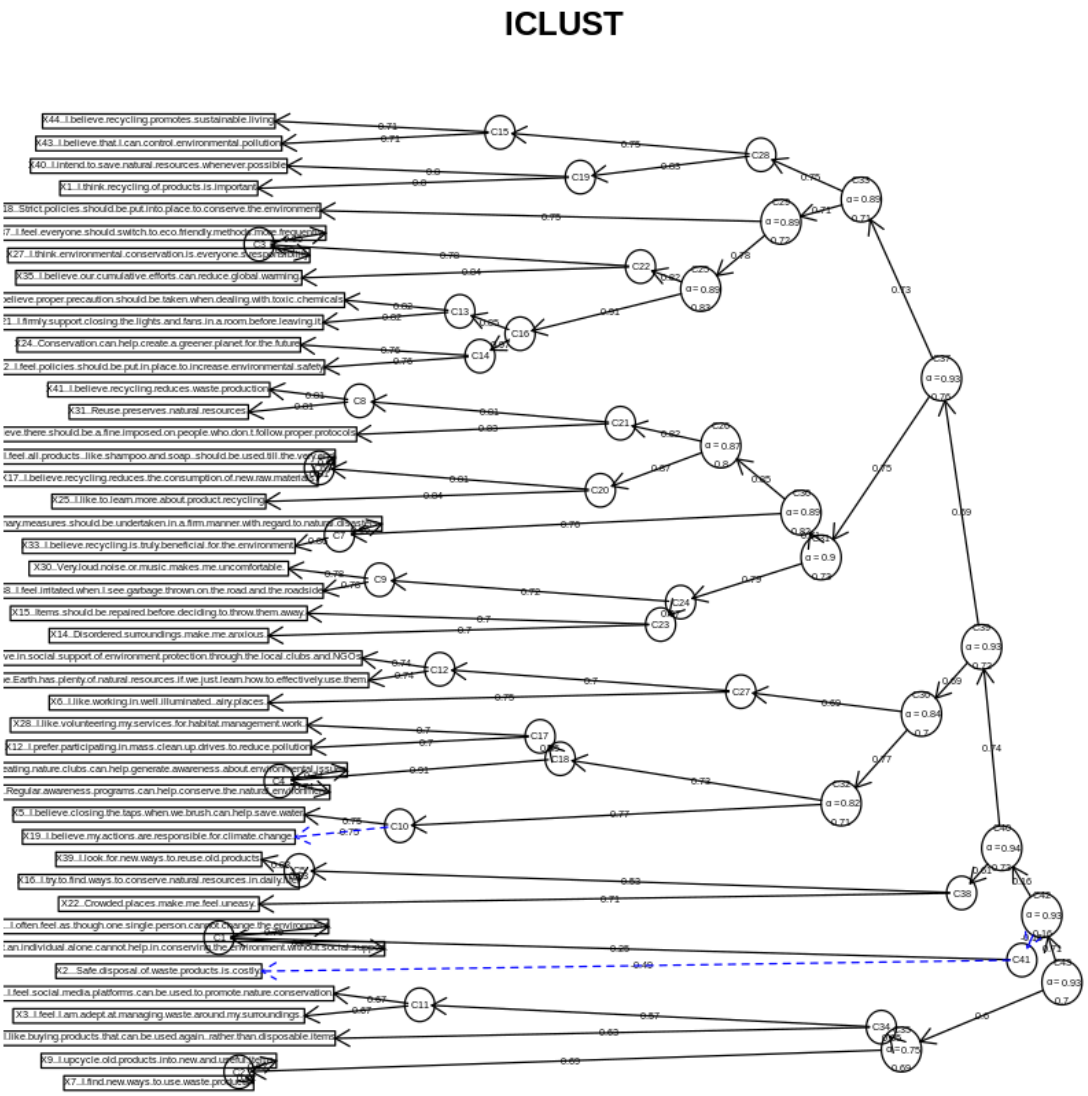
Frequency Distribution of Conservation:

	CON1	CON2	CON3	CON4	CON5
3	7	7	0	6	5
4	23	25	18	21	24
5	14	13	29	19	17
1	1	0	1	0	1
2	3	3	0	2	1

Percentage Distribution of Conservation:

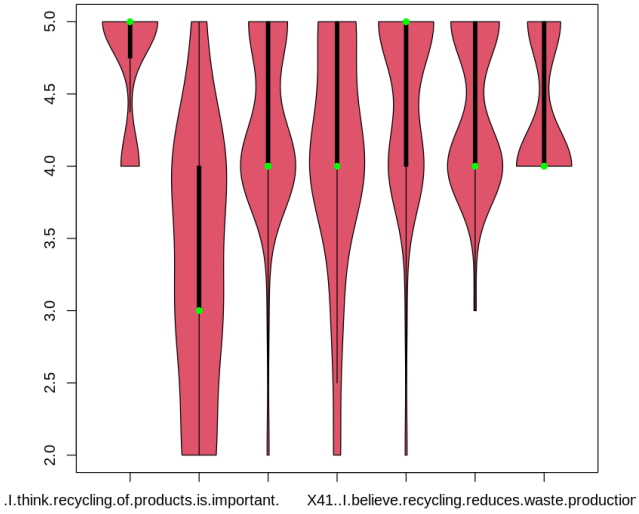
	CON1	CON2	CON3	CON4	CON5
3	3.36	3.36	0.00	2.88	2.40
4	11.04	12.00	8.64	10.08	11.52
5	6.72	6.24	13.92	9.12	8.16
1	0.48	0.00	0.48	0.00	0.48
2	1.44	1.44	0.00	0.96	0.48

Now we use Item Cluster Analysis to identify homogeneous subgroupings of 44 items:

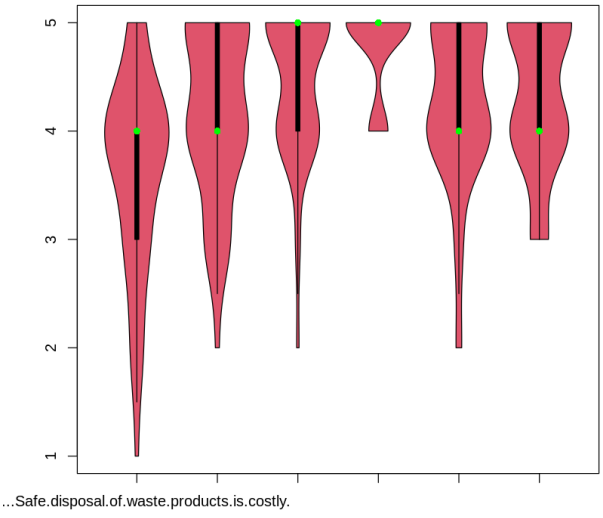


Now we present Violin Plots of all the 8 study variables:

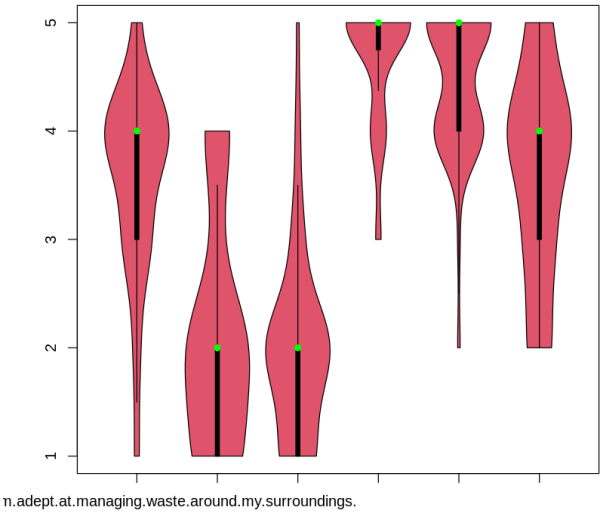
Violin Plot of Recycling:



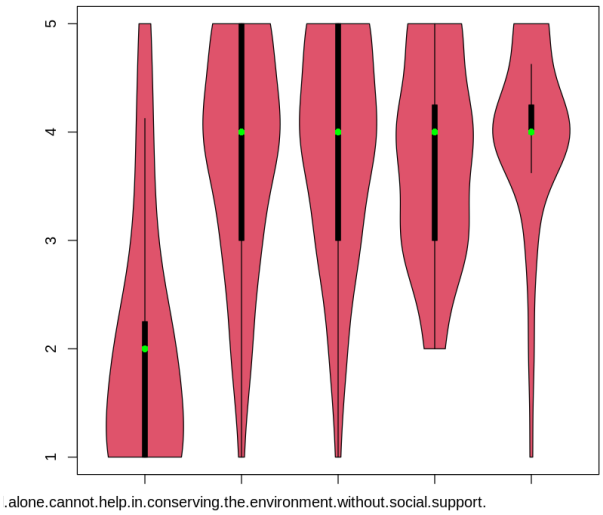
Violin Plot of Environmental Safety:



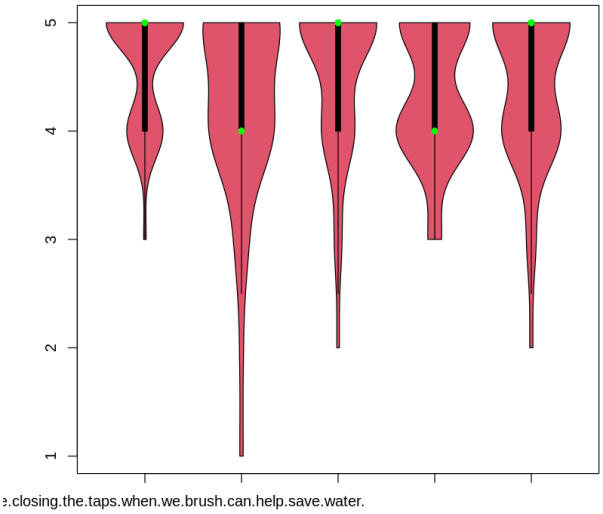
Violin Plot of Perceived Control:



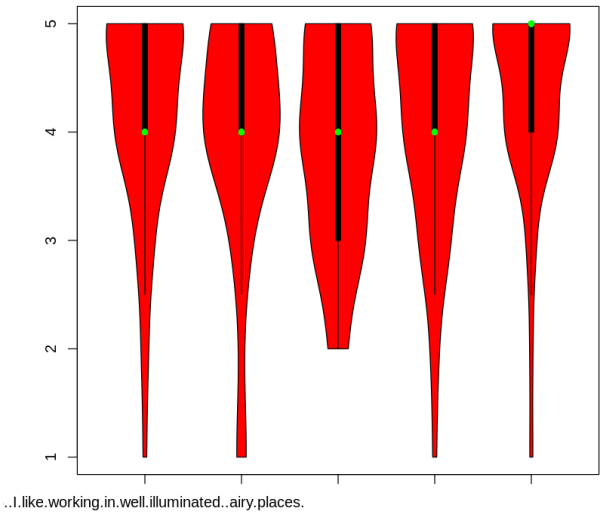
Violin Plot of Social Support:



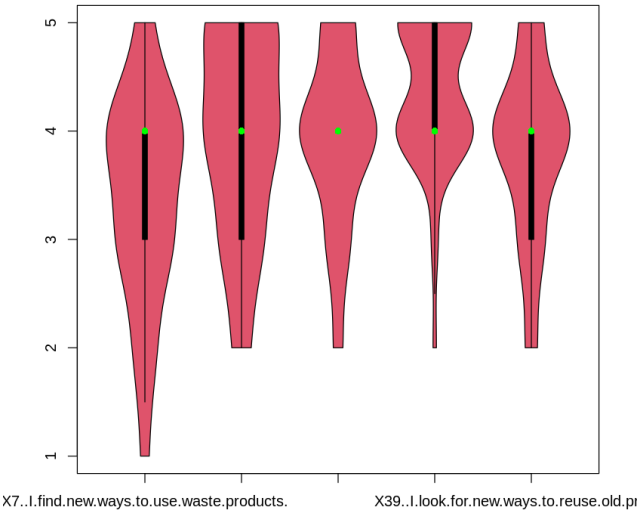
Violin Plot of Environmental Reduction:



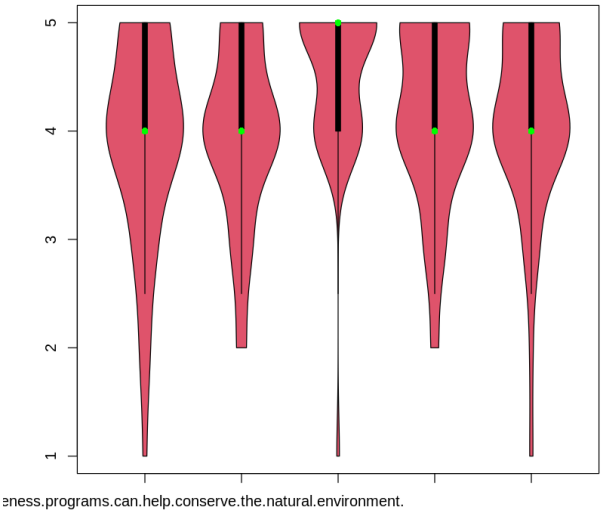
Violin Plot of Environmental Sensitivity:



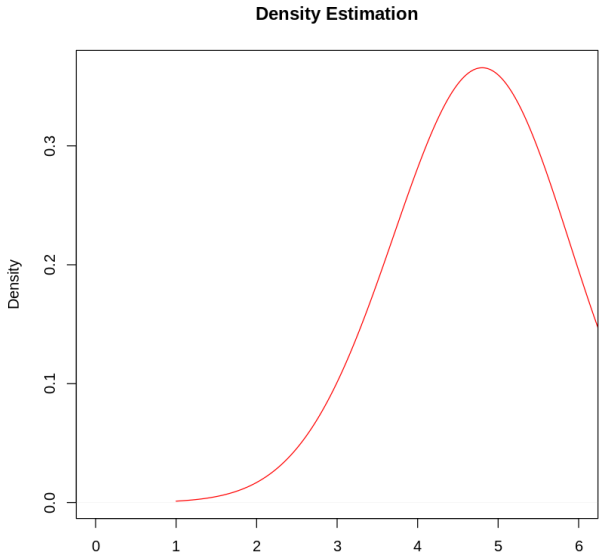
Violin Plot of Reuse:

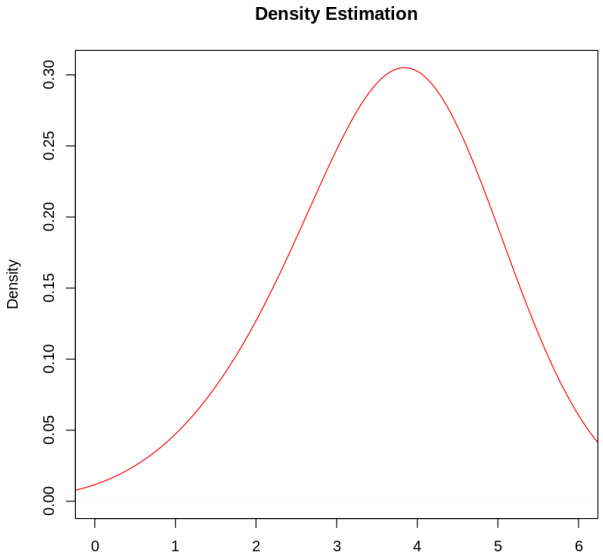


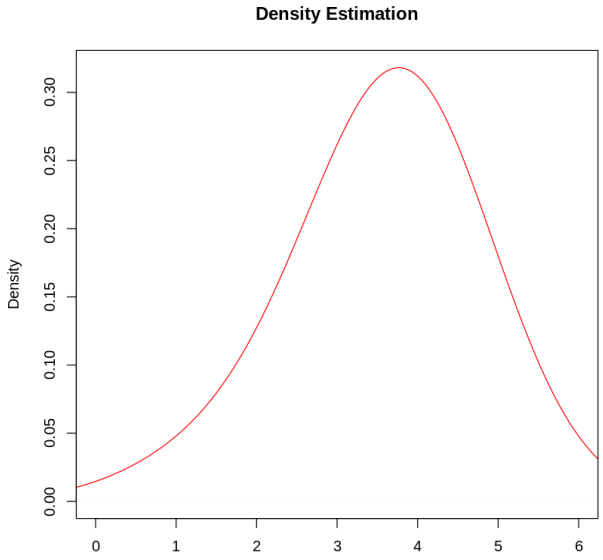
Violin Plot of Conservation:

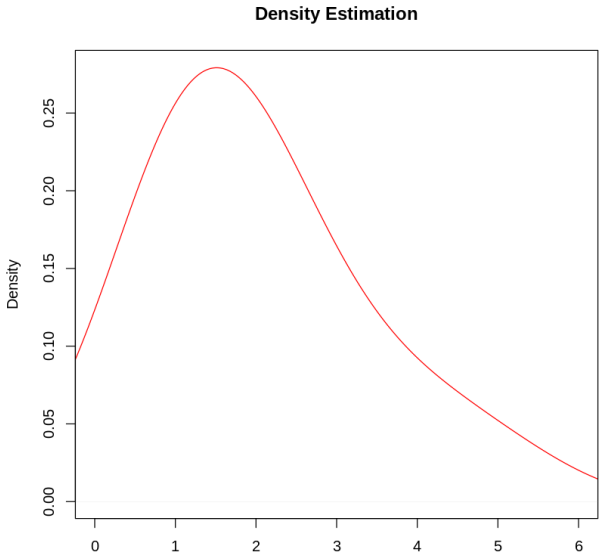


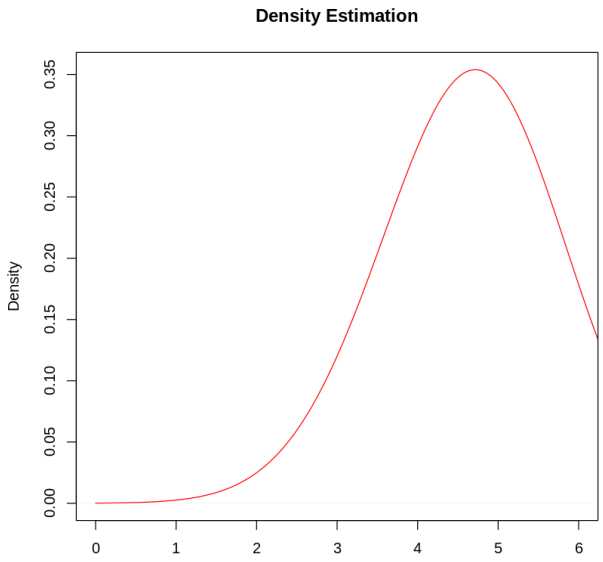
Now we show the **Density Estimations** of all the 44 variables:







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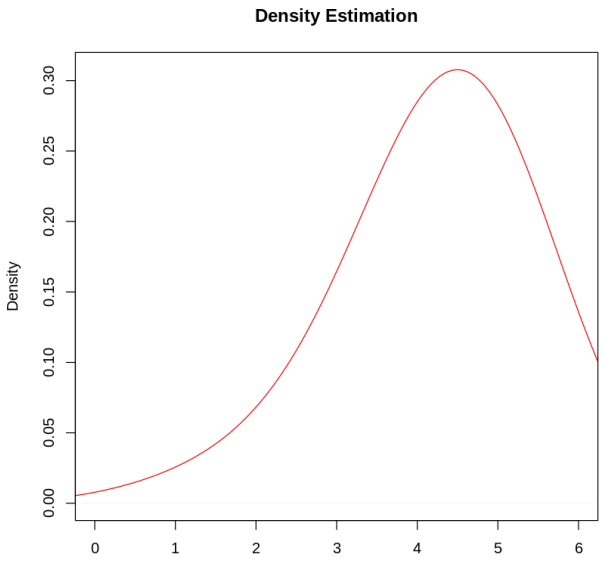
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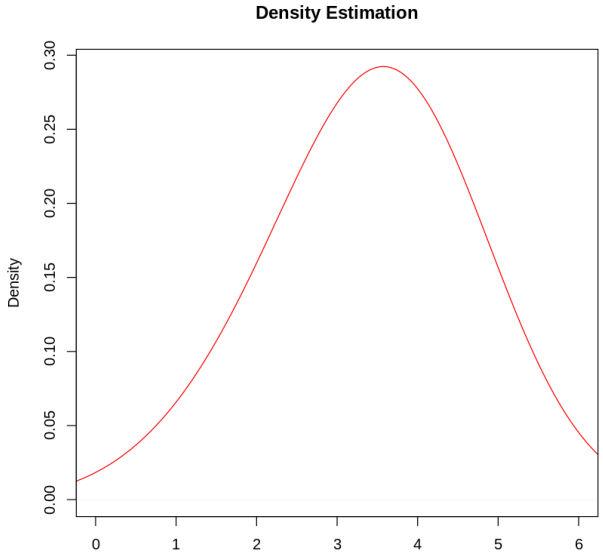
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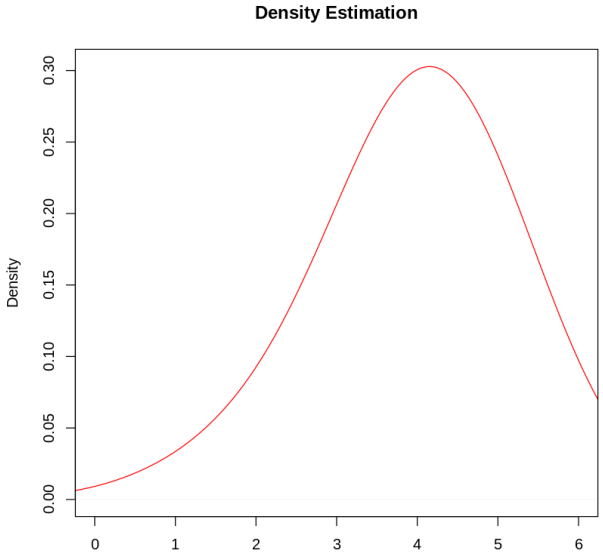
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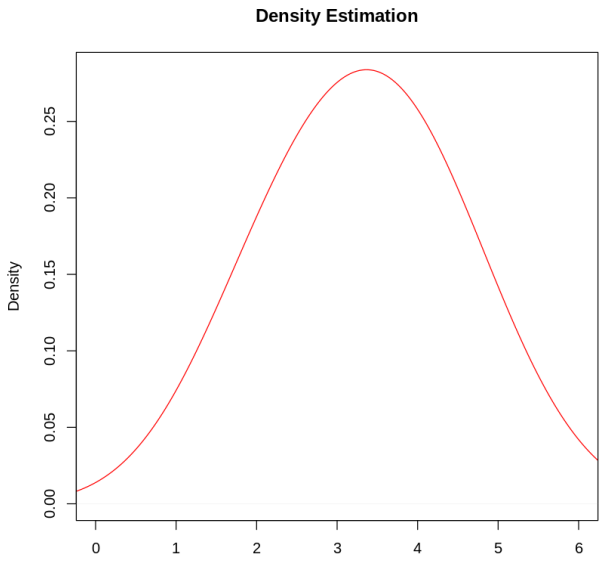
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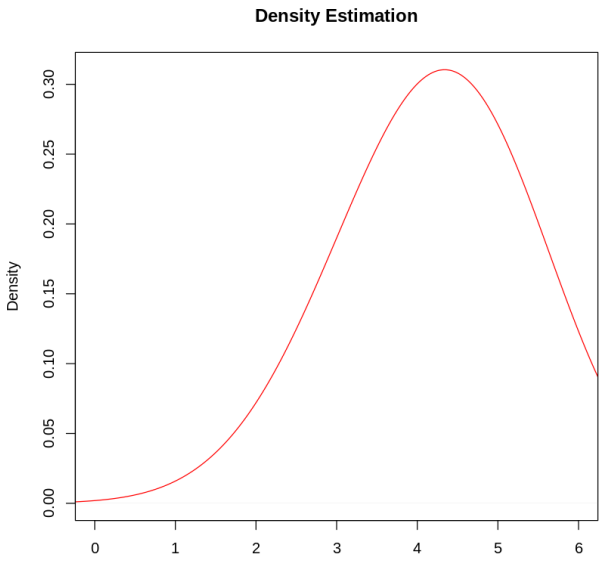
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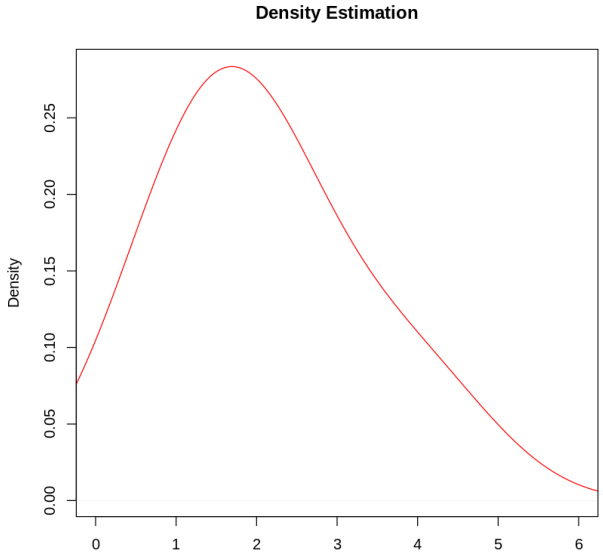
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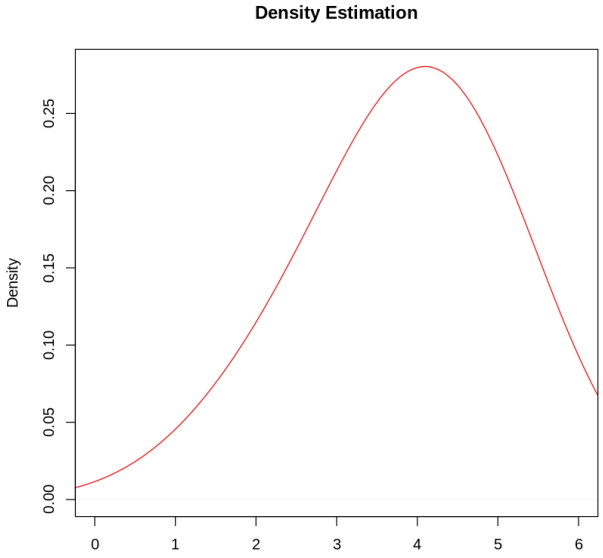
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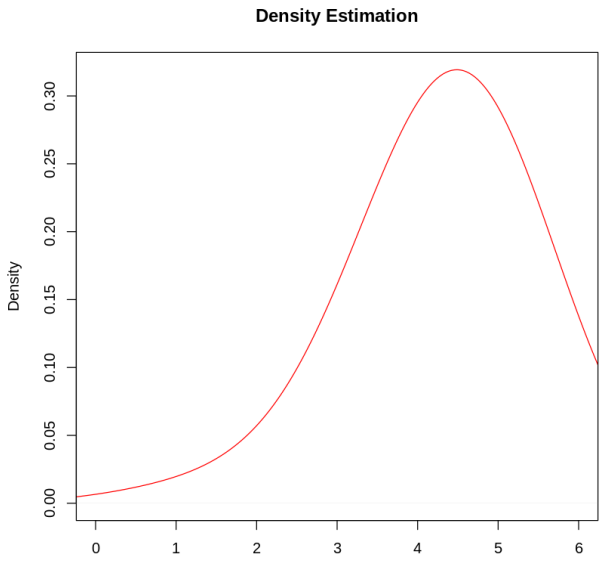
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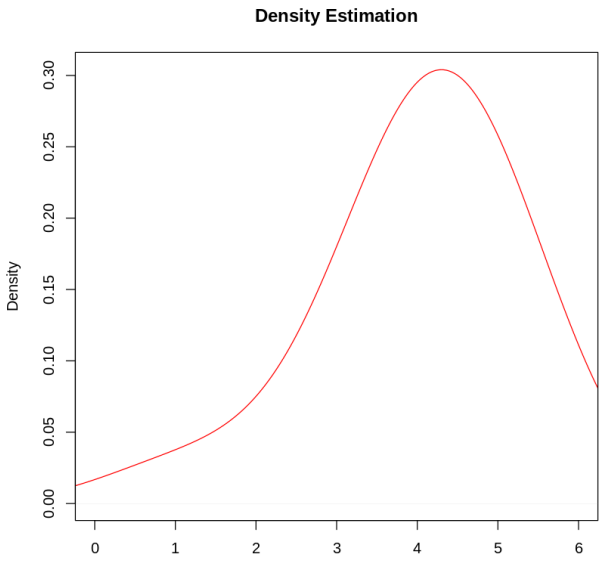
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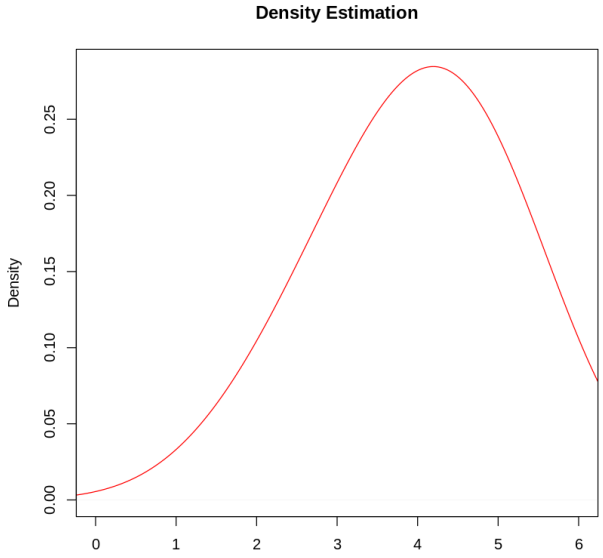
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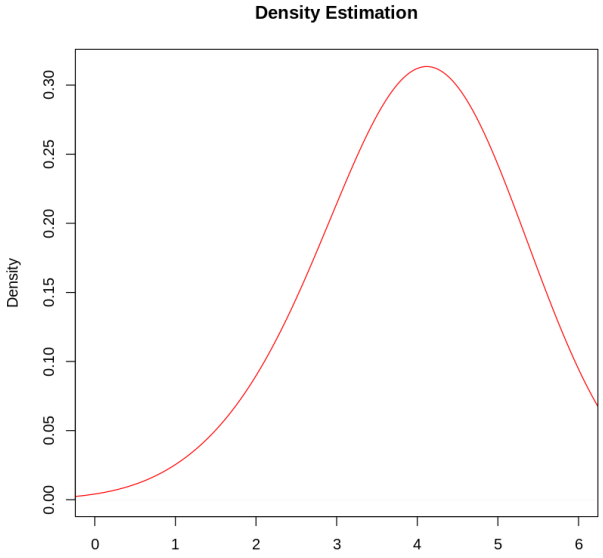
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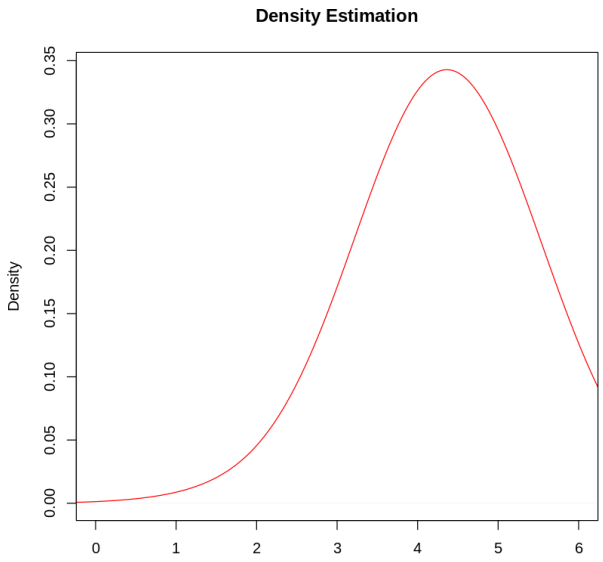
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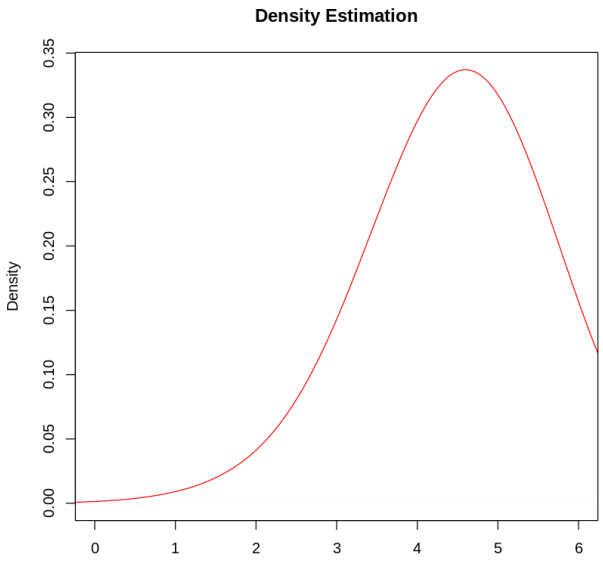
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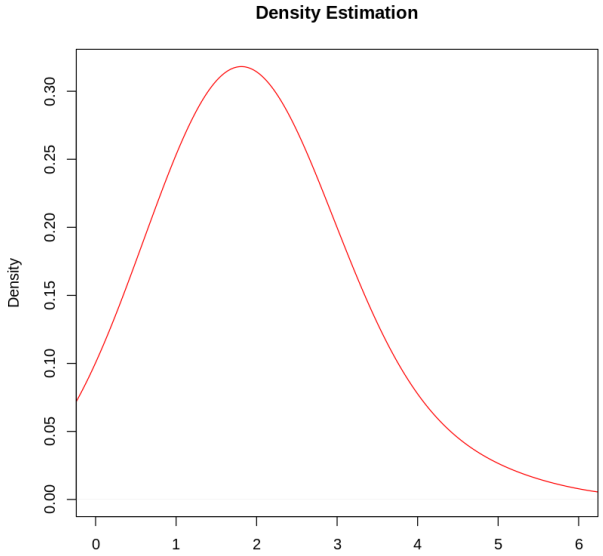
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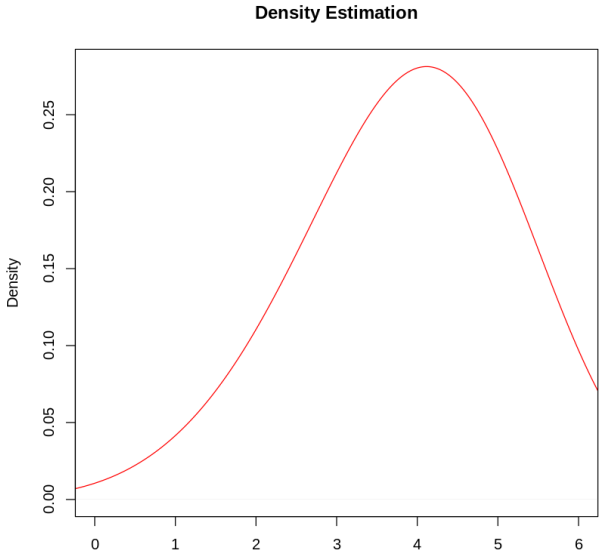
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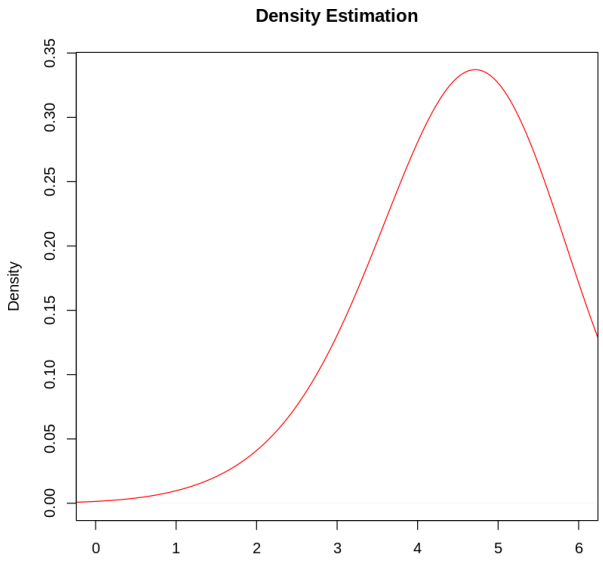
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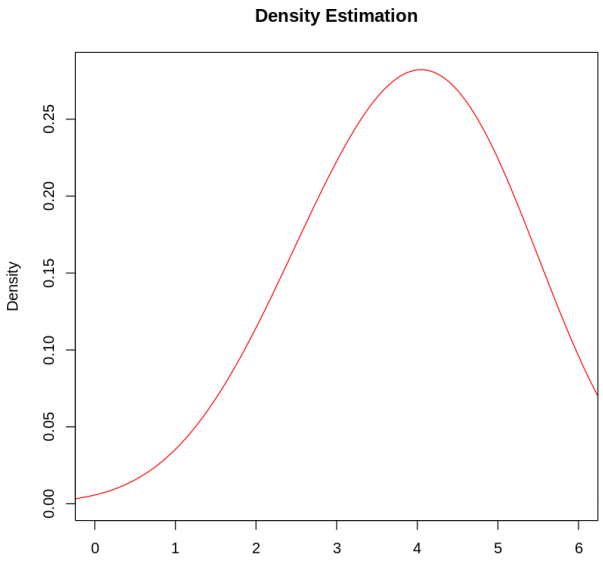
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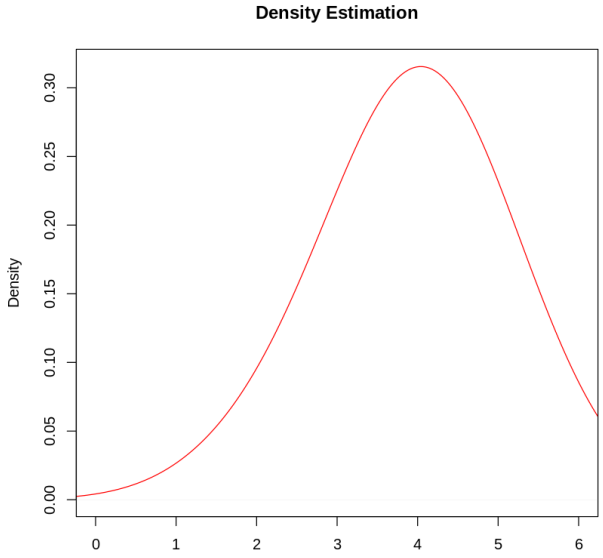
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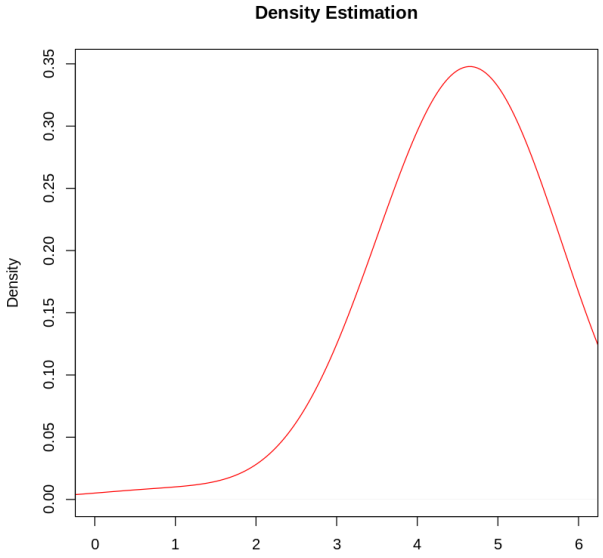
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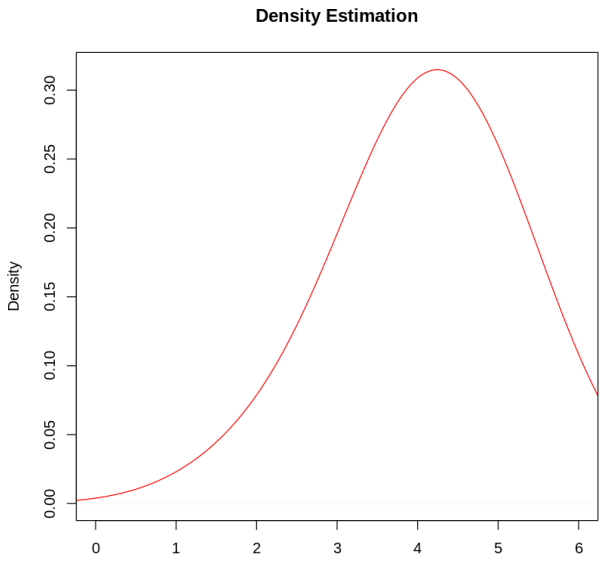
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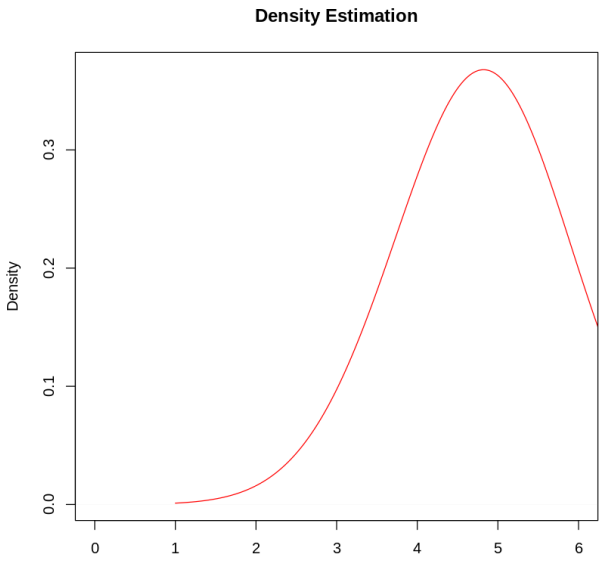
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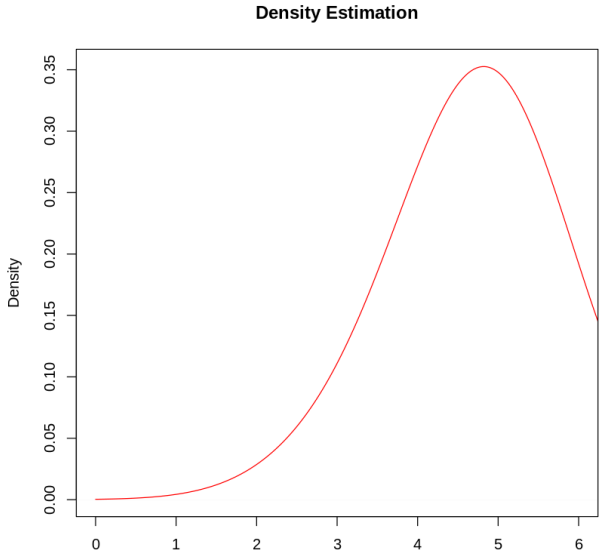
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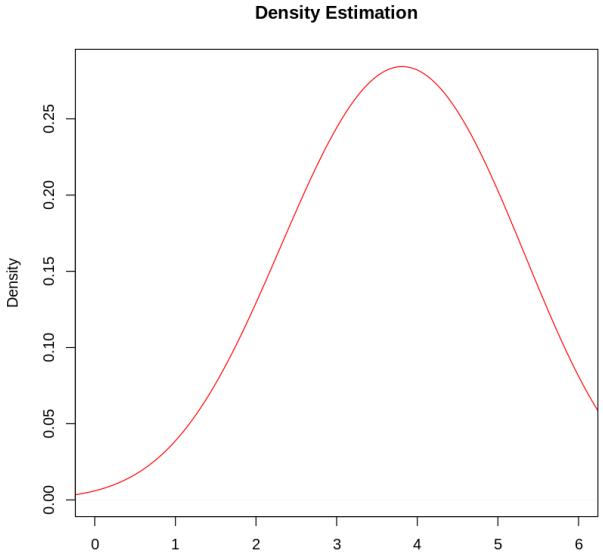
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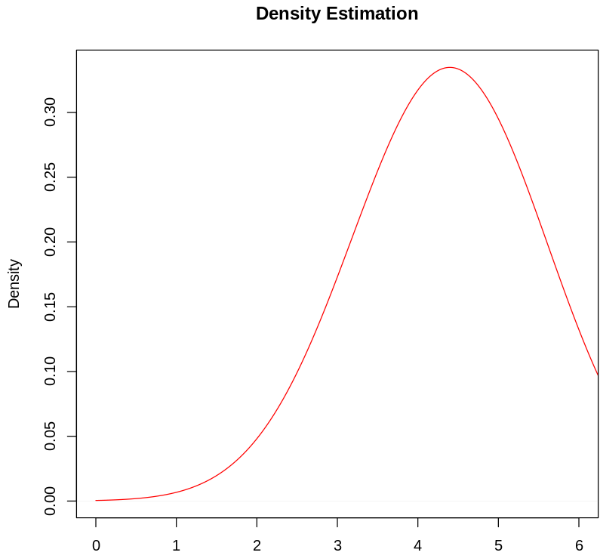
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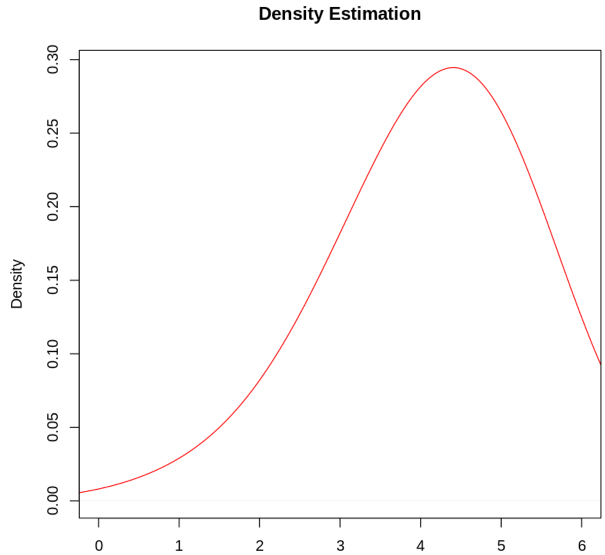
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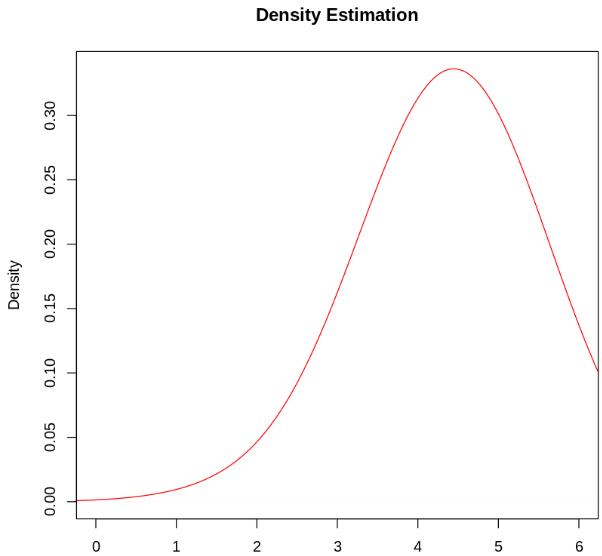
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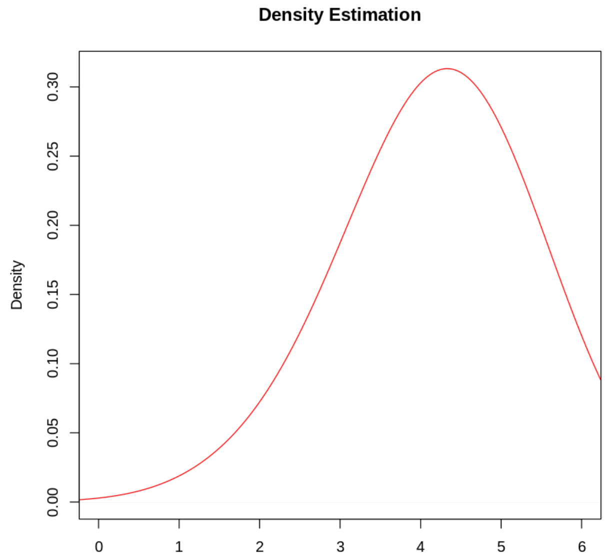
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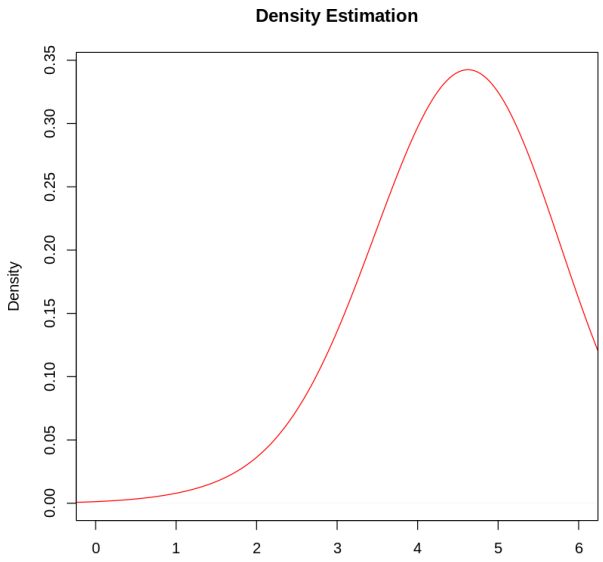
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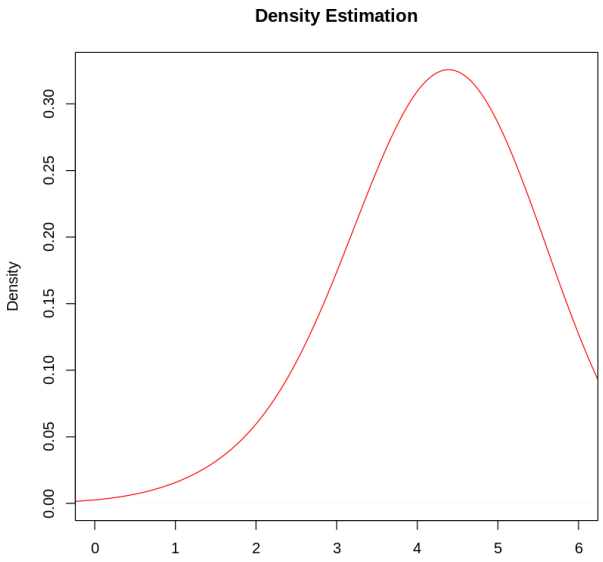
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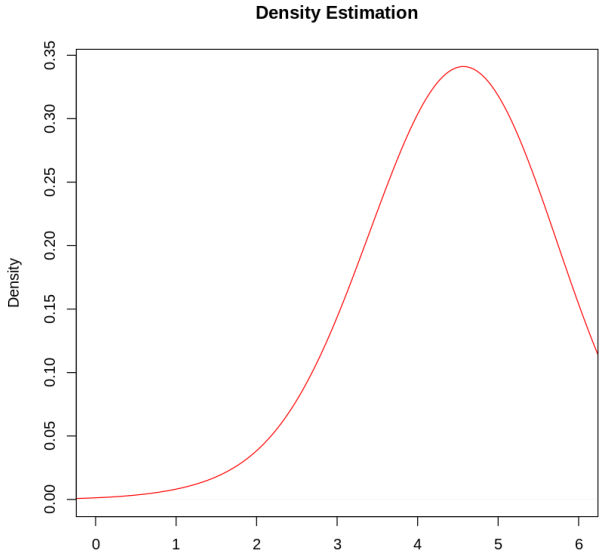
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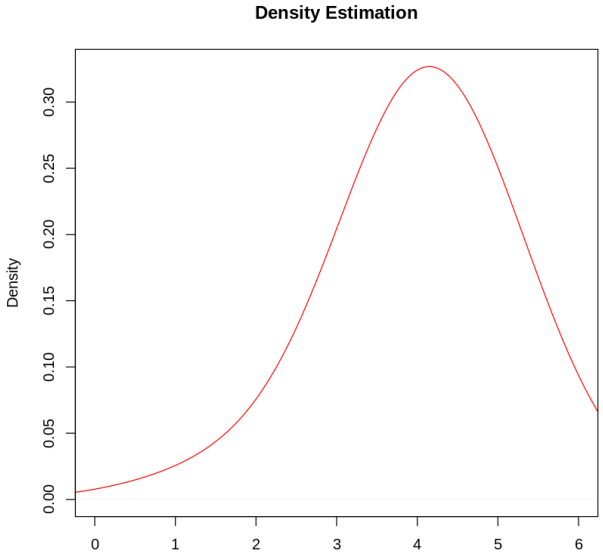
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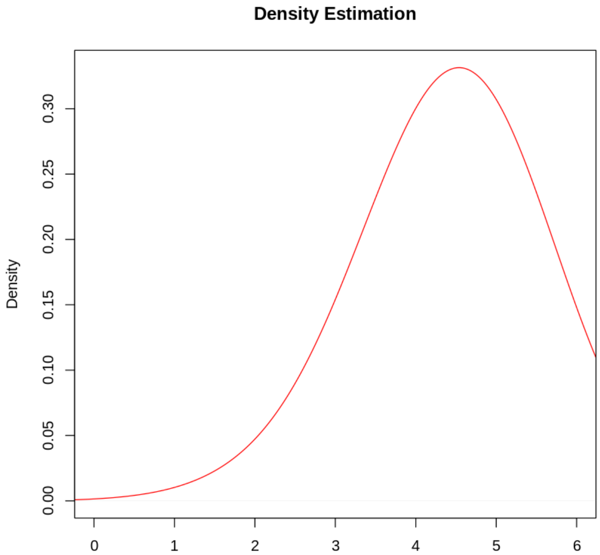
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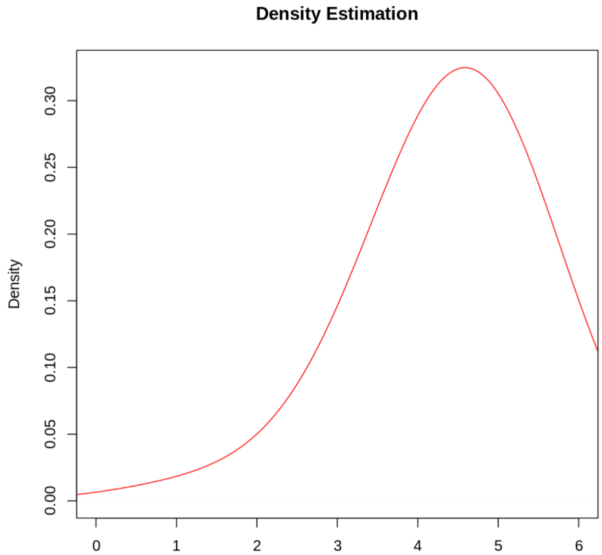
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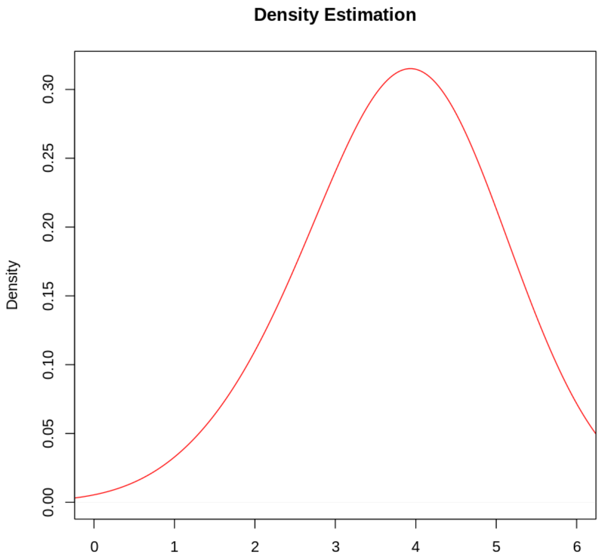
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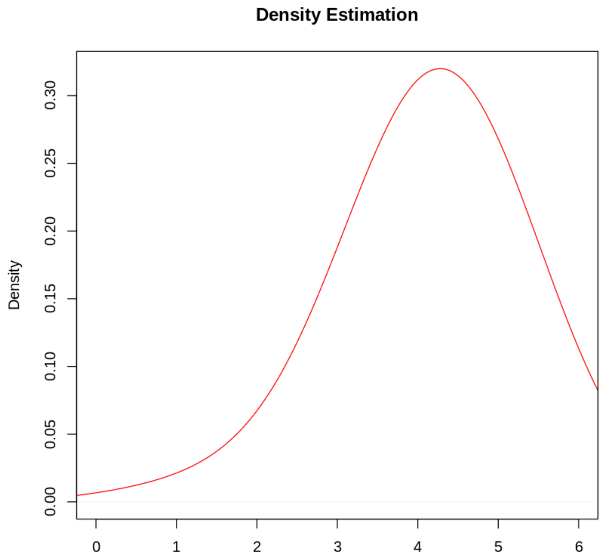
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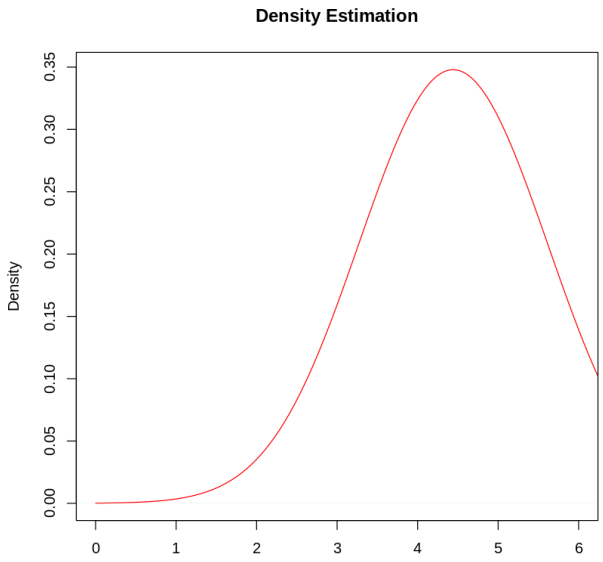
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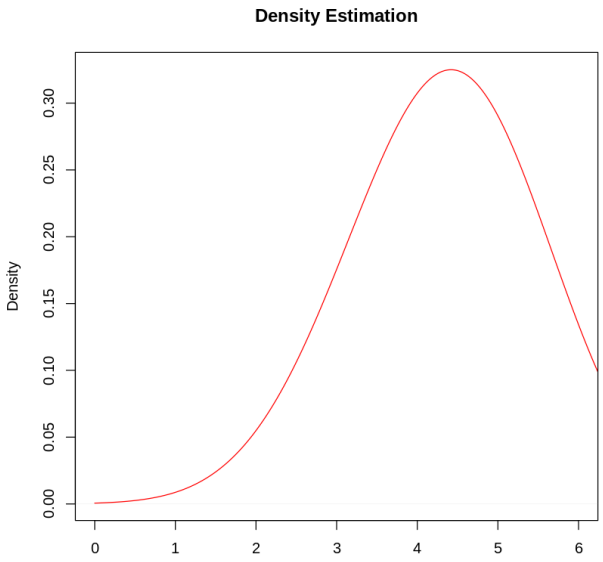
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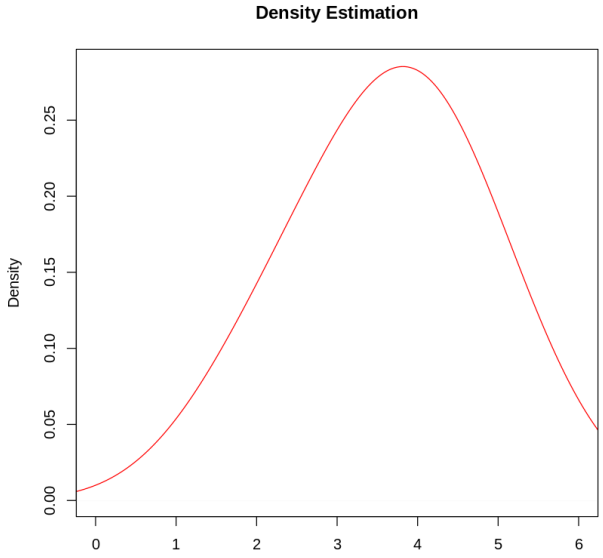
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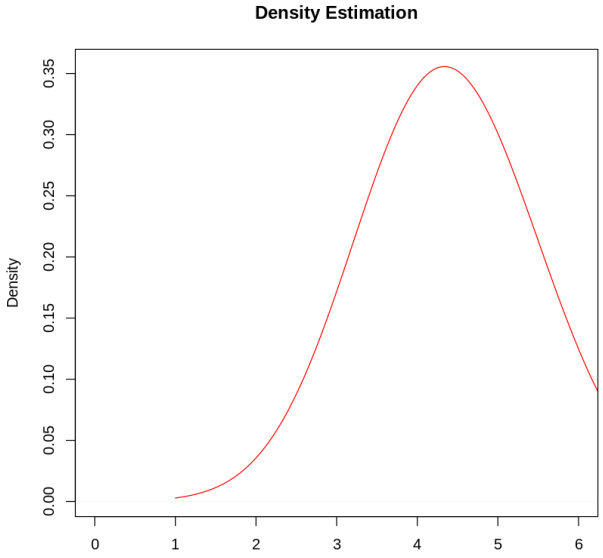
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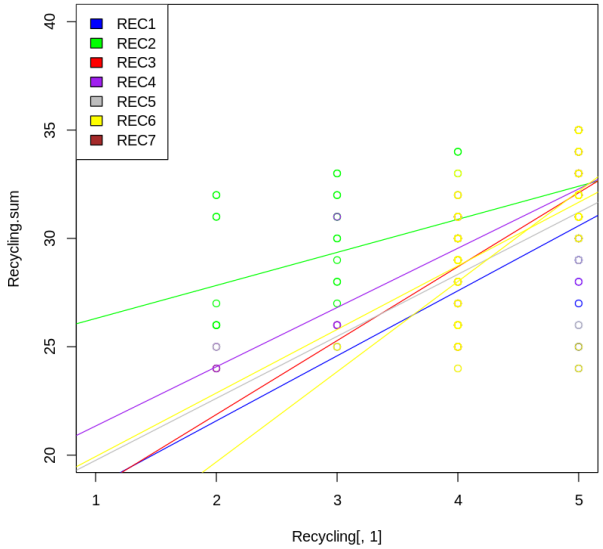
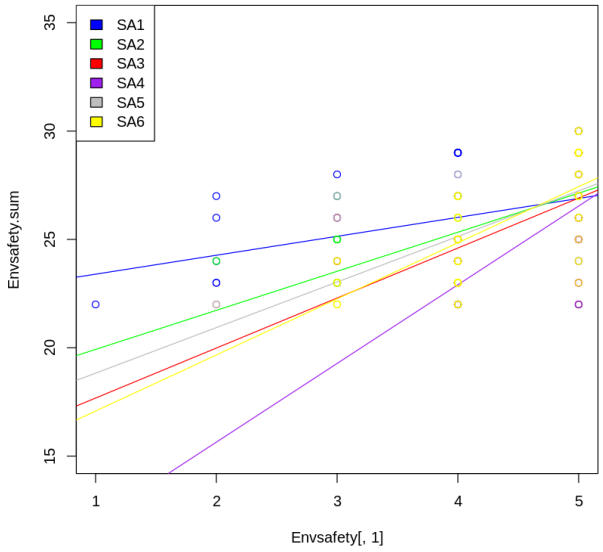
Now, we plot

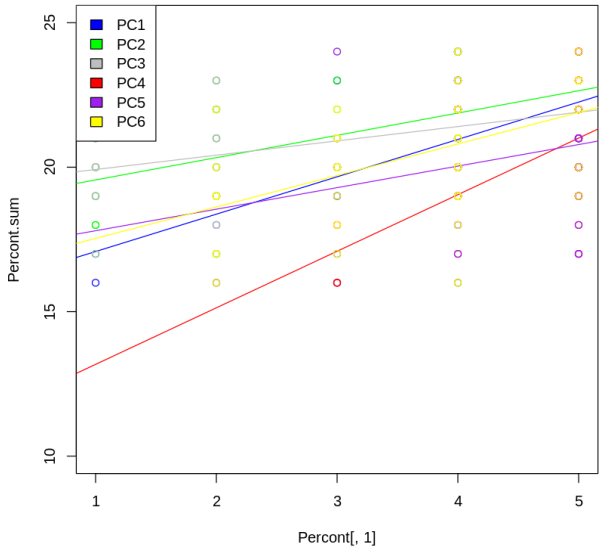
Item-wise best-fit line on Recycling:



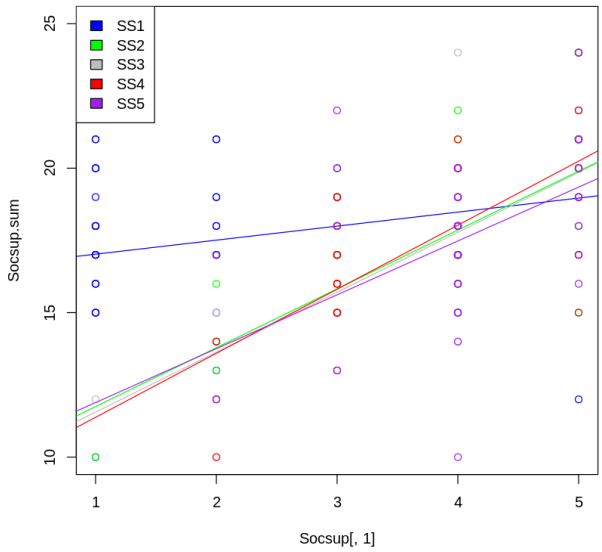
Item-wise best-fit line on Environmental Safety:



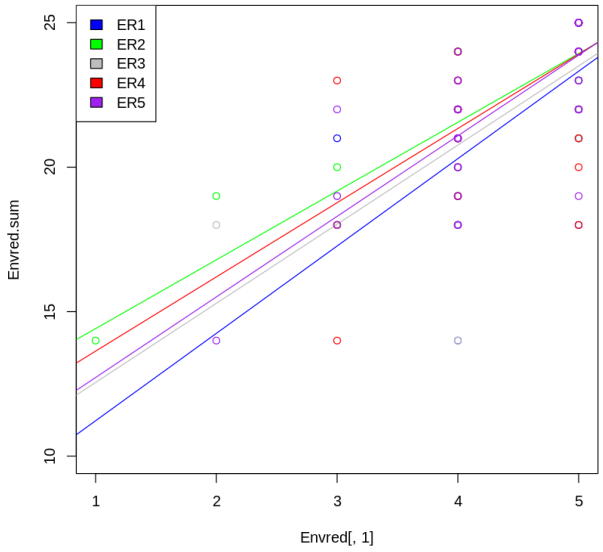
Item-wise best-fit line on Perceived Control:



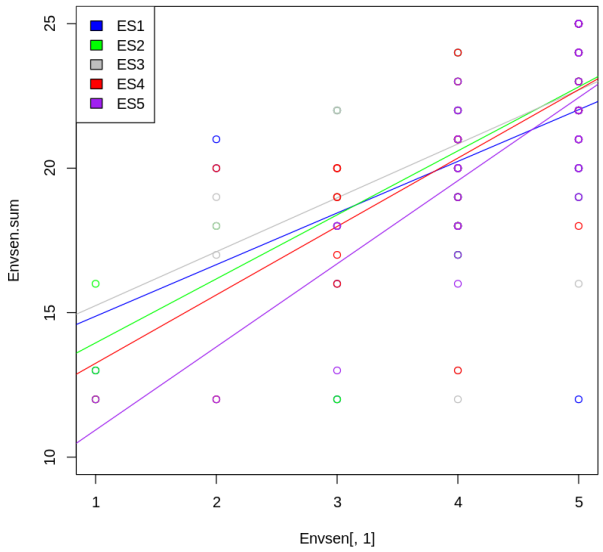
Item-wise best-fit line on Social Support:



Item-wise best-fit line on Environmental Reduction:



Item-wise best-fit line on Environmental Sensitivity:



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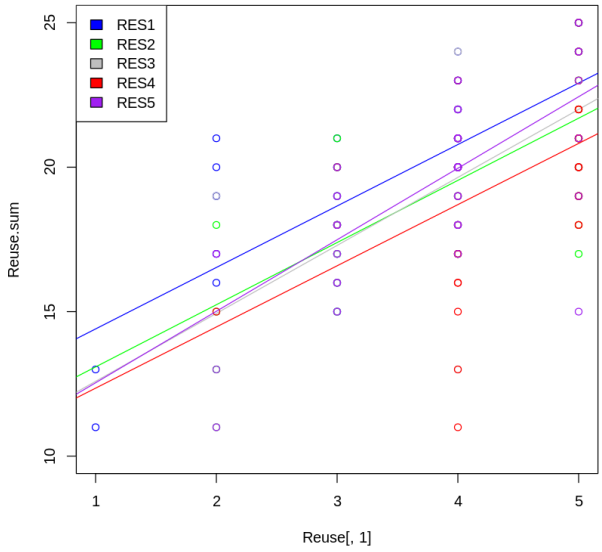
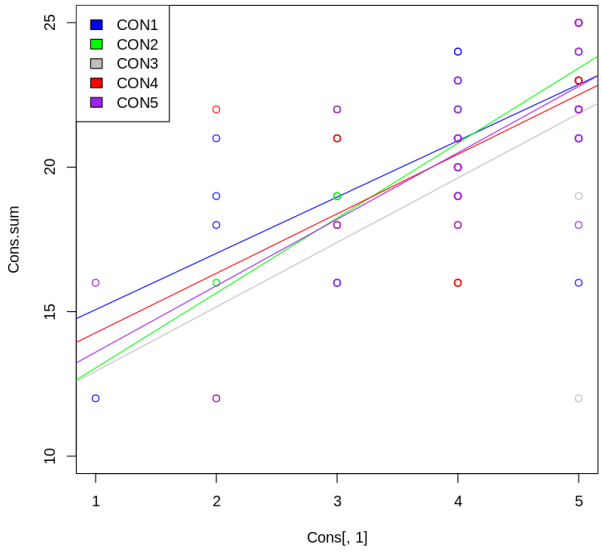


Item-wise best-fit line on Conservation:



6.2 Interpretation

Interpretation from the Barplot and Linechart of Recycling:

By seeing the barplot of Recycling, we can say that except the 2nd category, all the categories are almost strongly agreed. That people's intervention in upcycling old products into new and useful ones is not that much agreed, which is very clear from the linechart of Recycling. It is strongly agreed that Recycling is important, but maybe people are less interactive as less people strongly agree upcycling old products into new and useful items and that people want to learn more about product recycling.

Interpretation from the Barplot and Linechart of Environmental Safety:

By seeing the barplot and linechart of Environmental Safety, we can say that people strongly agreed that proper precaution should be taken when dealing with toxic chemicals. Also people don't strongly agree that much that safe disposal of wastes is costly.

Interpretation from the Barplot and Linechart of Perceived Control:

From the barplot and linechart of Perceived Control, we can say that people don't strongly feel that they are adept at managing waste around their surroundings and one single person cannot change the environment. Also it is strongly agreed that environmental conservation is everyone's responsibility.

Interpretation from the Barplot and Linechart of Social Support:

From the barplot and linechart of Social Support we can see that people strongly believe in social support for environment protection through the local clubs and NGOs that much.

Interpretation from the Barplot and Linechart of Environmental Reductionism:

Looking at the barplot of Environmental Reductionism, we conclude that people support using all the products till the very end, effective usage of things, closing taps,lights and fans and switching to eco friendly methods.

Interpretation from the Barplot and Linechart of Environmental Sensitivity:

As we can see in the Barplot and Linechart of Environmental Sensitivity, people like working in well-illuminated, airy places. People become strongly anxious seeing garbages thrown on the road. However crowdy places don't make them feel very uneasy in comparison.

Interpretation from the Barplot and Linechart of Reuse:

From the Barplot and Linechart of Reuse, we can say that people strongly believe that reuse preserves natural resources. However people are less interactive to find new ways to use waste products.

Interpretation from the Barplot and Linechart of Conservation:

After analysing the barplot and linechart of Conservation, we can say that people strongly believe that conservation can help create a greener planet for the future. Also people don't believe strongly that regular awarness programs can help conserve the natural environment.

Interpretation from the Correlation Plots of Recycling:

We can see that in the Recycling, learning more about product recycling and believing that recycling reduces the consumption of raw materials are somewhat highly positively correlated. Also beleiving that recycling is truly benificial for the environment and it reduces waste production are somewhat highly positively correlated. All the factors are positively correlated in general.

Interpretation from the Correlation Plots of Environmental Safety:

We can see that in the Environmental Safety, all the categories are negatively correlated with the belief that safe disposal of waste is costly. Also believing in taking proper precaution when dealing with toxic chemicals and putting policies to increase environmental safety are somewhat highly positively correlated.

Interpretation from the Correlation Plots of Perceived Control:

We can see that people's belief in individuals' responsibilities in conservation and reducing global warming are allover highly positively correlated. However, believing that one single person can change the environment and individuals' responsibilities to change the environment are negatively correlated.

Interpretation from the Correlation Plots of Social Support:

We can see that the belief that an individual alone can help in conserving the environment without social support is negatively correlated with active intervention in Social Support.

Interpretation from the Correlation Plots of Environmental Reductionism:

Here the categories are not that much highly correlated between each other, though all are positively correlated among each other.

Interpretation from the Correlation Plots of Environmental Sensitivity:

We can see that being anxious seeing disordered surroundings or in very loud noise are somewhat highly positively correlated with being irritated seeing garbage bags thrown on the road.

Interpretation from the Correlation Plots of Conservation:

As we can see, finding new ways to conserve and saving natural resources are allover highly positively correlated. All the categories are positively correlated among themselves.

Interpretation from the Correlation Plots of Reuse:

We can see that finding new ways to use old products and reuse waste products are allover highly positively correlated. All the components in Reuse are positively correlated.

Interpretation from the Item Total Correlation of Recycling:

We can see that learning more about product recycling, reducing waste production and consumption of new raw materials by recycling are very highly related with recycling frame within the mindset of the participants.

Interpretation from the Item Total Correlation of Environmental Safety:

We can see that putting policies in place to increase environmental safety is very highly related with environmental safety frame within the mindset of the participants.

Interpretation from the Item Total Correlation of Perceived Control:

We can see that no component is that much related with the Perceived Control frame within the mindset of the participants as all the correlation coefficients are not that high.

Interpretation from the Item Total Correlation of Social Support:

We can see that participating in mass clean-up to reduce pollution, Creating nature clubs to help generate awareness about environmental issues and volunteering services for habitat management work are very highly related with the Social Support frame within the mindset of the participants .

Interpretation from the Item Total Correlation of Environmental Reductionism:

We can see that learning how to use effectively plenty of natural resources, closing the lights and fans in a room before leaving it and switching to eco-friendly methods more frequently are very highly related with the Environmental Reductionism frame within the mindset of the participants.

Interpretation from the Item Total Correlation of Environmental Sensitivity:

We can see that being anxious seeing disordered surroundings,garbage thrown on the road or hearing very loud noise or music are very highly related with the Environmental Sensitivity frame within the mindset of the participants.

Interpretation from the Item Total Correlation of Reuse:

We can see that finding new ways to reuse old or waste products and repairing items before throwing them away are very highly related with the reuse frame within the mindset of the participants.

Interpretation from the Item Total Correlation of Conservation:

We can see that finding ways to conserve and saving natural resources are very highly related with the conservation frame within the mindset of the participants.

Interpretation from the Percentage and Frequency Distributions of Recycling:

We can see that people mostly strongly agree or agree in Recycling. There is no category which is strongly disagreed by anyone.

Interpretation from the Percentage and Frequency Distributions of Environmental Safety:

Here also we see that people mostly strongly agree or agree in Environmental Safety.

Interpretation from the Percentage and Frequency Distributions of Perceived Control:

Here also people mostly strongly agree or agree in Perceived Control, as the 2nd and 3rd categories are in reverse order.

Interpretation from the Percentage and Frequency Distributions of Social Support:

Here also people mostly strongly agree or agree in Social Support , as the 1st category is in reverse order.

Interpretation from the Percentage and Frequency Distributions of Environmental Reductionism:

Here also people strongly agree or agree in Environmental Reductionism.

Interpretation from the Percentage and Frequency Distributions of Environmental Sensitivity:

Here also people strongly agree or agree in Environmental Sensitivity.

Interpretation from the Percentage and Frequency Distributions of Reuse:

Here also people strongly agree or agree in Reuse.

Interpretation from the Percentage and Frequency Distributions of Conservation:

Here also people strongly agree or agree in Conservation.

Interpretation from the Very simple Structure:

Looking at the Very Simple Structure, we can conclude that VSS complexity 1 achieves a maximimum of 0.73 with 1 factors VSS complexity 2 achieves a maximimum of 0.79 with 2 factors.

Interpretation from the Violin Plot of Recycling:

We can see that center of Recycling located mostly in Strongly Agree or Agree, except people upcycling old products into new and useful items where median is 3.

Interpretation from the Violin Plot of Environmental Safety:

We can see that center of Environmental Safety located in Strongly Agree or Agree in every category.

Interpretation from the Violin Plot of Perceived Control:

We can see that center of Perceived Control located mostly in Strongly Agree or Agree, except for people's belief that one single person can change the environment and their actions are not responsible for climate change, where the median is 2.

Interpretation from the Violin Plot of Social Support:

We can see that center of Social Support located mostly in Agree, except for people's belief that an individual alone can help in conserving the environment without social support, where the median is 2.

Interpretation from the Violin Plot of Environmental Reduction:

We can see that center of Environmental Reduction located in Strongly Agree or Agree in every category.

Interpretation from the Violin Plot of Environmental Sensitivity:

We can see that center of Environmental Sensitivity located Agree in every category.

Interpretation from the Violin Plot of Reuse:

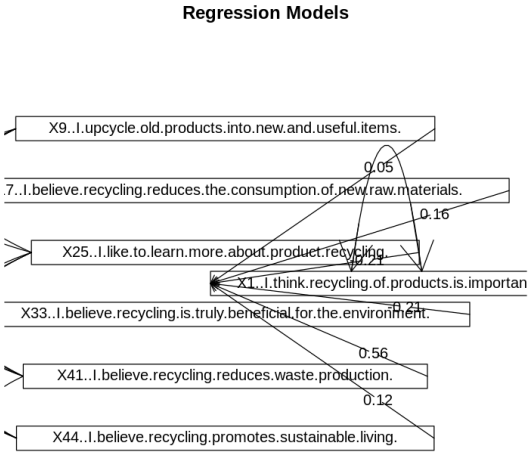
We can see that center of Reuse located in Agree in every category.

Interpretation from the Violin Plot of Conservation:

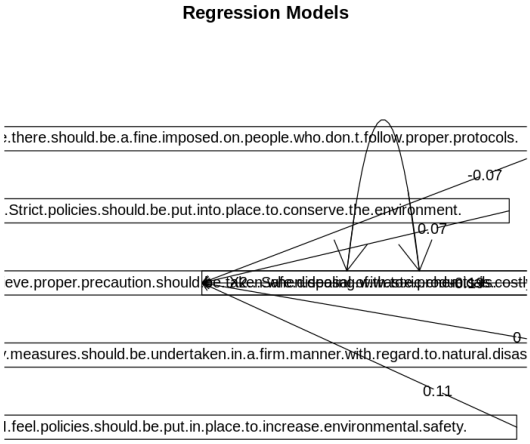
We can see that center of Conservation located in Agree or Strongly Agree in every category.

Fitting Multiple Regression Model between correlations:

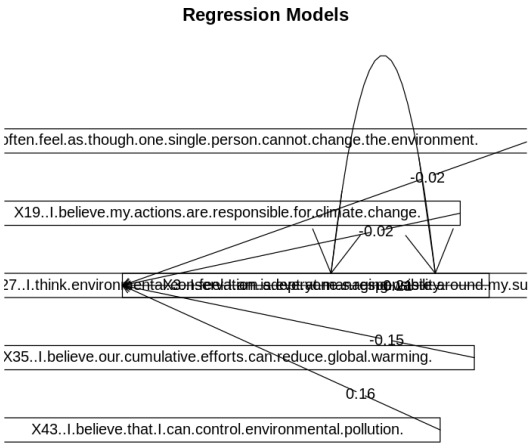
- Fitting Regression Model between "Recycling of Product is Important" and other categories of Recycling, we get



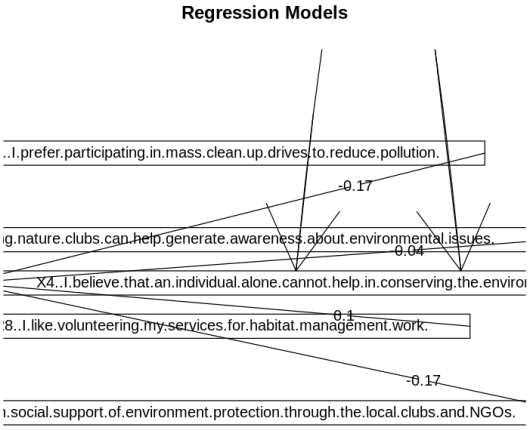
- Fitting Regression Model between "Safe Disposal of Waste is Costly" and other categories of Environmental Safety, we get



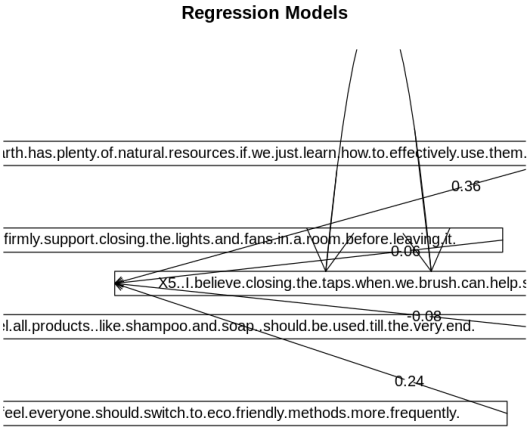
- Fitting Regression Model between "People adept at managing waste at surroundings" and other categories of Perceived Control, we get



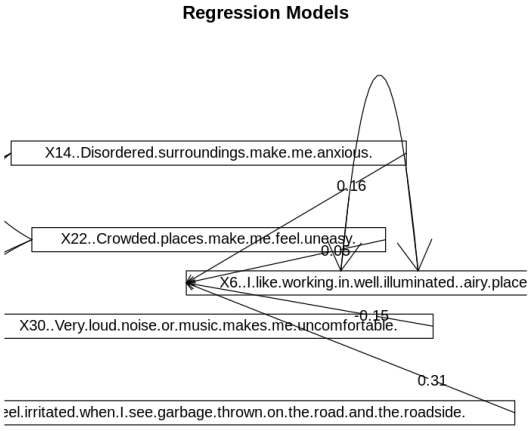
- Fitting Regression Model between "An individual alone can help in conserving the environment without social support" and other categories of Social Support, we get



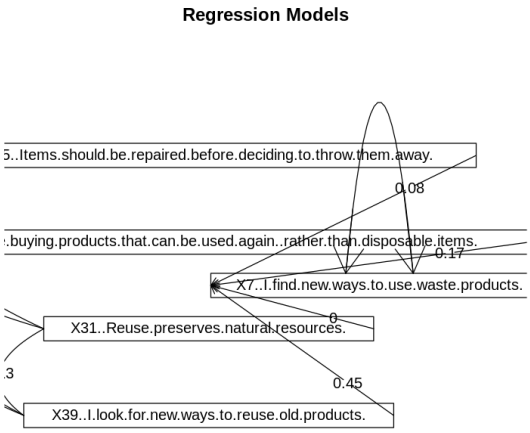
- Fitting Regression Model between "believing in closing the taps when we brush can help save water" and other categories of Environmental Reductionism, we get



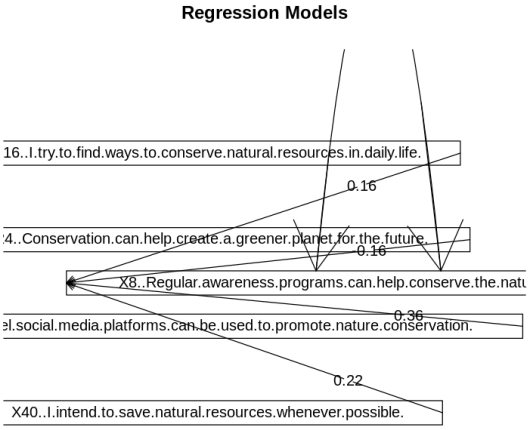
- Fitting Regression Model between "Like working in well-illuminated, airy places" and other categories of Environmental Sensitivity, we get



- Fitting Regression Model between "Finding new ways to use waste products" and other categories of Reuse, we get



- Fitting Regression Model between "Regular awareness programs can help conserve the natural environment" and other categories of Conservation, we get



Interpretation from the Density Estimation Plot:

Almost all the variables are positively skewed. This is happening because most of the people are conscious about the environment and agree or strongly agree to almost all the categories.

7 Discussion

7.1 Summary

We have collected data from undergraduate and graduate students, so all the people are very much concerned about the environment because of having a good educational background. So there is a lack of variety in the dataset, so we cannot interpret Pro-Environmental Attitude of the whole Society. Also people are not that much interactive in finding new ways to protect environment than how much they support protecting the environment.

7.2 Links to Earlier Situation

Personality informs people's beliefs, values, and attitudes, and scientists have found that personality factors can influence our likelihood to engage in environmentally sensitive practices. The Big Five Personality traits are Agreeableness, Conscientiousness, Openness to new experiences, Extroversion, and Neuroticism (or its inverse, Emotional Stability). Two scientists from Victoria University of Wellington and the University of Auckland examined how the Big Five personality traits are associated with individuals' environmental values (Study 1). Because people with environmental values do not always act in environmental-friendly ways, the scientists expanded their study to also explore whether the Big Five personality traits are associated with individual behavior (Study 2). Until this study, previous research had only examined the Big Five personality traits and values and behaviors of individuals within a country, but not compared countries. In Study 3, Milfont and Sibley undertook the first analysis of nationwide trends for the Big Five Personality traits and what that may mean for societal-level environmental engagement. Consistent with previous studies, they found that environmental value was significantly predicted by differences in the Big Five personality traits, specifically high levels of Agreeableness, Conscientiousness, and Openness and low levels of Neuroticism.

Greater electricity conservation was associated with Agreeableness and Conscientiousness and low levels of Neuroticism, consistent with the results from the first survey. Milfont and Sibley explored how Big Five Personality traits and environmental engagement compare cross-culturally in the third study. Using large cross-cultural databases on country-level personality traits and country-level environmental engagement, Milfont and Sibley found evidence for how personality is associated with environmental concerns. With regards to the Big Five personality traits, Milfont and Selby found that environmental values and engagement are most related to Openness and Extroversion, and to a lesser extent, Agreeableness and Conscientiousness. These findings are consistent with the idea that environmental engagement is related to country-level personality traits much like it is associated with individual-level personality traits. Using baseline information on individual- and country-level personality and behavior, scientists and policymakers can have a better idea of how to tailor environmental proposals and suggestions to different kinds of people.

7.3 Suggestion

Environmental Psychology is the discipline that concentrates on the exchange between people and the assembled and indigenous habitat. Human conduct assumes a critical part in the ascent and seriousness of natural issues. Pro-environmental conduct (whether goal-directed or not) varies from the more extensive term natural way of behaving. Most research in natural brain science centers around examining pro-environmental conduct, additionally alluded to as harmless to the ecosystem conduct, environmental way of behaving, or on the other hand preservation conduct. Pro-environmental conduct has been characterized as 'conduct that intentionally looks to limit the adverse consequence of one's activities on the regular and constructed world'. Ecological way of behaving is frequently conceptualized as multi-faceted. As per unidimensional proportion of goal-directed pro-environmental conduct, all ways of behaving with respect to a particular objective (for example ecological protection) can be requested on one single aspect from simple to troublesome concerning arriving at that objective. Values are alluring trans-situational objectives that change in significance and act as core values in the existence of an individual or other social substances. Accepted practices are 'decides and principles that are perceived by individuals from a gathering, and that aide or potentially compel human way of behaving without the power of regulations'. Research shows that the degree to which individuals honestly think taking part in conduct will inspire positive or pessimistic feelings, so-called, expected feelings, can be an significant indicator of whether they will act accordingly.The present thesis work named 'Writing Review on the "Corresponds of The Supportive of Environmental Behavior" has been completed with the accompanying goal: to investigate the associates of the favorable to ecological way of behaving through writing review. In the current review, the writing search in various logical information bases was utilized to distinguish concentrates on that inspect the connection for supportive of natural way of behaving. In the current review, various writings were looked, trailed by gathering of the articles of interest and a period scale separate web-examination was finished. The articles were gathered into six classifications, and these six gatherings address connects of proenvironmental conduct, where a portion of the articles addresses more than one gatherings. The gatherings were natural mindfulness, convictions, character, mental variations, character and values.Also spreading mindfulness in ecological government assistance is unequivocally proposed from the informed society.

7.4 Future Study

The future of the planet is in the hands of the youth: they are the decision makers of the future. It is therefore necessary to understand what drives children and young people to behave in a pro-environmental manner. Policy makers, curriculum developers and designers of environmental education programs have expressed a keen interest in knowing how environmental attitudes develop among young people and what causes the differences in these attitudes. Young people's environmental attitudes have also become a growing topic for social scientists. Most research aimed at explaining differences in (adolescent) environmental attitudes focuses on the individual as a measurement level. However, individuals operate within a social structure; they are part of a context. People are born into and grow up in a cultural environment that influences and shapes their attitudes and behaviors (Giddens 1997). Therefore, rather than viewing the individual as just themselves, a better level of measurement would be the individual in their context. Attitudes are expressed in actions and in the interaction between people. The context and the social groups we belong to limit

what we do, feel or think. Kellert (1983, 1986, 1991, 1993) therefore focused on examining the willingness of people of different nationalities and social groups to make personal sacrifices in favor of the environment and wildlife. It seems obvious that the most important factor influencing nature is not official environmental policy, but the public's willingness to care for the environment and bear the costs of minimizing the negative impacts of their activities (Ramsey Rickson, 1976).

8 Responses

The data set which we have collected by our survey is given in data.txt.Except the 2nd and 3rd categories of Perceived Control and 1st category of Social Support (Here Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree are replaced by 1,2,3,4,5 respectively.), in all the categories, Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree are replaced by 5,4,3,2,1 respectively.

9 Appendix

9.1 R Codes

```
install.packages("psych")
install.packages("GPArotation")
install.packages("ggplot2")
install.packages("reshape2")
library("ggplot2")
library("psych")
library("GPArotation")
library("reshape2")
data=read.csv("/content/PEAS_Project_ISI - Form Responses 1 prepared.csv")
Proenv=data[2:49,6:50]
Proenv1=lapply(Proenv,as.numeric)
r <- lowerCor(Proenv)
r
corPlot(r)
Proenv2=data.frame(apply(Proenv,2,function(x) as.numeric(as.character(x))))
describe(Proenv2)
Recycling=data.frame(Proenv1[1],Proenv1[10],Proenv1[18],Proenv1
[26],Proenv1[34],Proenv1[42],Proenv1[45])
Recycling.sum=apply(Recycling,1,sum)
recor=cor(Recycling.sum,Recycling)
recor
order(recor)
Recycling1=data.frame(Proenv[,1],Proenv[,10],Proenv[,18],Proenv
[,26],Proenv[,34],Proenv[,42],Proenv[,45])
r1=lowerCor(Recycling1)
corPlot(r1,main="Correlation Plot for Recycling")
gf=data.frame(colMeans(Recycling[,1:7]))
gf$row.names=rownames(gf)
long.gf=melt(gf,id=c("row.names"))
plotted=ggplot(long.gf,aes(x=row.names,y=value))+geom_bar(stat='identity'
,fill="lightblue")
plotted+ggtitle("Barplot of Means of Recycling")+xlab("Recycling")+ylab("Means")
plotteda=ggplot(long.gf,aes(x=row.names,y=value,group=1))+geom_line(color="darkgreen")
+geom_point()
plotteda+ggtitle("Linechart of Means of Recycling")+xlab("Recycling")+ylab("Means")
Envsafety=data.frame(Proenv1[3],Proenv1[11],Proenv1[19],Proenv1[27],Proenv1[35]
```

```
,Proenv1[43])
Envsafety.sum=apply(Envsafety,1,sum)
recor1=cor(Envsafety.sum,Envsafety)
recor1
order(recor1)
Envsafety1=data.frame(Proenv[,3],Proenv[,11],Proenv[,19],Proenv[,27],Proenv[,35]
,Proenv[,43])
r2=lowerCor(Envsafety1)
corPlot(r2,main="Correlation Plot for Environmental Safety")
gf=data.frame(colMeans(Envsafety[,1:6]))
gf$row.names=rownames(gf)
long.gf=melt(gf,id=c("row.names"))
plotted=ggplot(long.gf,aes(x=row.names,y=value))+geom_bar(stat='identity',fill="yellow")
plotted+ggtitle("Barplot of Means of Environmental Safety")+xlab("Environmental Safety")
+ylab("Means")
plotteda=ggplot(long.gf,aes(x=row.names,y=value,group=1))+geom_line(color="blue")
+geom_point()
plotteda+ggtitle("Linechart of Means of Environmental Safety")+xlab("Environmental Safety")
+ylab("Means")
Percont=data.frame(Proenv1[4],Proenv1[12],Proenv1[20],Proenv1[28],Proenv1[36],Proenv1[44])
Percont.sum=apply(Percont,1,sum)
recor2=cor(Percont.sum,Percont)
recor2
order(recor2)
Percont1=data.frame(Proenv[,4],Proenv[,12],Proenv[,20],Proenv[,28],Proenv[,36],Proenv[,44])
r3=lowerCor(Percont1)
corPlot(r3,main="Correlation Plot for Perceived Control")
gf=data.frame(colMeans(Percont[,1:6]))
gf$row.names=rownames(gf)
long.gf=melt(gf,id=c("row.names"))
plotted=ggplot(long.gf,aes(x=row.names,y=value))+geom_bar(stat='identity'
,fill="darkgreen")
plotted+ggtitle("Barplot of Means of Perceived Control")+xlab("Perceived Control")
+ylab("Means")
plotteda=ggplot(long.gf,aes(x=row.names,y=value,group=1))+geom_line(color="red")
+geom_point()
plotteda+ggtitle("Linechart of Means of Perceived Control")+xlab("Perceived Control")
+ylab("Means")
Socsup=data.frame(Proenv1[5],Proenv1[13],Proenv1[21],Proenv1[29],Proenv1[37])
Socsup.sum=apply(Socsup,1,sum)
recor3=cor(Socsup.sum,Socsup)
recor3
order(recor3)
Socsup1=data.frame(Proenv[,5],Proenv[,13],Proenv[,21],Proenv[,29],Proenv[,37])
r4=lowerCor(Socsup1)
corPlot(r4,main="Correlation Plot for Social Support")
gf=data.frame(colMeans(Socsup[,1:5]))
gf$row.names=rownames(gf)
long.gf=melt(gf,id=c("row.names"))
plotted=ggplot(long.gf,aes(x=row.names,y=value))+geom_bar(stat='identity',fill="pink")
plotted+ggtitle("Barplot of Means of Social Support")+xlab("Social Support")+ylab("Means")
plotteda=ggplot(long.gf,aes(x=row.names,y=value,group=1))+geom_line(color="green")
+geom_point()
plotteda+ggtitle("Linechart of Means of Social Support")+xlab("Social Support")
```

```
+ylab("Means")
Envred=data.frame(Proenv1[6],Proenv1[14],Proenv1[22],Proenv1[30],Proenv1[38])
Envred.sum=apply(Envred,1,sum)
recor4=cor(Envred.sum,Envred)
recor4
order(recor4)
Envred1=data.frame(Proenv[,6],Proenv[,14],Proenv[,22],Proenv[,30],Proenv[,38])
r5=lowerCor(Envred1)
corPlot(r5,main="Correlation Plot for Environmental Reductionism")
gf=data.frame(colMeans(Envred[,1:5]))
gf$row.names=rownames(gf)
long.gf=melt(gf,id=c("row.names"))
plotted=ggplot(long.gf,aes(x=row.names,y=value))+geom_bar(stat='identity',fill="blue")
plotted+ggtitle("Barplot of Means of Environmental Reductionism")
+xlab("Environmental Reductionism")+ylab("Means")
plotteda=ggplot(long.gf,aes(x=row.names,y=value,group=1))+geom_line(color="orange")
+geom_point()
plotteda+ggtitle("Linechart of Means of Environmental Reductionism")
+xlab("Environmental Reductionism")+ylab("Means")
Envsen=data.frame(Proenv1[7],Proenv1[15],Proenv1[23],Proenv1[31],Proenv1[39])
Envsen.sum=apply(Envsen,1,sum)
recor5=cor(Envred.sum,Envsen)
recor5
order(recor5)
Envsen1=data.frame(Proenv[,7],Proenv[,15],Proenv[,23],Proenv[,31],Proenv[,39])
r6=lowerCor(Envsen1)
corPlot(r6,main="Correlation Plot for Environmental Sensitivity")
gf=data.frame(colMeans(Envsen[,1:5]))
gf$row.names=rownames(gf)
long.gf=melt(gf,id=c("row.names"))
plotted=ggplot(long.gf,aes(x=row.names,y=value))+geom_bar(stat='identity',fill="green")
plotted+ggtitle("Barplot of Means of Environmental Sensitivity")
+xlab("Environmental Sensitivity")+ylab("Means")
plotteda=ggplot(long.gf,aes(x=row.names,y=value,group=1))+geom_line(color="red")
+geom_point()
plotteda+ggtitle("Linechart of Means of Environmental Sensitivity")
+xlab("Environmental Sensitivity")+ylab("Means")
Cons=data.frame(Proenv1[9],Proenv1[17],Proenv1[25],Proenv1[33],Proenv1[41])
Cons.sum=apply(Cons,1,sum)
recor7=cor(Cons.sum,Cons)
recor7
order(recor7)
Cons1=data.frame(Proenv[,9],Proenv[,17],Proenv[,25],Proenv[,33],Proenv[,41])
r8=lowerCor(Cons1)
corPlot(r8,main="Correlation Plot for Conservation")
gf=data.frame(colMeans(Cons[,1:5]))
gf$row.names=rownames(gf)
long.gf=melt(gf,id=c("row.names"))
plotted=ggplot(long.gf,aes(x=row.names,y=value))+geom_bar(stat='identity',fill="orange")
plotted+ggtitle("Barplot of Means of Conservation")+xlab("Conservation")+ylab("Means")
plotteda=ggplot(long.gf,aes(x=row.names,y=value,group=1))+geom_line(color="blue")
+geom_point()
plotteda+ggtitle("Linechart of Means of Conservation")+xlab("Conservation")
+ylab("Means")
```

```
Reuse=data.frame(Proenv1[8],Proenv1[16],Proenv1[24],Proenv1[32],Proenv1[40])
Reuse.sum=apply(Reuse,1,sum)
recor6=cor(Reuse.sum,Reuse)
recor6
order(recor6)
Reuse1=data.frame(Proenv[,8],Proenv[,16],Proenv[,24],Proenv[,32],Proenv[,40])
r7=lowerCor(Reuse1)
corPlot(r7,main="Correlation Plot for Reuse")
gf=data.frame(colMeans(Reuse[,1:5]))
gf$row.names=rownames(gf)
long.gf=melt(gf,id=c("row.names"))
plotted=ggplot(long.gf,aes(x=row.names,y=value))+geom_bar(stat='identity',fill="red")
plotted+ggtitle("Barplot of Means of Reuse")+xlab("Reuse")+ylab("Means")
plotteda=ggplot(long.gf,aes(x=row.names,y=value,group=1))+geom_line(color="green")
+geom_point()
plotteda+ggtitle("Linechart of Means of Reuse")+xlab("Reuse")+ylab("Means")
df=Proenv2[,-2]
fa.parallel(df)
vss(df)
magicfun<-function(x) x*48/100
lvls=unique(unlist(Recycling1))
freq=sapply(Recycling1,function(x)table(factor(x,levels=lvls,ordered=TRUE)))
colnames(freq)<-c("REC1","REC2","REC3","REC4","REC5","REC6","REC7")
freq
freq=apply(freq,2,magicfun)
freq
lvls=unique(unlist(Envsafety1))
freq=sapply(Envsafety1,function(x)table(factor(x,levels=lvls,ordered=TRUE)))
colnames(freq)<-c("SA1","SA2","SA3","SA4","SA5","SA6")
freq
freq=apply(freq,2,magicfun)
freq
lvls=unique(unlist(Percont1))
freq=sapply(Percont1,function(x)table(factor(x,levels=lvls,ordered=TRUE)))
colnames(freq)<-c("PC1","PC2","PC3","PC4","PC5","PC6")
freq
freq=apply(freq,2,magicfun)
freq
lvls=unique(unlist(Socsup1))
freq=sapply(Socsup1,function(x)table(factor(x,levels=lvls,ordered=TRUE)))
colnames(freq)<-c("SS1","SS2","SS3","SS4","SS5")
freq
freq=apply(freq,2,magicfun)
freq
lvls=unique(unlist(Envred1))
freq=sapply(Envred1,function(x)table(factor(x,levels=lvls,ordered=TRUE)))
colnames(freq)<-c("ER1","ER2","ER3","ER4","ER5")
freq
freq=apply(freq,2,magicfun)
freq
lvls=unique(unlist(Envsen1))
freq=sapply(Envsen1,function(x)table(factor(x,levels=lvls,ordered=TRUE)))
colnames(freq)<-c("ES1","ES2","ES3","ES4","ES5")
freq
```

```
freq=apply(freq,2,magicfun)
freq
lvls=unique(unlist(Reuse1))
freq=sapply(Reuse1,function(x)table(factor(x,levels=lvls,ordered=TRUE)))
colnames(freq)<-c("RES1","RES2","RES3","RES4","RES5")
freq
freq=apply(freq,2,magicfun)
freq
lvls=unique(unlist(Cons1))
freq=sapply(Cons1,function(x)table(factor(x,levels=lvls,ordered=TRUE)))
colnames(freq)<-c("CON1","CON2","CON3","CON4","CON5")
freq
freq=apply(freq,2,magicfun)
freq
iclust(df)
install.packages("vioplot")
library("vioplot")
vioplot(Recycling,col=2,rectcol="red",linecol="white",colMed="green",border="black",
pchMed=16,plotCentre="points")
vioplot(Envsafety,col=2,rectcol="red",linecol="white",colMed="green",border="black",
pchMed=16,plotCentre="points")
vioplot(Percont,col=2,rectcol="red",linecol="white",colMed="green",border="black",
pchMed=16,plotCentre="points")
rf1=cor(Recycling)
setCor(y = 1, x = 2:7, data = rf1)
rf2=cor(Envsafety)
setCor(y = 1, x = 2:6, data = rf2)
rf2=cor(Percont)
setCor(y = 1, x = 2:6, data = rf2)
rf2=cor(Socsup)
setCor(y = 1, x = 2:5, data = rf2)
rf2=cor(Envred)
setCor(y = 1, x = 2:5, data = rf2)
rf2=cor(Envsen)
setCor(y = 1, x = 2:5, data = rf2)
rf2=cor(Reuse)
setCor(y = 1, x = 2:5, data = rf2)
for(i in 1:44)
plot(density(df[,i],bw=1),col="red",main="Density Estimation",xlab="",xlim=c(0,6))
plot(Recycling.sum~Recycling[,1],col="blue",xlim=c(1,5),ylim=c(20,40))
abline(lm(Recycling.sum~Recycling[,1]),col="blue")
points(Recycling.sum~Recycling[,2],col="green")
abline(lm(Recycling.sum~Recycling[,2]),col="green")
points(Recycling.sum~Recycling[,3],col="red")
abline(lm(Recycling.sum~Recycling[,3]),col="red")
points(Recycling.sum~Recycling[,4],col="purple")
abline(lm(Recycling.sum~Recycling[,4]),col="purple")
points(Recycling.sum~Recycling[,5],col="grey")
abline(lm(Recycling.sum~Recycling[,5]),col="grey")
points(Recycling.sum~Recycling[,6],col="yellow")
abline(lm(Recycling.sum~Recycling[,6]),col="yellow")
points(Recycling.sum~Recycling[,7],col="yellow")
abline(lm(Recycling.sum~Recycling[,7]),col="yellow")
legend(x="topleft",legend=c("REC1","REC2","REC3","REC4","REC5","REC6","REC7"),
```

```
fill=c("blue","green","red","purple","grey","yellow","brown"))
plot(Envsafety.sum~Envsafety[,1],col="blue",ylim=c(15,35))
abline(lm(Envsafety.sum~Envsafety[,1]),col="blue")
points(Envsafety.sum~Envsafety[,2],col="green")
abline(lm(Envsafety.sum~Envsafety[,2]),col="green")
points(Envsafety.sum~Envsafety[,3],col="red")
abline(lm(Envsafety.sum~Envsafety[,3]),col="red")
points(Envsafety.sum~Envsafety[,4],col="purple")
abline(lm(Envsafety.sum~Envsafety[,4]),col="purple")
points(Envsafety.sum~Envsafety[,5],col="grey")
abline(lm(Envsafety.sum~Envsafety[,5]),col="grey")
points(Envsafety.sum~Envsafety[,6],col="yellow")
abline(lm(Envsafety.sum~Envsafety[,6]),col="yellow")
legend(x="topleft",legend=c("SA1","SA2","SA3","SA4","SA5","SA6")
,fill=c("blue","green","red","purple","grey","yellow"))
plot(Percont.sum~Percont[,1],col="blue",xlim=c(1,5),ylim=c(10,25))
abline(lm(Percont.sum~Percont[,1]),col="blue")
points(Percont.sum~Percont[,2],col="green")
abline(lm(Percont.sum~Percont[,2]),col="green")
points(Percont.sum~Percont[,3],col="grey")
abline(lm(Percont.sum~Percont[,3]),col="grey")
points(Percont.sum~Percont[,4],col="red")
abline(lm(Percont.sum~Percont[,4]),col="red")
points(Percont.sum~Percont[,5],col="purple")
abline(lm(Percont.sum~Percont[,5]),col="purple")
points(Percont.sum~Percont[,6],col="yellow")
abline(lm(Percont.sum~Percont[,6]),col="yellow")
legend(x="topleft",legend=c("PC1","PC2","PC3","PC4","PC5","PC6")
,fill=c("blue","green","grey","red","purple","yellow"))
plot(Socsup.sum~Socsup[,1],col="blue",xlim=c(1,5),ylim=c(10,25))
abline(lm(Socsup.sum~Socsup[,1]),col="blue")
points(Socsup.sum~Socsup[,2],col="green")
abline(lm(Socsup.sum~Socsup[,2]),col="green")
points(Socsup.sum~Socsup[,3],col="grey")
abline(lm(Socsup.sum~Socsup[,3]),col="grey")
points(Socsup.sum~Socsup[,4],col="red")
abline(lm(Socsup.sum~Socsup[,4]),col="red")
points(Socsup.sum~Socsup[,5],col="purple")
abline(lm(Socsup.sum~Socsup[,5]),col="purple")
legend(x="topleft",legend=c("SS1","SS2","SS3","SS4","SS5")
,fill=c("blue","green","grey","red","purple"))
plot(Envred.sum~Envred[,1],col="blue",xlim=c(1,5),ylim=c(10,25))
abline(lm(Envred.sum~Envred[,1]),col="blue")
points(Envred.sum~Envred[,2],col="green")
abline(lm(Envred.sum~Envred[,2]),col="green")
points(Envred.sum~Envred[,3],col="grey")
abline(lm(Envred.sum~Envred[,3]),col="grey")
points(Envred.sum~Envred[,4],col="red")
abline(lm(Envred.sum~Envred[,4]),col="red")
points(Envred.sum~Envred[,5],col="purple")
abline(lm(Envred.sum~Envred[,5]),col="purple")
legend(x="topleft",legend=c("ER1","ER2","ER3","ER4","ER5"),
fill=c("blue","green","grey","red","purple"))
plot(Envsen.sum~Envsen[,1],col="blue",xlim=c(1,5),ylim=c(10,25))
```

```
abline(lm(Envsen.sum~Envsen[,1]),col="blue")
points(Envsen.sum~Envsen[,2],col="green")
abline(lm(Envsen.sum~Envsen[,2]),col="green")
points(Envsen.sum~Envsen[,3],col="grey")
abline(lm(Envsen.sum~Envsen[,3]),col="grey")
points(Envsen.sum~Envsen[,4],col="red")
abline(lm(Envsen.sum~Envsen[,4]),col="red")
points(Envsen.sum~Envsen[,5],col="purple")
abline(lm(Envsen.sum~Envsen[,5]),col="purple")
legend(x="topleft",legend=c("ES1","ES2","ES3","ES4","ES5"),
fill=c("blue","green","grey","red","purple"))
plot(Reuse.sum~Reuse[,1],col="blue",xlim=c(1,5),ylim=c(10,25))
abline(lm(Reuse.sum~Reuse[,1]),col="blue")
points(Reuse.sum~Reuse[,2],col="green")
abline(lm(Reuse.sum~Reuse[,2]),col="green")
points(Reuse.sum~Reuse[,3],col="grey")
abline(lm(Reuse.sum~Reuse[,3]),col="grey")
points(Reuse.sum~Reuse[,4],col="red")
abline(lm(Reuse.sum~Reuse[,4]),col="red")
points(Reuse.sum~Reuse[,5],col="purple")
abline(lm(Reuse.sum~Reuse[,5]),col="purple")
legend(x="topleft",legend=c("RES1","RES2","RES3","RES4","RES5"),
fill=c("blue","green","grey","red","purple"))
plot(Cons.sum~Cons[,1],col="blue",xlim=c(1,5),ylim=c(10,25))
abline(lm(Cons.sum~Cons[,1]),col="blue")
points(Cons.sum~Cons[,2],col="green")
abline(lm(Cons.sum~Cons[,2]),col="green")
points(Cons.sum~Cons[,3],col="grey")
abline(lm(Cons.sum~Cons[,3]),col="grey")
points(Cons.sum~Cons[,4],col="red")
abline(lm(Cons.sum~Cons[,4]),col="red")
points(Cons.sum~Cons[,5],col="purple")
abline(lm(Cons.sum~Cons[,5]),col="purple")
legend(x="topleft",legend=c("CON1","CON2","CON3","CON4","CON5"),
fill=c("blue","green","grey","red","purple"))
```