NTNU, Norges teknisk-naturvitenskapelige universitet

EXAMINATION QUESTIONS FOR / EKSAMENSOPPGÅVE I / EKSAMENSOPPGAVE I SVSOS3003 "ANVENDT STATISTISK DATAANALYSE I SAMFUNNSVITENSKAP"

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Date of examination/ eksamensdag/ eksamensdag : 2010/05/27
Place of examination/ eksamensstad/ eksamenssted: Dragvoll
Time allowed/ tid til eksamen/ tid til eksamen: 6 hours/ 6 timar/ 6 timer
Points/ studiepoeng/ studiepoeng: 15

Languages/ Målform/ Språkform: English, Nynorsk, Bokmål
Number of pages with text/ Sider med tekst/ Sider med tekst: 10
Number of pages with English/ Sider med engelsk/ Sider med engelsk: 3
Number of pages with Nynorsk/ Sider med nynorsk/ Sider med nynorsk: 3
Number of pages with Bokmål/ Sider med bokmål/ Sider med bokmål: 3

Number of pages attachments/ Sider med vedlegg/ Sider med vedlegg: 36

Date of results/ Dato for sensur/ Dato for sensur: 2010/06/17

Phone no for results/ Sensurtelefon/ Sensurtelefon: 815 48014

BOKMÅL

Tillatte hjelpemiddel under eksamen:

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Berge, Erling. 2010. *SOS3003 Applied data analysis for social science: Collected lecture notes spring 2010.* Handout, 293 pages.

Norwegian-English / English-Norwegian dictionary

Kalkulator

Både lærebøker og forelesningsnotat kan inneholde notater.

Det er IKKE TILLATT å ta med eksamensoppgaver og løsningsforslag fra tidligere år.

OPPGAVE 1 og 2

Oppgave 1 og 2 benytter data fra Malawi samlet inn under feltarbeid i 2007. Data kommer fra lange intervju og spørreskjema samlet inn fra 270 hushold pluss 13 nøkkelinformanter. Det finnes mer om utvalget og variablene som benyttes nedenfor.

OPPGAVE 1 (OLS-regresjon, vekt 0,5)

Dette spørsmålet studerer determinanter av størrelsen til en tillitsindeks konstruert ved hjelp av prinsipal komponent-analyse av 16 variabler som gir uttrykk for tillit til ulike institusjoner og grupper av personer. De 16 variablene ga grunnlag for å identifisere 4 komponenter som ble rotert til en enkel struktur ved hjelp av varimax-prosedyren. De fire komponentene ble tolket til å indikere 1) Tillit til folk utenfor landsbyen, 2) Tillit til tradisjonelle autoriteter, 3) Tillit til folk innen landsbyen og 4) Tillit til moderne institusjoner.

I dette spørsmålet benyttes indeksen "*Trust in traditional authorities*" som avhengig variabel. Den vil kort bli kalt *Trust*. Uten nødvendigvis å implisere noe om kausal struktur, vil en gå ut fra at uttrykt tillit til tradisjonelle autoriteter vil variere sammen med atferd i situasjoner der lydighet mot tradisjonelle autoriteter kan observeres. Dette inkluderer å ta vare på kirkegården, og å være med på ubetalte offentlige arbeidsprosjekt. Forskjeller i kultur og innvirkningen av urban livsstil blir kontrollert for gjennom den regionale lokaliseringen av husholdene. Strukturelle determinanter som

kjønn og alder vil bli testet sammen med indikatorer på rikdom (eie av madrass og eie av radio). I tabellene til spørsmål 1 er det estimert 7 nesta modeller av *Trust*.

a) Skriv om hvordan kjønn og alder er med å determinere tillit til tradisjonelle autoriteter. Finn et 99% konfidensintervall for virkningen av *Participated in graveyard clearing project over the last 12 months* på *Trust* i model 1.
b) Presenter formelen for en F-test av virkningen som regional lokalisering til husholdene har på *Trust*, og finn de størrelsene som trengs for å gjennomføre testen. Finn den kritiske verdien i tabellen over F-fordelingen som vil sikre en sannsynlighet på 0.10 eller mindre for å gjøre feil av Type I. Drøft hvor troverdig t-tester og F-tester er i denne modellen.
c) Gi en kort oversikt over problemet med case som har stor innvirkning. Basert på de tabellene som er lagt ved spørsmålet, hva kan sies om case med stor innvirkning i denne studien?
d) Indeksen *Trust in traditional authorities* har 39 manglende case. Gi en kort oversikt over det generelle problemet med skjeve utvalg. Drøft i noe mer detalj om det kan være et skjevt utvalg i denne studien av *Trust*.

OPPGAVE 2 (Logistisk regresjon, vekt 0,4)
Folk i Malawi praktiserer flere ulike slektskapssystemer. Den grunnleggende distinksjonen går på om barna skal regnes å tilhøre ektemannens eller konas slekt (patrilineære eller matrilineære slektslinjer). Dette skillet blir videre kvalifisert ved lokaliseringen av ekteparet i ektemannens eller konas hjemmelandsby, eller andre steder (patrilokale, matrilokale, eller andre lokaliseringer). I ekteskapsskikkene i de ulike slektskapssystemene praktiseres i varierende grad betaling for bruden. Den avhengige variabelen i denne studien, *Bridepayment*, indikerer om lobola har vært betalt av dette hushaldet. I vedleggene til spørsmål 2 har vi estimert 2 modeller for betaling for bruden. Modell 1 er en regresjon av *Bridepayment* på familietype, kjønn og alder. Modell 2 er en regresjon av *Bridepayment* på regional lokalisering av husholdet.

a) Avgjør om familietype virker inn på sannsynligheten for å betale for bruden i regresjonen av *Bridepayment* på familietype, kjønn og alder. Drøft forskjellene mellom de ulike familietypene i tilbøyeligheten til å betale for bruden. Bruk modellen uten kontroll for alder og kjønn.
b) Finn i regresjonen av *Bridepayment* på familietype, kjønn og alder effekten av kjønn når alder og familietype er kontrollert for. Drøft virkningen av alder og hvordan den påvirker estimatet av effekten til kjønn når en kontrollerer for familietype.

c) Finn ved hjelp av en sannsynlighetsratetest om interaksjonen mellom kjønn og alder yter signifikant til regresjonsmodellen av *Bridepayment* på familietype, kjønn og alder med et testnivå på 0.10.
d) Fastslå, i regresjonen av *Bridepayment* på regional lokalisering av husholdet, i hvilken grad forutsetningene for en logistisk regresjon er oppfylt.

OPPGAVE 3 (Strukturmodell, vekt 0,1)
I en studie av holdninger til bygdesamfunn ble folk fra et enkelt tilfeldig trukket utvalg fra den norske befolkninga spurt om å gi uttrykk for hvor sterkt de var enige eller uenige i påstanden ”Livet på landet er mer tilfredsstillende enn livet i byer”. Dette er den avhengige variabelen, kalt *Livet på landet best*, brukt i en strukturmodell med 2 mellomliggende variabler, inntekt (*E.inntekt*) og utdanning (*E.utdanning*); og 2 uavhengige variabler, alder (*Alder*) og kvinne (*Kvinne*). Flere varianter av strukturligningene er estimert og presentert i vedlegget til spørsmål 3.

a) Tegn et stidiagram over relasjonene i strukturmodellen. Finn de beste estimatene av stikoeffisientene som kan representere styrken på relasjonene i diagrammet, og skriv koeffisientene inn i diagrammet.
b) Finn størrelsen til den direkte virkningen av *Kvinne* på *Livet på landet best*. Finn størrelsen til den indirekte effekten av *Kvinne* på *Livet på landet best*.

NYNORSK

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Det er IKKJE LOV å ta med eksamensoppgåver og løysingframlegg frå tidlegare år.

OPPGÅVE 1 og 2

Oppgåve 1 og 2 nyttar data frå Malawi samla under feltarbeid i 2007. Data kjem frå lange intervju og spørjeskjema samla inn frå 270 hushald pluss 13 nøkkelinformantar. Det finst meir om utvalet og variablar som er nytta nedanfor.

OPPGÅVE 1 (OLS-regresjon, vekt 0,5)

Dette spørsmålet granskar determinantar av storleiken til ein tillitsindeks konstruert ved hjelp av prinsipal komponent-analyse av 16 variablar som gir uttrykk for tillit til ulike institusjonar og grupper av personar. Dei 16 variablane ga grunnlag for å identifisere 4 komponentar som vart rotert til ein enkel struktur ved hjelp av varimax prosedyren. Dei fire komponentane vart tolka til å indikere 1) Tillit til folk utanfor landsbyen, 2) Tillit til tradisjonelle autoritetar, 3) Tillit til folk innan landsbyen og 4) Tillit til moderne institusjonar.

I dette spørsmålet nyttar vi indeksen "*Trust in traditional authorities*" som avhengig variabel. Den vil kort bli kalla *Trust*. Utan nødvendigvis å implisere noko om kausal struktur, vil ein gå ut frå at uttrykt tillit til tradisjonelle autoritetar vil variere saman med åtferd i situasjonar der lydnad mot tradisjonelle autoritetar kan bli observert. Dette inkluderer å ta vare på kyrkjegarden, og å vere med på ubetalte offentlege arbeidsprosjekt. Skilnader i kultur og innverknaden av urban livsstil vert kontrollert for gjennom den regionale lokaliseringa av hushalda. Strukturelle determinantar som kjønn

og alder vil bli testa saman med indikatorar på rikdom (eige av madrass og eige av radio). I tabellane til spørsmål 1 er det estimert 7 nesta modellar av *Trust*.

a) Skriv om korleis kjønn og alder er med å determinere tillit til tradisjonelle autoritetar. Finn eit 99% konfidensintervall for verknaden av *Participated in graveyard clearing project over the last 12 months* på *Trust* i model 1.
b) Presenter formelen for ein F-test av verknaden som regional lokalisering til hushalda har på *Trust*, og finn dei storleikane som trengst for å gjennomføre testen. Finn den kritiske verdien i tabellen over F-fordelinga som vil sikre eit sannsyn på 0.10 eller mindre for å gjere feil av Type I. Drøft kor truverdig t-testar og F-testar er i denne modellen.
c) Gi ein kort oversikt over problem med case som har stor verknad. Basert på dei tabellane som er lagt ved spørsmålet, kva kan seiast om case med stor verknad i denne studien?
d) Indeksen *Trust in traditional authorities* har 39 manglande case. Gi ein kort oversikt over det generelle problemet med skeive utval. Drøft i noko meir detalj om det kan vere eit skeivt utval i denne studien av *Trust*.

OPPGÅVE 2 (Logistisk regresjon, vekt 0,4)
Folk i Malawi praktiserer fleire ulike slektsskapssystem. Den grunnleggjande skilnaden byrjar med å fastslå om barna skal reknast å høyre til i ektemannen si slekt eller i kona si slekt (patrilineære eller matrilineære slektsliner). Dette skiljet vert så kvalifisert med lokalisering av ekteparet i ektemannen eller kona sin heimelandsby, eller andre stader (patrilokale, matrilokale, eller andre lokaliseringar). I ekteskapsskikkane i dei ulike slektskapssystema vert det i varierande grad betalt for bruda. Den avhengige variabelen i denne studien, *Bridepayment*, indikerer om lobola har vore betalt av dette hushaldet. I vedlegga til spørsmål 2 har vi estimert 2 modellar for betaling for bruda. Modell 1 er ein regresjon av *Bridepayment* på familietype, kjønn og alder. Modell 2 er ein regresjon av *Bridepayment* på regional lokalisering av hushalda.

e) Avgjer om familietype verkar inn på sannsynet for å betale for bruda i regresjonen av *Bridepayment* på familietype, kjønn og alder. Drøft skilnadene mellom dei ulike familietypane i tildrivet til å betale for bruda. Bruk modellen utan kontroll for alder og kjønn.
f) Finn i regresjonen av *Bridepayment* på familietype, kjønn og alder effekten av kjønn når alder og familietype er kontrollert for. Drøft verknaden av alder og korleis den påverkar estimatet av effekten til kjønn når ein kontrollerer for familietype.

g) Finn ved hjelp av ein Sannsynsratetest om interaksjonen mellom kjønn og alder yter signifikant til regresjonsmodellen av *Bridepayment* på familietype, kjønn og alder med eit testnivå på 0.10.
h) Fastslå i regresjonen av *Bridepayment* på regional lokalisering av hushaldet i kva grad føresetnadene for ein logistisk regresjon er oppfylt.

OPPGÅVE 3 (Strukturmodell, vekt 0,1)
I ein studie av haldningar til bygdesamfunn vart folk frå eit enkelt tilfeldig trukket utval frå den norske befolkninga spurt om å gi uttrykk for kor sterkt dei var einige eller ueinige i påstanden ”Livet på landet er mer tilfredsstillende enn livet i byer”. Dette er den avhengige variabelen, kalla *Livet på landet best*, brukt i ein strukturmodell med 2 mellomliggjande variablar, inntekt (*E.inntekt*) og utdanning (*E.utdanning*); og 2 uavhengige variablar, alder (*Alder*) og kvinne (*Kvinne*). Fleire variantar av strukturlikningane er estimert og presentert i vedlegga til spørsmål 3.

a) Teikn eit stidiagram over relasjonane i strukturmodellen. Finn dei beste estimata av stikoeffisientane som kan representere styrken på relasjonane i diagrammet, og skriv koeffisientane inn i diagrammet.
b) Finn storleiken til den direkte verknaden av *Kvinne* på *Livet på landet best.* Finn storleiken til den indirekte effekten av *Kvinne* på *Livet på landet best.*

ENGLISH

Permitted helpful materials in the examination:

Allison, Paul D. 2002. *Missing data.* No 136 Quantitative Applications in the Social Sciences. London: Sage**.**

Hamilton, Lawrence C. 1992. *Regression with graphics.* Belmont: Duxbury.

Hamilton, Lawrence C. 2008. A Low-Tech Guide to Causal Modelling. http://pubpages.unh.edu/~lch/causal2.pdf , Handout, 12 pages.

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Norwegian-English / English-Norwegian dictionary

Calculator

Both textbooks and handouts may contain written notes.

It is NOT ALLOWED to bring examinations and grader's advice for previous years.

QUESTIONS 1 and 2

Questions 1 and 2 use data from Malawi collected during fieldwork in 2007. The data come from long interviews and questionnaire forms collected from 270 households plus 13 key informers. More on the sample and variables is presented below.

QUESTION 1 (OLS-regression, weight 0,5)

In this question we explore some determinants of the size of a trust index constructed by principal components analysis from 16 variables expressing strength of trust in various institutions and groups of persons. From the 16 variables 4 components were identified and rotated by varimax into a simple structure. They were interpreted to indicate 1) Trust in people outside the village, 2) Trust in traditional authorities, 3) Trust in people within the village, and 4) Trust in modern institutions.

This question uses as the dependent variable the index called "Trust in traditional authorities". It will for short be called "Trust". Without necessarily implying any causal structure, the expressed trust in traditional authorities is supposed to vary with behaviour in areas where compliance with traditional authorities can be observed. This includes taking care of churchyards and contributions to unpaid public work projects. Differences in culture and influence from urban living are controlled for by the regional location of the households. Structural determinants such as sex and age will be tested

together with indicators of wealth (owning mattress and owning radio). In the tables for question 1 seven nested models of *Trust* have been estimated.

a) Describe the impact of sex and age on the determination of trust in traditional authorities. Find a 99% confidence interval for the impact of *Participated in graveyard clearing project over the last 12 months* on *Trust* in model 1.
b) Present the formula for the F-test of the contribution of regional location of households on *Trust*, and find the quantities needed to perform the test. Find the critical value in the table of the F-distribution to secure a probability of 0.10 or less for doing a type I error. Discuss briefly how trustworthy the t-tests and F-tests are in this model.
c) Outline briefly the problem of influential cases. Based on the tables attached to this question what can be said about influential cases in this particular study?
d) The index of *Trust in traditional authorities* has 39 missing observations. Outline briefly the general problem of biased samples. Discuss in more detail the possibilities for having a biased sample in this particular study of *Trust*.

QUESTION 2 (Logistic regression, weight 0,4)
The people of Malawi practice several different forms of lineage systems. The basic distinction starts with determining if children belong to the husband's or the wife's lineage (patrilineal or matrilineal lineage). This distinction is then qualified by the location of the married couple in the husband's or the wife's village of origin or elsewhere (patrilocal, matrilocal, or other locations). In the marriage customs of the various lineage systems payment for the bride is practiced to varying degrees. The dependent variable in this study, *Bridepayment*, records if lobola has been paid by the household.
In the attachment for question 2 two models of payment for the bride has been estimated. Model 1 is a regression of *Bridepayment* on family type, sex, and age. Model 2 is a regression of *Bridepayment* on regional location of the households.

a) Determine, in the regression of *Bridepayment* on family type, sex, and age, if family type is related to the probability of paying for the bride. Discuss the differences between the various family types in the propensity to use bridal payment. Use the model without control for sex and age.
b) Determine, in the regression of *Bridepayment* on family type, sex, and age, the effect of sex controlling for the effect of age and family type. Discuss the impact of age and how it affects the estimate of the effect of sex controlling for the effect of family type.

c) Determine, in the regression of *Bridepayment* on family type, sex, and age, by means of the likelihood ratio test if the interaction between sex and age contributes significantly to the model at a level of significance of 0.10.
d) Determine, in the regression of *Bridepayment* on regional location of the household, the degree to which the assumptions of a logistic regression have been fulfilled.

QUESTION 3 (Structural equations, weight 0,1)
In a study of attitudes towards rural society people in a random sample of the Norwegian population were asked to express how strongly they agreed or disagreed to the proposition: "Life in the countryside is more satisfying than life in towns." This is the dependent variable, called *Livet på landet best*, in a structural equation model with 2 intermediate variables, income (*E.inntekt*) and education (*E.utdanning*); and 2 independent variables, age (*Alder*) and a dummy indicating if the respondent is a woman (*Kvinne*). Several variants of the structural equations have been estimated and are presented in the attachment for question 3.

a) Draw a path diagram of the relations of the structural model. Find the best estimates of the path coefficients to indicate the strength of the relations in the diagram and write the coefficients into the diagram.
b) Determine the size of the direct impact of *Kvinne* on *Livet på landet best.* Determine the size of the indirect effect of *Kvinne* on *Livet på landet best.*

VARIABLES AND SAMPLE FOR QUESTIONS 1 AND 2

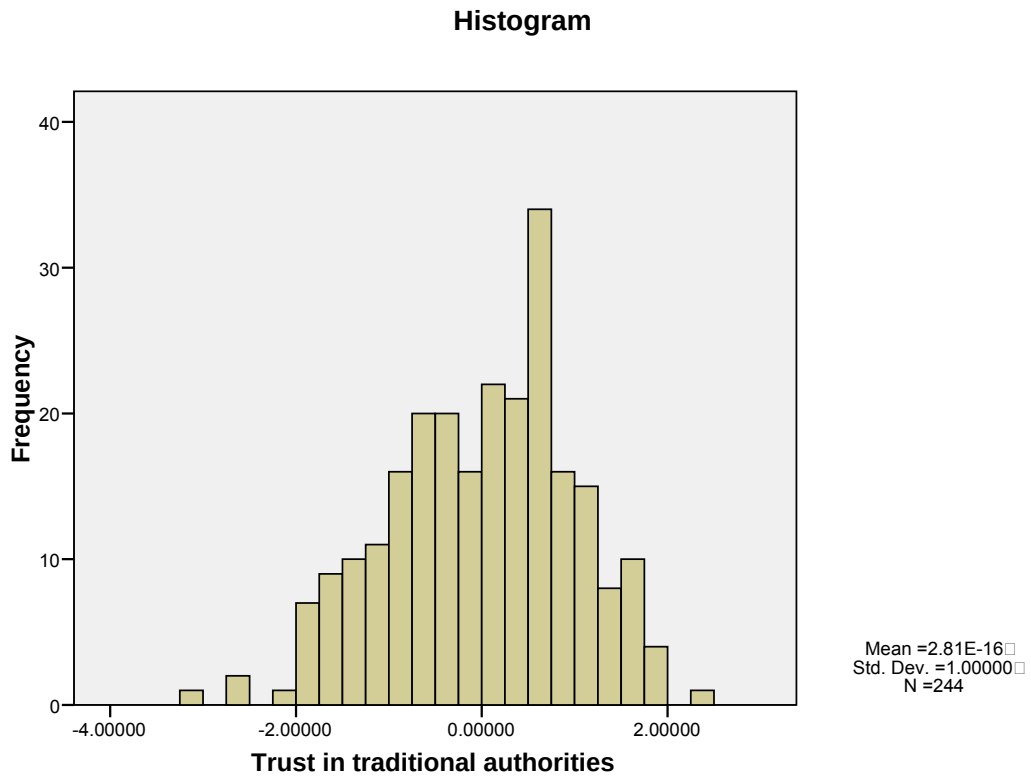
The Sample

Fieldwork in Malawi during the summer 2007 comprised the collection of questionnaire data from 283 households. The households come from 18 different villages in 6 districts, 15 households from each village. The households were selected in 3 stages. In each of Malawi's 3 regions 2 districts were chosen. One district was chosen close to an urban centre and one far from this urban centre. Within each district a random sample of 3 villages was selected, and from a listing of the households in each village a random sample of 15 households was obtained. In addition to these 270 households, questionnaire responses from 13 households of key informers were added to the data set. For most modelling purposes 283 cases is a small sample. Missing data on most variables will exacerbate the problems of a small sample.

QUESTION 1

Variable descriptions

Dependent variable Question 1 *Trust in traditional authorities* (this is a constructed index)



Statistics

Trust in traditional authorities

N	Valid	244
	Missing	39
Mean		.0000000
Median		.1094897
Mode		.32238
Minimum		-3.09894
Maximum		2.33551

Explanatory variables Question 1:

Districts

Districts	Sample		Missing on Trust index	
	Frequency	Percent	Frequency	Percent
1 Rumphi	45	15.9	6	15.4
2 Mzimba	45	15.9	10	25.6
3 Kasungu	49	17.3	7	17.9
4 Dowa	50	17.7	9	23.1
5 Chiradzulu	49	17.3	6	15.4
6 Phalombe	45	15.9	1	2.6
Total	283	100.0	39	100.0

Sex of respondent

		Sample		Missing on Trust index	
		Frequency	Percent	Frequency	Percent
Valid	1 Male	155	54.8	23	59.0
	0 Female	127	44.9	16	41.0
	Total	282	99.6	39	100.0
Missing	System	1	.4		
Total		283	100.0		

Age of respondent in years

Sample	N	Minimum	Maximum	Mean	Std. Deviation
Age of respondent	275	15	86	40.96	16.673
Valid N (listwise)	275				
Missing	8				
Total	283				
Missing on Trust index	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Age of respondent	38	21	73	43.47	17.803
Valid N (listwise)	38				
Missing	1				
Total	39				

Owning mattress

		Sample		Missing on Trust index	
		Frequency	Percent	Frequency	Percent
Valid	no	225	79.5	32	82.1
	yes=1	58	20.5	7	17.9
	Total	283	100.0	39	100.0

Owning radio

		Sample		Missing on Trust index	
		Frequency	Percent	Frequency	Percent
Valid	no	86	30.4	18	46.2
	yes=1	197	69.6	21	53.8
	Total	283	100.0	39	100.0

L7 Participated in unpaid public work during the last 12 months

(L7PubWork (participated))

		Sample		Missing on Trust index	
		Frequency	Percent	Frequency	Percent
Valid	no	50	17.7	3	7.7
	yes=1	233	82.3	36	92.3
	Total	283	100.0	39	100.0

L8.k. Participated in graveyard clearing project over the last 12 months

(L8k (participated))

		Sample		Missing on Trust index	
		Frequency	Percent	Frequency	Percent
Valid	no	161	56.9	17	43.6
	yes=1	122	43.1	22	56.4
	Total	283	100.0	39	100.0

L8.k. Number of days worked on graveyard cleaning last 12 months

(L8kDaysWorked**)**

		Sample		Missing on Trust index	
		Frequency	Percent	Frequency	Percent
Valid	0	161	56.9	17	43.6
	1	90	31.8	14	35.9
	2	21	7.4	6	15.4
	3	9	3.2	2	5.1
	6	1	.4	0	0
	7	1	.4	0	0
	Total	283	100.0	39	100.0

Tables for Question 1

Model Summary (h)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.195(a)	.038	.030	.98102970	.038	4.592	2	233	.011
2	.264(b)	.070	.058	.96669117	.032	7.963	1	232	.005
3	.272(c)	.074	.054	.96880286	.004	.495	2	230	.610
4	.430(d)	.185	.149	.91879918	.111	6.143	5	225	.000
5	.434(e)	.188	.145	.92105609	.003	.449	2	223	.639
6	.434(f)	.188	.141	.92311348	.000	.007	1	222	.933
7	.440(g)	.194	.139	.92427899	.005	.720	2	220	.488

a
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months
b
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months
c
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth
d
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth, District of household location is Kasungu, District of household location is Rumphi, District of household location is Chiradzulu, District of household location is Dowa, District of household location is Mzimba
e
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth, District of household location is Kasungu, District of household location is Rumphi, District of household location is Chiradzulu, District of household location is Dowa, District of household location is Mzimba, Age of respondent, Sex of respondent
f
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth, District of household location is Kasungu, District of household location is Rumphi, District of household location is Chiradzulu, District of household location is Dowa, District of household location is Mzimba, Age of respondent, Sex of respondent, Interaction of sex and age
g
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth, District of household location is Kasungu, District of household location is Rumphi, District of household location is Chiradzulu, District of household location is Dowa, District of household location is Mzimba, Age of respondent, Sex of respondent, Interaction of sex and age, Age of respondent squared, Interaction of age and age squared
h
Dependent Variable: Trust in traditional authorities

ANOVA (h)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.839	2	4.420	4.592	.011(a)
	Residual	224.244	233	.962		
	Total	233.083	235			
2	Regression	16.281	3	5.427	5.807	.001(b)
	Residual	216.802	232	.934		
	Total	233.083	235			
3	Regression	17.210	5	3.442	3.667	.003(c)
	Residual	215.873	230	.939		
	Total	233.083	235			
4	Regression	43.140	10	4.314	5.110	.000(d)
	Residual	189.943	225	.844		
	Total	233.083	235			
5	Regression	43.902	12	3.659	4.313	.000(e)
	Residual	189.181	223	.848		
	Total	233.083	235			
6	Regression	43.908	13	3.378	3.964	.000(f)
	Residual	189.175	222	.852		
	Total	233.083	235			
7	Regression	45.139	15	3.009	3.523	.000(g)
	Residual	187.944	220	.854		
	Total	233.083	235			

a
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months
b
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months
c
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth
d
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth, District of household location is Kasungu, District of household location is Rumphi, District of household location is Chiradzulu, District of household location is Dowa, District of household location is Mzimba
e
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth, District of household location is Kasungu, District of household location is Rumphi, District of household location is Chiradzulu, District of household location is Dowa, District of household location is Mzimba, Age of respondent, Sex of respondent

f
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth, District of household location is Kasungu, District of household location is Rumphi, District of household location is Chiradzulu, District of household location is Dowa, District of household location is Mzimba, Age of respondent, Sex of respondent, Interaction of sex and age
g
Predictors: (Constant), L8k Number of days worked on graveyard cleaning last 12 months (missing=0), L8.k. Participated in graveyard clearing project over the last 12 months, L7 Participated in unpaid public work during the last 12 months, Owning radio is information wealth, Owning mattress is material wealth, District of household location is Kasungu, District of household location is Rumphi, District of household location is Chiradzulu, District of household location is Dowa, District of household location is Mzimba, Age of respondent, Sex of respondent, Interaction of sex and age, Age of respondent squared, Interaction of age and age squared
h
Dependent Variable: Trust in traditional authorities

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.158	.083		1.908	.058		
	L8.k. Participated in graveyard clearing project over the last 12 months	-.560	.198	-.276	-2.828	.005	.432	2.315
	L8k Number of days worked on graveyard cleaning last 12 months (missing=0)	.149	.105	.138	1.414	.159	.432	2.315
2	(Constant)	-.167	.141		-1.186	.237		
	L8.k. Participated in graveyard clearing project over the last 12 months	-.723	.204	-.357	-3.550	.000	.397	2.516
	L8k Number of days worked on graveyard cleaning last 12 months (missing=0)	.149	.104	.138	1.435	.153	.432	2.315
	L7 Participated in unpaid public work during the last 12 months	.487	.173	.196	2.822	.005	.832	1.201
3	(Constant)	-.079	.171		-.462	.645		
	L8.k. Participated in graveyard clearing project over the last 12 months	-.740	.209	-.365	-3.537	.000	.378	2.646
	L8k Number of days worked on graveyard cleaning last 12 months (missing=0)	.146	.106	.136	1.378	.169	.416	2.406
	L7 Participated in unpaid public work during the last 12 months	.509	.175	.205	2.916	.004	.818	1.222
	Owning mattress is material wealth	.033	.161	.014	.207	.836	.917	1.090
	Owning radio is information wealth	-.145	.146	-.065	-.995	.321	.930	1.075

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
4	(Constant)	-.395	.226		-1.746	.082		
	L8.k. Participated in graveyard clearing project over the last 12 months	-.669	.234	-.330	-2.858	.005	.271	3.686
	L8k Number of days worked on graveyard cleaning last 12 months (missing=0)	.118	.104	.110	1.133	.258	.388	2.581
	L7 Participated in unpaid public work during the last 12 months	.368	.209	.148	1.757	.080	.512	1.954
	Owning mattress is material wealth	-.216	.168	-.089	-1.290	.198	.763	1.310
	Owning radio is information wealth	-.135	.144	-.061	-.939	.349	.857	1.167
	District of household location is Rumphi	.507	.221	.188	2.295	.023	.543	1.842
	District of household location is Mzimba	1.044	.241	.369	4.330	.000	.499	2.003
	District of household location is Kasungu	.082	.219	.032	.374	.709	.508	1.970
	District of household location is Dowa	.587	.231	.215	2.546	.012	.508	1.967
	District of household location is Chiradzulu	.681	.207	.265	3.287	.001	.559	1.789
5	(Constant)	-.411	.282		-1.456	.147		
	L8.k. Participated in graveyard clearing project over the last 12 months	-.666	.236	-.329	-2.826	.005	.269	3.719
	L8k Number of days worked on graveyard cleaning last 12 months (missing=0)	.110	.106	.102	1.040	.299	.377	2.656
	L7 Participated in unpaid public work during the last 12 months	.367	.211	.147	1.737	.084	.505	1.980
	Owning mattress is material wealth	-.211	.168	-.087	-1.254	.211	.762	1.312
	Owning radio is information wealth	-.161	.148	-.073	-1.086	.279	.811	1.232
	District of household location is Rumphi	.439	.233	.162	1.883	.061	.489	2.043
	District of household location is Mzimba	.997	.251	.352	3.976	.000	.464	2.155
	District of household location is Kasungu	.018	.230	.007	.078	.938	.464	2.156
	District of household location is Dowa	.515	.245	.188	2.101	.037	.452	2.210
	District of household location is Chiradzulu	.682	.208	.265	3.279	.001	.558	1.792
	Sex of respondent	.134	.143	.067	.941	.348	.720	1.388
	Age of respondent	.000	.004	.000	.006	.995	.874	1.144

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
6 (Constant)	-.426	.334		-1.276	.203		
L8.k. Participated in graveyard clearing project over the last 12 months	-.665	.237	-.328	-2.809	.005	.268	3.734
L8k Number of days worked on graveyard cleaning last 12 months (missing=0)	.109	.106	.102	1.029	.304	.375	2.669
L7 Participated in unpaid public work during the last 12 months	.368	.212	.148	1.734	.084	.502	1.992
Owning mattress is material wealth	-.208	.171	-.086	-1.220	.224	.741	1.349
Owning radio is information wealth	-.161	.149	-.073	-1.085	.279	.811	1.233
District of household location is Rumphi	.438	.234	.162	1.868	.063	.487	2.054
District of household location is Mzimba	.995	.252	.352	3.952	.000	.462	2.166
District of household location is Kasungu	.017	.231	.006	.071	.943	.461	2.168
District of household location is Dowa	.514	.246	.188	2.090	.038	.452	2.214
District of household location is Chiradzulu	.681	.209	.264	3.263	.001	.557	1.797
Sex of respondent	.160	.342	.080	.470	.639	.126	7.909
Age of respondent	-.001	.012	-.015	-.077	.939	.099	10.075
Interaction of sex and age	.001	.008	.019	.084	.933	.070	14.211

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
7 (Constant)	-.706	.665		-1.062	.289		
L8.k. Participated in graveyard clearing project over the last 12 months	-.689	.238	-.340	-2.894	.004	.265	3.770
L8k Number of days worked on graveyard cleaning last 12 months (missing=0)	.115	.107	.107	1.081	.281	.373	2.682
L7 Participated in unpaid public work during the last 12 months	.386	.215	.155	1.790	.075	.490	2.043
Owning mattress is material wealth	-.200	.171	-.082	-1.171	.243	.740	1.351
Owning radio is information wealth	-.198	.152	-.090	-1.304	.194	.776	1.288
District of household location is Rumphi	.398	.237	.147	1.678	.095	.476	2.101
District of household location is Mzimba	.985	.254	.348	3.880	.000	.456	2.195
District of household location is Kasungu	.023	.234	.009	.100	.920	.452	2.214
District of household location is Dowa	.534	.249	.195	2.145	.033	.442	2.264
District of household location is Chiradzulu	.699	.210	.272	3.331	.001	.551	1.815
Sex of respondent	-.192	.924	-.096	-.208	.835	.017	57.773
Age of respondent	.049	.067	.804	.724	.470	.003	336.975
Interaction of sex and age	-.017	.044	-.492	-.380	.704	.002	457.242
Age of respondent squared	-.001	.001	-.819	-.740	.460	.003	333.646
Interaction of age and age squared	.000	.000	.434	.388	.698	.003	340.907

a Dependent Variable: Trust in traditional authorities

Casewise Diagnostics(a)

Case Number	Std. Residual	Trust in traditional authorities	Predicted Value	Residual
237	-3.351	-3.09894	-.0012900	-3.09765299

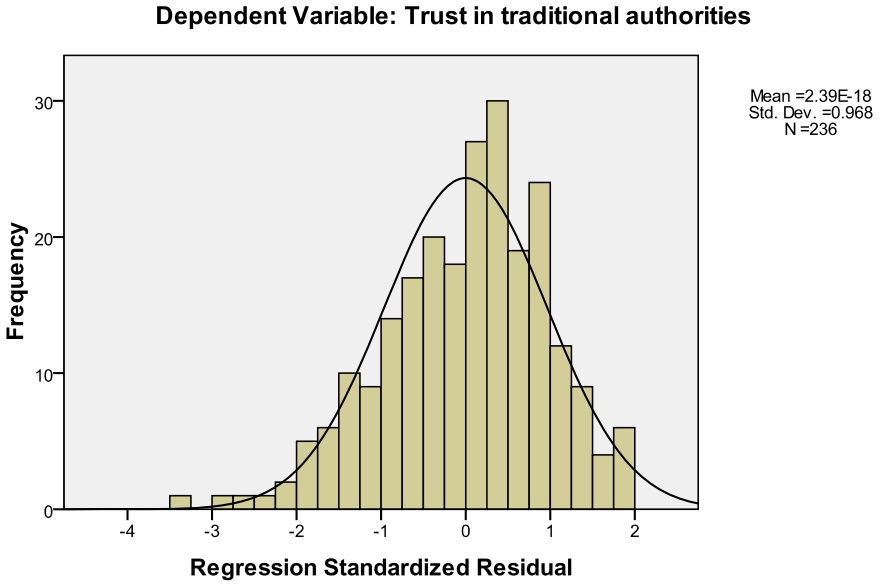
a Dependent Variable: Trust in traditional authorities

Residuals Statistics[a]

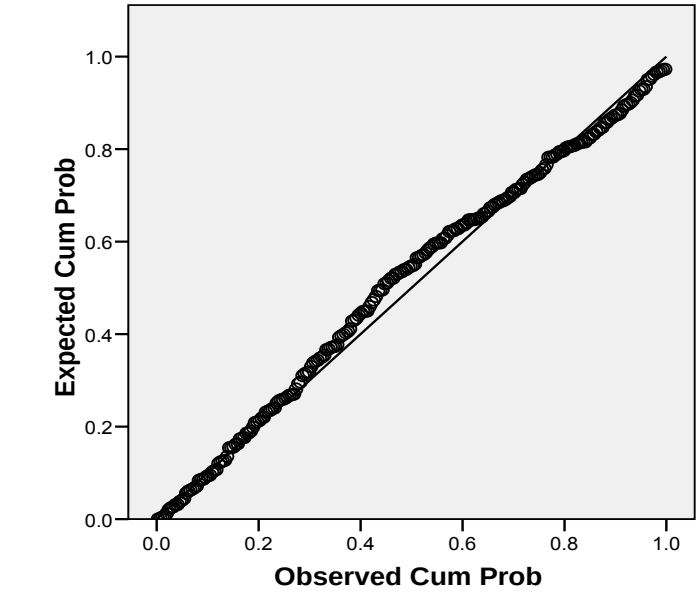
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-1.0492405	1.0259682	.0171708	.43826903	236
Standard Error of Predicted Value	.167	.605	.235	.052	236
Residual	-3.09765291	1.77434480	.00000000	.89429436	236
Cook's Distance	.000	.154	.005	.012	236
Centered Leverage Value	.028	.425	.064	.040	236

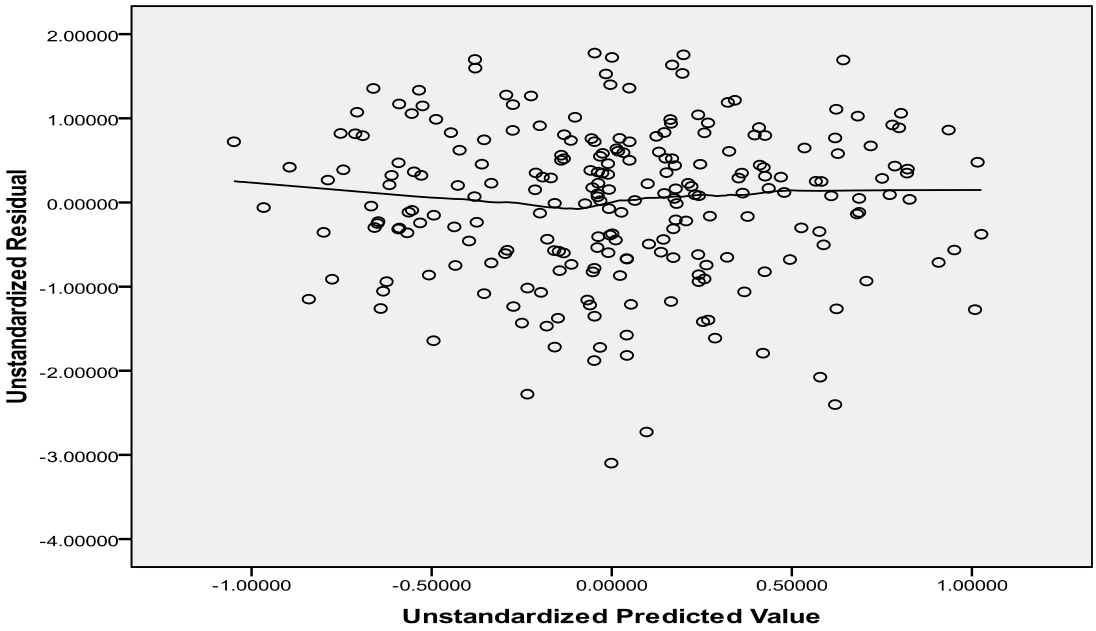
a. Dependent Variable: Trust in traditional authorities

Histogram

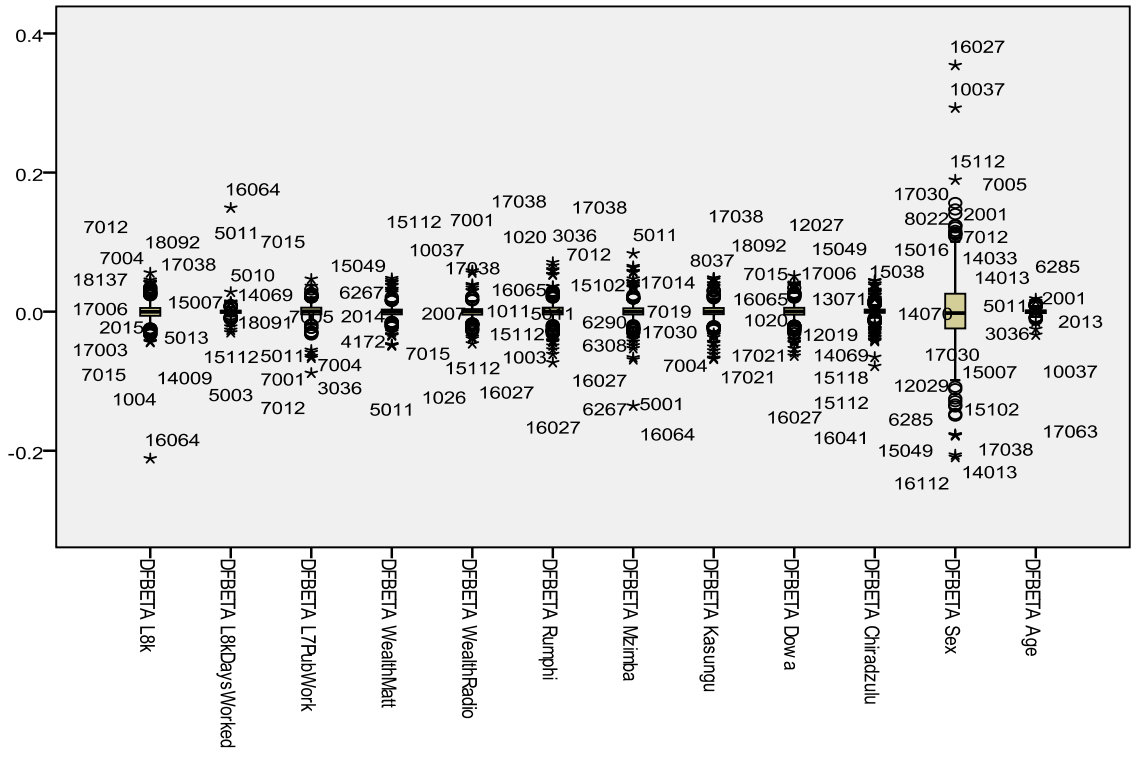


Normal P-P Plot of Regression Standardized Residual

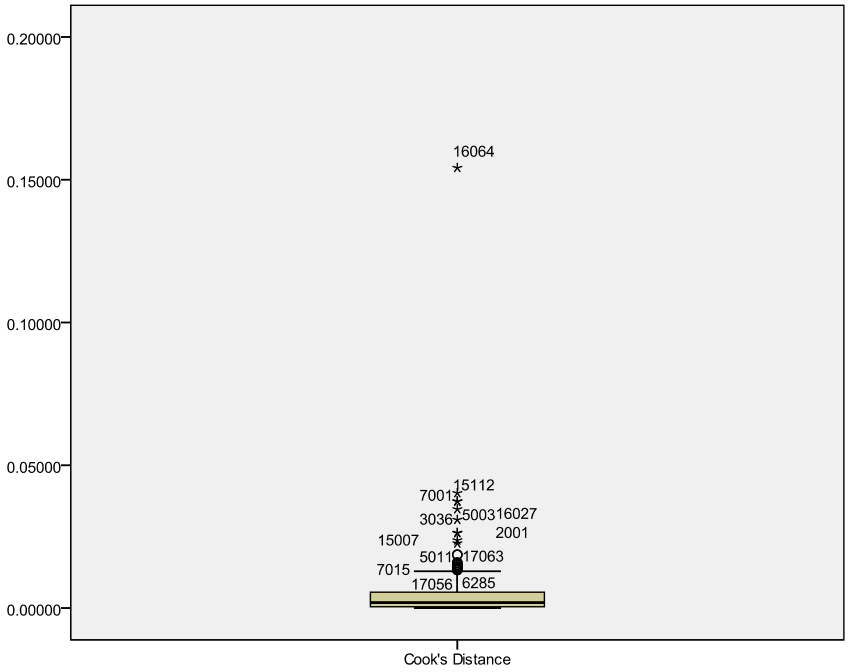




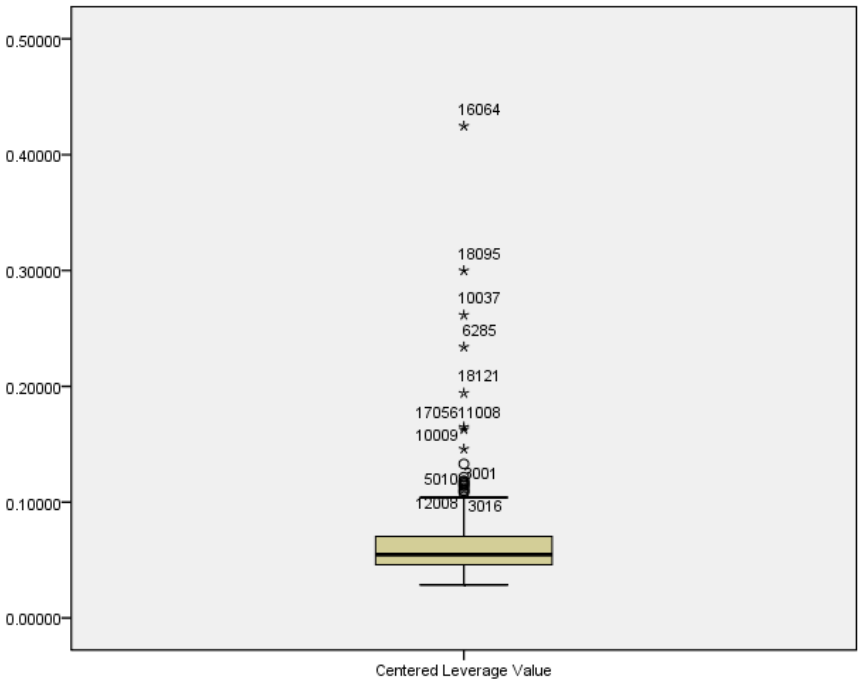
The line in the diagram is a LOESS line based on 50% of the observations



Numbers in the diagram refers to cases.



Numbers in the diagram refers to cases.



Numbers in the diagram refers to cases.

Variable values on selected cases

HHQIDNO	14013	16112	10037	16027	18095	16064
Trust	-1.40	0.98	0.50	1.73	-.08	1.04
Rumphi	0	0	0	0	0	0
Mzimba	0	0	0	0	0	0
Kasungu	0	0	0	0	0	0
Dowa	0	0	1	0	0	0
Chiradzulu	1	0	0	0	0	0
Phalombe	0	1	0	1	1	1
Sex	1	0	1	1	0	1
Age	22	18	86	18	29	24
WealthMatt	0	0	0	0	0	1
WealthRadio	1	1	1	0	0	1
L8k (participated)	1	0	1	0	1	1
L8kDaysWorked	1	0	1	0	60	7
L7PubWork (participated)	1	1	1	1	1	1
LEVERAGE	0.07	0.08	0.26	0.10	.30	.42
DFBETAS (sex)	-0.21	-0.21	0.29	0.35	-	-
Cook's D	-	-	-	-	0	.15

QUESTION 2

Malawi comprises different cultures with widely different family systems. A main division goes between matrilineal and patrilineal cultures. In patrilineal cultures children belong to the father's family and land is inherited only by sons. In matrilineal cultures children belong to the mother's family and land is inherited only by daughters. But there are many in between forms of families. In patrilineal cultures the father's "ownership" of the children depends on proper payment for the bride. This payment is called lobola. The present question explores if lobola has been paid or not in the household or family answering the question. The sex and age variables record the sex and age of the person answering the question.

Variable descriptions

Dependent variable Question 2 *Bridepayment*

Bridal payment (lobola) has been paid = 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	108	38.2	43.0	43.0
	1 yes	143	50.5	57.0	100.0
	Total	251	88.7	100.0	
Missing	System	32	11.3		
Total		283	100.0		

Explanatory variables Question 2 Model 1: Type of marriage and kinship (lineage) system

Lineage system and location of residential unit		Frequency	Percent
Chikamwini = 1	**Family lives in wife's village and the children belong the the wife's lineage** (chikamwini)	105	37.1
Chitengwa = 1	**Family lives in husband's village and the children belong the wife's lineage** (chitengwa)	44	15.5
PatriPatri = 1	**Family lives in husband's village and the children belong the husband's lineage**	99	35.0
OtherMarriageS = 1	**Other combinations of household location and lineage system**	32	11.3
	Patrilineal and neolocal	5	1.8
	Matrilineal and neolocal	8	2.8
	Do not know/other	19	6.7
Total		280	98.9
Missing	System	3	1.1
Total		283	100.0

Sex of respondent (see under Question 1)

Age of respondent in years (see under Question 1)

Bridal payment according to sex, district location and family type

Bridal payment according to location of household		Bridepayment has been paid		
		no	yes	Total
Sex of household representative (respondent)	0 female	73	40	113
	1 male	35	102	137
District of household location is Rumphi	0 no	102	110	212
	1 yes	6	33	39
District of household location is Mzimba	0 no	103	105	208
	1 yes	5	38	43
District of household location is Kasungu	0 no	102	113	215
	1 yes	6	30	36
District of household location is Dowa	0 no	100	101	201
	1 yes	8	42	50
District of household location is Chiradzulu	0 no	68	143	211
	1 yes	40	0	40
District of household location is Phalombe	0 no	65	143	208
	1 yes	43	0	43
Family lives in wife's village and the children belong the the wife's lineage	0 no	26	133	159
	1 yes	82	10	92
Family lives in husband's village and the children belong the wife's lineage	0 no	99	114	213
	1 yes	9	29	38
Family lives in husband's village and the children belong the husband's lineage	0 no	99	58	157
	1 yes	9	85	94
Other combinations of household location and lineage system	0 no	101	125	226
	1 yes	7	18	25
Total		108	143	251

Explanatory variables Question 2 Model 2: Districts

Districts	Frequency	Percent
1 Rumphi	45	15.9
2 Mzimba	45	15.9
3 Kasungu	49	17.3
4 Dowa	50	17.7
5 Chiradzulu	49	17.3
6 Phalombe	45	15.9
Total	283	100.0

Tables for Question 2 Model 1

Model 1: Bridal payment according to family type, sex and age of respondent

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	242	85.5
	Missing Cases	41	14.5
	Total	283	100.0
Unselected Cases		0	.0
Total		283	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Block 0: Beginning Block

Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients
			Constant
Step 0	1	331.240	.264
	2	331.239	.266
	3	331.239	.266

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 331.239

c. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Classification Table[a,b]

Observed			Predicted		
			Bridepayment has been paid		Percentage Correct
			no	yes	
Step 0	Bridepayment has been paid	no	0	105	.0
		yes	0	137	100.0
	Overall Percentage				56.6

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.266	.130	4.207	1	.040	1.305

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Chitengwa	7.022	1	.008
		PatriPatri	66.626	1	.000
		OtherMarriageS	2.688	1	.101
	Overall Statistics		127.101	3	.000

Block 1

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients			
			Constant	Chitengwa	PatriPatri	OtherMarriageS
Step 1	1	195.528	-1.560	2.646	3.165	2.440
	2	189.202	-2.004	3.217	4.100	2.948
	3	189.024	-2.089	3.305	4.294	3.033
	4	189.024	-2.092	3.308	4.301	3.036
	5	189.024	-2.092	3.308	4.301	3.036

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 331.239

d. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	142.215	3	.000
	Block	142.215	3	.000
	Model	142.215	3	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	189.024[a]	.444	.596

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Bridepayment has been paid		Percentage Correct
			no	yes	
Step 1	Bridepayment has been paid	no	81	24	77.1
		yes	10	127	92.7
	Overall Percentage				86.0

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Chitengwa	3.308	.524	39.888	1	.000	27.337
	PatriPatri	4.301	.485	78.513	1	.000	73.800
	OtherMarriageS	3.036	.557	29.667	1	.000	20.829
	Constant	-2.092	.335	38.950	1	.000	.123

a. Variable(s) entered on step 1: Chitengwa, PatriPatri, OtherMarriageS.

Block 2

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients				
			Constant	Chitengwa	PatriPatri	OtherMarriageS	Sex
Step 1	1	192.579	-1.678	2.398	2.982	2.336	.426
	2	184.914	-2.237	2.826	3.841	2.818	.743
	3	184.597	-2.378	2.891	4.047	2.921	.847
	4	184.596	-2.386	2.894	4.060	2.927	.853
	5	184.596	-2.386	2.894	4.060	2.927	.853

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 189,024

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients				
			Constant	Chitengwa	PatriPatri	OtherMarriageS	Sex
Step 1	1	192.579	-1.678	2.398	2.982	2.336	.426
	2	184.914	-2.237	2.826	3.841	2.818	.743
	3	184.597	-2.378	2.891	4.047	2.921	.847
	4	184.596	-2.386	2.894	4.060	2.927	.853
	5	184.596	-2.386	2.894	4.060	2.927	.853

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 189,024

d. Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4.428	1	.035
	Block	4.428	1	.035
	Model	146.643	4	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	184.596[a]	.454	.610

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

Classification Table[a]

Observed			Predicted		
			Bridepayment has been paid		Percentage Correct
			no	yes	
Step 1	Bridepayment has been paid	no	81	24	77.1
		yes	10	127	92.7
	Overall Percentage				86.0

a. The cut value is ,500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Chitengwa	2.894	.551	27.548	1	.000	18.062
	PatriPatri	4.060	.492	67.946	1	.000	57.952
	OtherMarriageS	2.927	.566	26.761	1	.000	18.668
	Sex	.853	.400	4.541	1	.033	2.348
	Constant	-2.386	.377	39.995	1	.000	.092

a. Variable(s) entered on step 1: Sex.

Block 3

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients					
			Constant	Chitengwa	PatriPatri	OtherMarriageS	Sex	Age
Step 1	1	191.629	-1.913	2.355	2.950	2.313	.412	.006
	2	183.368	-2.700	2.757	3.800	2.787	.726	.012
	3	182.957	-2.949	2.820	4.020	2.897	.836	.015
	4	182.955	-2.968	2.824	4.036	2.905	.845	.015
	5	182.955	-2.968	2.824	4.037	2.905	.845	.015

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 184.596. ***NB In the original question this was erroneously reported as 189.024***

d. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Omnibus Tests of Model Coefficients[1]

		Chi-square	df	Sig.
Step 1	Step	1.641	1	.200
	Block	1.641	1	.200
	Model	148.285	5	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	182.955[a]	.458	.614

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Bridepayment has been paid		Percentage Correct
			no	yes	
Step 1	Bridepayment has been paid	no	81	24	77.1
		yes	10	127	92.7
	Overall Percentage				86.0

a. The cut value is .500

[1] In the original question the omnibus table was in error reported as

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	6.069	2	.048
	Block	6.069	2	.048
	Model	148.285	5	.000

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Chitengwa	2.824	.554	26.009	1	.000	16.851
	PatriPatri	4.037	.494	66.708	1	.000	56.629
	OtherMarriageS	2.905	.567	26.223	1	.000	18.272
	Sex	.845	.402	4.414	1	.036	2.327
	Age	.015	.012	1.625	1	.202	1.015
	Constant	-2.968	.611	23.602	1	.000	.051

a. Variable(s) entered on step 1: Sex, Age.

Block 4

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients						
			Constant	Chitengwa	PatriPatri	OtherMarriageS	Sex	Age	Age2
Step 1	1	190.898	-2.535	2.341	2.926	2.288	.398	.039	.000
	2	182.186	-3.873	2.743	3.772	2.747	.703	.072	-.001
	3	181.702	-4.356	2.815	4.005	2.858	.815	.086	-.001
	4	181.699	-4.398	2.820	4.024	2.867	.824	.087	-.001
	5	181.699	-4.399	2.820	4.024	2.867	.824	.087	-.001

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 182.955

d. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	1.256	1	.262
	Block	1.256	1	.262
	Model	149.541	6	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	181.699[a]	.461	.618

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Bridepayment has been paid		Percentage Correct
			no	yes	
Step 1	Bridepayment has been paid	no	81	24	77.1
		yes	11	126	92.0
	Overall Percentage				85.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Chitengwa	2.820	.555	25.780	1	.000	16.776
	PatriPatri	4.024	.496	65.862	1	.000	55.944
	OtherMarriageS	2.867	.568	25.517	1	.000	17.584
	Sex	.824	.402	4.202	1	.040	2.280
	Age	.087	.065	1.793	1	.181	1.091
	Age2	-.001	.001	1.290	1	.256	.999
	Constant	-4.399	1.429	9.481	1	.002	.012

a. Variable(s) entered on step 1: Age2.

Block 5

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients								
			Constant	Chitengwa	PatriPatri	Other MarriageS	Sex	Age	Age2	SexAge	SexAge2
Step 1	1	190.055	-2.996	2.325	2.916	2.237	1.403	-.020	.000	.039	.000
	2	180.733	-4.909	2.729	3.777	2.667	2.778	-.049	.000	.081	-.001
	3	180.124	-5.736	2.810	4.040	2.776	3.441	-.067	.000	.104	-.001
	4	180.118	-5.826	2.817	4.067	2.786	3.516	-.069	.000	.107	-.001

5	180.118	-5.827	2.817	4.067	2.786	3.517	-.069	.000	.107	-.001

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 181,699

d. Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	1.580	2	.454
	Block	1.580	2	.454
	Model	151.121	8	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	180.118[a]	.464	.623

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

Classification Table[a]

			Predicted		
			Bridepayment has been paid		Percentage Correct
	Observed		no	yes	
Step 1	Bridepayment has been paid	no	81	24	77.1
		yes	12	125	91.2
	Overall Percentage				85.1

a. The cut value is ,500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Chitengwa	2.817	.557	25.527	1	.000	16.720
	PatriPatri	4.067	.504	65.106	1	.000	58.392
	OtherMarriageS	2.786	.576	23.402	1	.000	16.223
	Sex	3.517	2.903	1.468	1	.226	33.689
	Age	-.069	.202	.117	1	.733	.933
	Age2	.000	.002	.055	1	.815	1.000
	SexAge	.107	.135	.620	1	.431	1.112
	SexAge2	-.001	.001	.372	1	.542	.999
	Constant	-5.827	2.193	7.057	1	.008	.003

a. Variable(s) entered on step 1: SexAge, SexAge2.

Casewise List[b]

Case	Selected Status[a]	Observed: Bridepayment has been paid	Predicted	Predicted Group	Temporary Variable: Resid	Temporary Variable: ZResid
43	S	n**	.926	y	-.926	-3.546
58	S	n**	.924	y	-.924	-3.487
67	S	n**	.918	y	-.918	-3.342
72	S	n**	.921	y	-.921	-3.424
89	S	n**	.932	y	-.932	-3.703
93	S	y**	.037	n	.963	5.086
128	S	y**	.087	n	.913	3.236
134	S	y**	.073	n	.927	3.564
173	S	y**	.130	n	.870	2.588

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.

b. Cases with studentized residuals greater than 2,000 are listed.

Model 2: Bridal Payment according to district of residence

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	251	88.7
	Missing Cases	32	11.3
	Total	283	100.0
Unselected Cases		0	.0
Total		283	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted		
			Bridepayment has been paid		Percentage Correct
			no	yes	
Step 0	Bridepayment has been paid	no	0	108	.0
		yes	0	143	100.0
	Overall Percentage				57.0

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.281	.127	4.849	1	.028	1.324

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Rumphi	14.394	1	.000
		Mzimba	20.870	1	.000
		Kasungu	11.914	1	.001
		Dowa	18.606	1	.000
		Chiradzulu	63.003	1	.000
	Overall Statistics		164.455	5	.000

Block 1

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	202.257	5	.000
	Block	202.257	5	.000
	Model	202.257	5	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	140.807[a]	.553	.743

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Classification Table[a]

			Predicted		
			Bridepayment has been paid		Percentage Correct
	Observed		no	yes	
Step 1	Bridepayment has been paid	no	83	25	76.9
		yes	0	143	100.0
	Overall Percentage				90.0

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Rumphi	22.908	6129.380	.000	1	.997	8.885E9
	Mzimba	23.231	6129.380	.000	1	.997	1.228E10
	Kasungu	22.812	6129.380	.000	1	.997	8.077E9
	Dowa	22.861	6129.380	.000	1	.997	8.481E9
	Chiradzulu	.000	8829.279	.000	1	1.000	1.000
	Constant	-21.203	6129.380	.000	1	.997	.000

a. Variable(s) entered on step 1: Rumphi, Mzimba, Kasungu, Dowa, Chiradzulu.

VARIABLES AND SAMPLE FOR QUESTION 3

The Sample

The data for this question come from MMI's bi-annual Norwegian Monitor study from 1991. It consisted of a random sample of 2948 persons from the Norwegian population. The subsample of 2560 persons and 5 variables used here will for the purposes here be considered to be a random subsample of the original sample.

Variable descriptions

Dependent variable Question 3 *Livet på landet best*

(Life in the countryside is best)

The question put to people was „How much do you agree or disagree with the following statements. ---- Statement number 5 was: "Life in the countryside is more satisfying than life in towns." (my translation of «Livet på landet er mer tilfredsstillende enn livet i byer». The scale was:

1= Completely disagree
2= Partly disagree
3= Cannot answer
4= Partly agree
5= Completely agree

Statistics

Livet på landet best

N	Valid	2560
	Missing	0
Mean		3.16
Median		4.00
Mode		4
Minimum		1
Maximum		5

Livet på landet best

		Frequency	Percent
Valid	1	284	11.1
	2	363	14.2
	3	617	24.1
	4	1241	48.5
	5	55	2.1
	Total	2560	100.0

Explanatory variables Question 3

E.utdanning

E.utdanning = " personal education in years" is coded

- 7 = if the person has education at the primary school level (up to 8 years of education)
- 9 = if the person has education at the secondary school (ungdomsskole/ realskole) level (up to 9-10 years of education)
- 12 = if the person has education at the high school (vidregående/ gymans) level (up to 11-13 years of education)
- års skolegang)
- 14 = if the person has education at university level with more than 12 years of education + studies, but without any academic degree
- 17 = if the person has education at university level with more than 12 years of education + studies, and an academic degree

Statistics

E.utdanning

N	Valid	2560
	Missing	0
Mean		11.49
Median		12.00
Mode		12
Minimum		7
Maximum		17

E.utdanning

		Frequency	Percent
Valid	7	380	14.8
	9	563	22.0
	12	948	37.0
	14	351	13.7
	17	318	12.4
	Total	2560	100.0

E.inntekt (1000)

E.inntekt (1000) = "personal income in thousand kroner" is coded

60, if the person says his gross income is in the interval 0-60.000
90, if the person says his gross income is in the interval 60-100.000
120, if the person says his gross income is in the interval 100-130.000
145, if the person says his gross income is in the interval 130-160.000
180, if the person says his gross income is in the interval 160-200.000
240, if the person says his gross income is in the interval 200-300.000
320, if the person says his gross income is in the interval 300-400.000
400, if the person says his gross income is in the interval 400.000+...

Statistics

E.inntekt (1000)

N	Valid	2560
	Missing	0
Mean		151.51
Median		150.00
Mode		60
Minimum		60
Maximum		450

E.inntekt (1000)

		Frequency	Percent
Valid	60	585	22.9
	90	388	15.2
	120	251	9.8
	150	372	14.5
	180	424	16.6
	250	390	15.2
	350	94	3.7
	450	56	2.2
	Total	2560	100.0

Kvinne

Kvinne = Woman if coded 1, man if coded 0

Kvinne

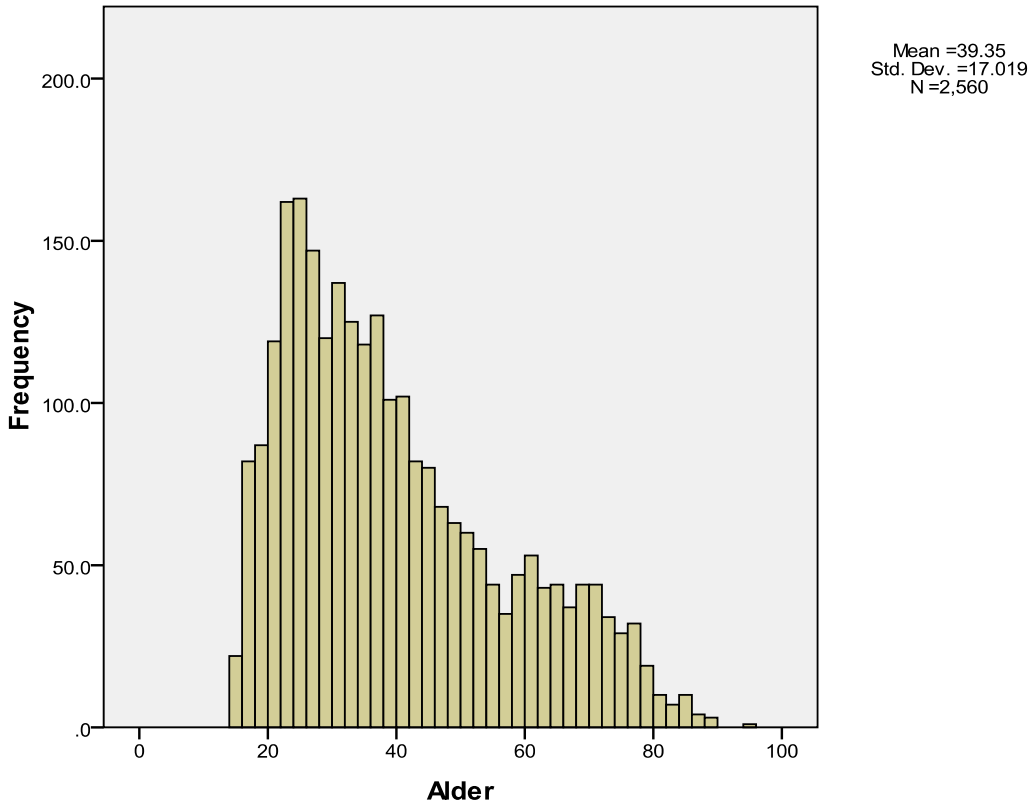
		Frequency	Percent
Valid	0	1293	50.5
	1	1267	49.5
	Total	2560	100.0

Alder

Alder = age in years

Descriptive Statistics

	N	Minimum	Maximum	Mean
Alder	2560	15	94	39.35
Valid N (listwise)	2560			



Tables for Question 3

Question 3 Model 1 (Dependent Variable: Livet på landet best)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.257[a]	.066	.065	1.028

a. Predictors: (Constant), Kvinne, E.utdanning, Alder, E.inntekt (1000)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	191.358	4	47.839	45.275	.000[a]
	Residual	2699.736	2555	1.057		
	Total	2891.094	2559			

a. Predictors: (Constant), Kvinne, E.utdanning, Alder, E.inntekt (1000)

b. Dependent Variable: Livet på landet best

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.815	.114		33.481	.000
	E.inntekt (1000)	-.001	.000	-.074	-3.416	.001
	E.utdanning	-.063	.008	-.180	-8.331	.000
	Alder	.006	.001	.102	4.948	.000
	Kvinne	-.074	.043	-.035	-1.707	.088

a. Dependent Variable: Livet på landet best

Question 3 Model 2 (Dependent Variable: Livet på landet best)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239[a]	.057	.056	1.033

a. Predictors: (Constant), Kvinne, E.utdanning, E.inntekt (1000)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	165.484	3	55.161	51.729	.000[a]
	Residual	2725.610	2556	1.066		
	Total	2891.094	2559			

a. Predictors: (Constant), Kvinne, E.utdanning, E.inntekt (1000)

b. Dependent Variable: Livet på landet best

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.185	.086		48.498	.000
	E.inntekt (1000)	-.001	.000	-.055	-2.568	.010
	E.utdanning	-.077	.007	-.218	-10.799	.000
	Kvinne	-.073	.043	-.034	-1.673	.094

a. Dependent Variable: Livet på landet best

Question 3 Model 3 (Dependent Variable: Livet på landet best)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.255[a]	.065	.064	1.028

a. Predictors: (Constant), Alder, E.inntekt (1000), E.utdanning

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	188.281	3	62.760	59.351	.000[a]
	Residual	2702.813	2556	1.057		
	Total	2891.094	2559			

a. Predictors: (Constant), Alder, E.inntekt (1000), E.utdanning

b. Dependent Variable: Livet på landet best

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.767	.110		34.094	.000
	E.inntekt (1000)	-.001	.000	-.062	-3.018	.003
	E.utdanning	-.064	.008	-.182	-8.477	.000
	Alder	.006	.001	.102	4.938	.000

a. Dependent Variable: Livet på landet best

Question 3 Model 4 (Dependent Variable: E.inntekt (1000))

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.468[a]	.219	.218	77.050

a. Predictors: (Constant), Kvinne, E.utdanning, Alder

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4262802.712	3	1420934.237	239.348	.000[a]
	Residual	1.517E7	2556	5936.689		
	Total	1.944E7	2559			

a. Predictors: (Constant), Kvinne, E.utdanning, Alder

b. Dependent Variable: E.inntekt (1000)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	29.968	8.520		3.517	.000
	E.utdanning	9.974	.534	.345	18.668	.000
	Alder	.862	.095	.168	9.103	.000
	Kvinne	-54.601	3.052	-.313	-17.888	.000

a. Dependent Variable: E.inntekt (1000)

Question 3 Model 5 (Dependent Variable: E.inntekt (1000))

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.440[a]	.194	.193	78.273

a. Predictors: (Constant), Kvinne, E.utdanning

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3770915.030	2	1885457.515	307.743	.000[a]
	Residual	1.567E7	2557	6126.736		
	Total	1.944E7	2559			

a. Predictors: (Constant), Kvinne, E.utdanning

b. Dependent Variable: E.inntekt (1000)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	82.831	6.332		13.080	.000
	E.utdanning	8.396	.513	.290	16.354	.000
	Kvinne	-56.215	3.096	-.323	-18.160	.000

a. Dependent Variable: E.inntekt (1000)

Question 3 Model 6 (Dependent Variable: E.inntekt (1000))

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.349[a]	.122	.121	81.715

a. Predictors: (Constant), Alder, E.utdanning

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2363148.145	2	1181574.073	176.954	.000[a]
	Residual	1.707E7	2557	6677.290		
	Total	1.944E7	2559			

a. Predictors: (Constant), Alder, E.utdanning

b. Dependent Variable: E.inntekt (1000)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.096	8.779		-.694	.488
	E.utdanning	10.424	.566	.361	18.416	.000
	Alder	.961	.100	.188	9.579	.000

a. Dependent Variable: E.inntekt (1000)

Question 3 Model 7 (Dependent Variable: E.utdanning)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.326[a]	.106	.105	2.852

a. Predictors: (Constant), Kvinne, Alder

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2467.677	2	1233.838	151.707	.000[a]
	Residual	20796.211	2557	8.133		
	Total	23263.887	2559			

a. Predictors: (Constant), Kvinne, Alder

b. Dependent Variable: E.utdanning

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.890	.155		89.684	.000
	Alder	-.058	.003	-.325	-17.346	.000
	Kvinne	-.269	.113	-.045	-2.380	.017

a. Dependent Variable: E.utdanning

Question 3 Model 8 (Dependent Variable: E.utdanning)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.030[a]	.001	.000	3.014

a. Predictors: (Constant), Kvinne

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.697	1	20.697	2.278	.131[a]
	Residual	23243.190	2558	9.086		
	Total	23263.887	2559			

a. Predictors: (Constant), Kvinne

b. Dependent Variable: E.utdanning

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.582	.084		138.165	.000
	Kvinne	-.180	.119	-.030	-1.509	.131

a. Dependent Variable: E.utdanning

Question 3 Model 9 (Dependent Variable: E.utdanning)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.323[a]	.104	.104	2.854

a. Predictors: (Constant), Alder

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2421.591	1	2421.591	297.205	.000[a]
	Residual	20842.296	2558	8.148		
	Total	23263.887	2559			

a. Predictors: (Constant), Alder

b. Dependent Variable: E.utdanning

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.743	.142		96.677	.000
	Alder	-.057	.003	-.323	-17.240	.000

a. Dependent Variable: E.utdanning