

Report on survey of Expert assessments of e-business in SSA

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Executive summary

In summer 2003, the research team on Sub-Saharan Africa at Louisiana State University in Baton Rouge, USA investigated experts' perceptions on the most pertinent issues affecting the success of electronic business in Sub-Saharan Africa (SSA). Mr. Hamadoun Touré, the Director of the International Telecommunication Union's Bureau of Development, has affirmed that this study could contribute towards achieving one of ITU-D's goals of harnessing the potentials of ICTs for socioeconomic development of developing countries. We hope that business managers, policy makers, and government and NGO officials can use the results of this study in furthering the development of e-business in SSA.

Chitu Okoli, now at Concordia University in Montréal, Canada, conducted this survey for his doctoral dissertation at Louisiana State University, which he successfully defended on October 13, 2003. Dr. Victor Mbarika chaired the dissertation. This document reports the results of the survey, but it does not discuss them. The dissertation reports the study from a scholarly perspective in far more detail, giving both methodological details of the study (chapters 3 and 4) and discussing in-depth the theoretical meaning and implications of the results (chapters 2 and 5). This dissertation is freely available on the World Wide Web at:

<http://etd02.lnx390.lsu.edu/docs/available/etd-1021103-111509/>

Before conducting the actual survey, we conducted a pilot (test) survey to refine our questionnaire and administration procedure. We sent the survey to 402 e-mail addresses in April and May 2003 for the pilot survey, and obtained 48 completed responses. Based on these responses, we modified the survey to be more valid and reflective of what we are actually trying to discover. We do not report any results from the pilot test here, but they are available in the full dissertation report.

For the main study, which we report here, we sent the questionnaire by e-mail to 1,092 expert contact from May to July 2003, We sent two e-mail reminders and one reminder by postal mail to those whom we had not heard from. By the conclusion of the survey in August 2003, we eventually received 158 responses; however, only 147 were sufficiently complete for us to use for our analysis.

This report is available on the WWW at

<http://chitu.okoli.org/mis/research/dissertation/report.html>.

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Demographic questions

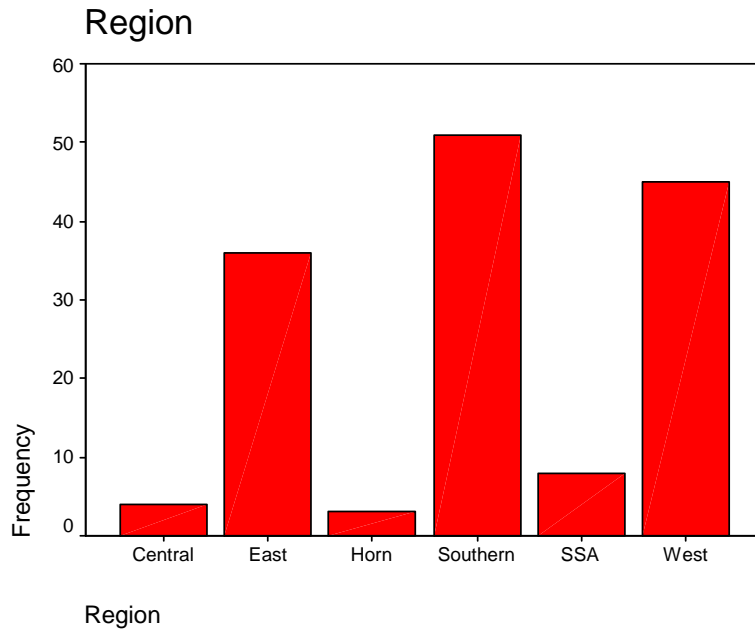
Categorical demographic questions

Country/region for which the experts responded to the survey questions

Geo-economic sub-regions of Sub-Saharan Africa

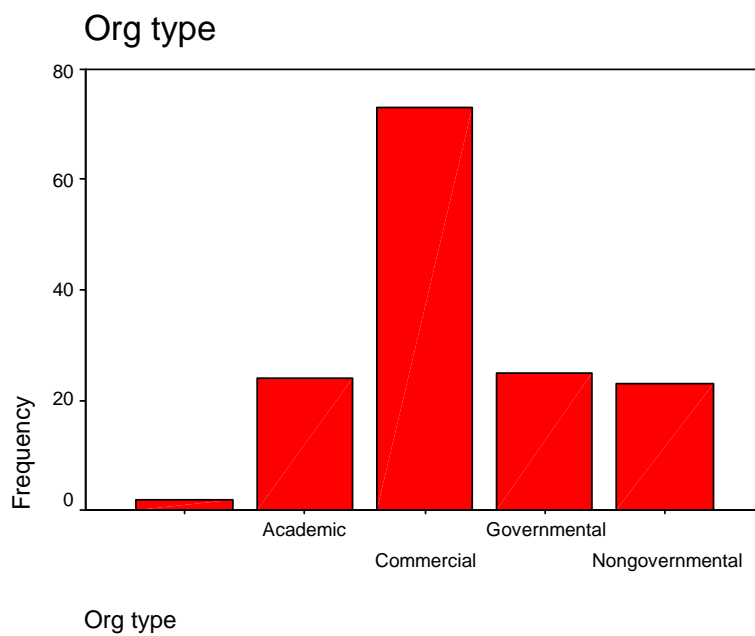
Central Africa and Great Lakes	Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo (Zaire), Equatorial Guinea, Gabon, Rwanda, Sao Tome and Principe
East Africa	Kenya, Sudan, Tanzania, Uganda
Horn of Africa	Djibouti, Eritrea, Ethiopia, Somalia
Southern Africa	Angola, Botswana, Comoros, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Swaziland, Zambia, Zimbabwe
West Africa	Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea Bissau, Ivory Coast, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo

Region	Country	N	%
Responded for all of SSA		8	5.4
	Chad	1	0.7
	Gabon	1	0.7
	Rwanda	3	2.0
Central Africa		5	3.4
	East Africa	2	1.4
	Kenya	22	15.0
	Sudan	3	2.0
	Tanzania	6	4.1
	Uganda	3	2.0
East Africa		36	24.5
	Horn of Africa	1	0.7
	Eritrea	1	0.7
	Ethiopia	1	0.7
Horn of Africa		3	2.0
	Southern Africa	13	8.8
	Botswana	2	1.4
	Madagascar	2	1.4
	Malawi	3	2.0
	Mauritius	3	2.0
	Mozambique	7	4.8
	Namibia	5	3.4
	Seychelles	1	0.7
	Swaziland	1	0.7
	Zambia	7	4.8
	Zimbabwe	7	4.8
Southern Africa		51	34.7
	Benin	1	0.7
	Burkina Faso	1	0.7
	Cote d'Ivoire (Ivory Coast)	3	2.0
	Gambia	2	1.4
	Ghana	11	7.5
	Guinea	2	1.4
	Mali	2	1.4
	Niger	1	0.7
	Nigeria	18	12.2
	Senegal	2	1.4
	West Africa	1	0.7
West Africa		44	29.9
Total		147	100.0



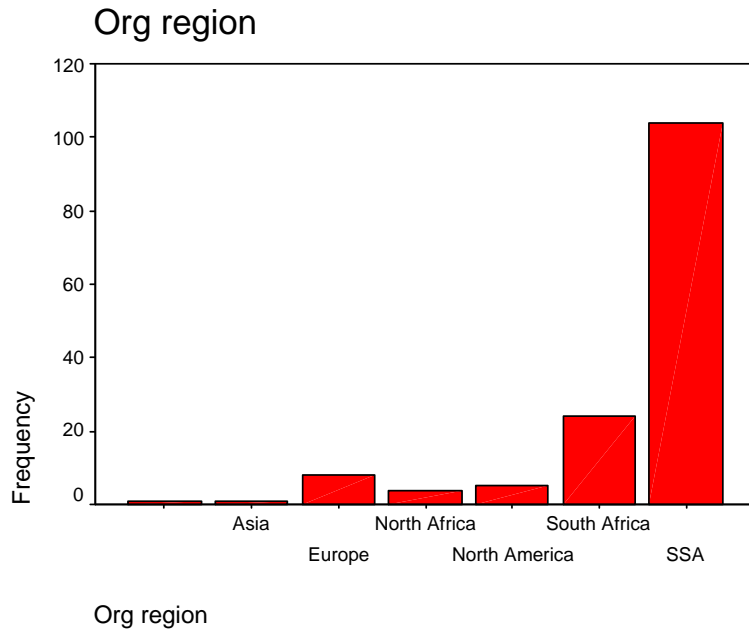
Type of organization to which expert belongs

Organization type	N	%
Academic	24	16.6
Commercial	73	50.3
Governmental	25	17.2
Nongovernmental	23	15.9
Total	145	100.0



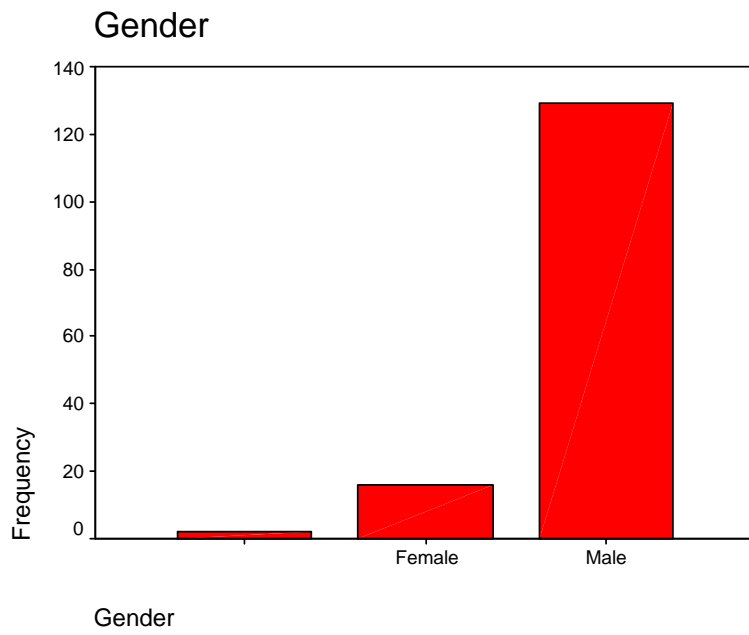
Country in which expert's *organization* is based

Org region	Org country	N	%
	India	1	0.7
	Laos	1	0.7
Asia		2	1.4
	France	2	1.4
	United Kingdom	3	2.1
	Switzerland	1	0.7
	Norway	1	0.7
	Netherlands	1	0.7
Europe		8	5.5
	Egypt	1	0.7
	Morocco	3	2.1
North Africa		4	2.7
	United States of America	5	3.4
North America		5	3.4
Republic of South Africa		24	16.4
	Benin	1	0.7
	Botswana	2	1.4
	Burkina Faso	1	0.7
	Côte d'Ivoire	1	0.7
	Djibouti	1	0.7
	Eritrea	1	0.7
	Ethiopia	1	0.7
	Gambia	2	1.4
	Ghana	8	5.5
	Kenya	18	12.3
	Madagascar	2	1.4
	Malawi	3	2.1
	Mali	2	1.4
	Mauritius	3	2.1
	Mozambique	6	4.1
	Namibia	4	2.7
	Niger	1	0.7
	Nigeria	18	12.3
	Rwanda	1	0.7
	Senegal	2	1.4
	Seychelles	1	0.7
	Sudan	3	2.1
	Swaziland	1	0.7
	Tanzania	7	4.8
	Uganda	3	2.1
	Zambia	5	3.4
	Zimbabwe	5	3.4
SSA		104	71.2
Total		146	100.0



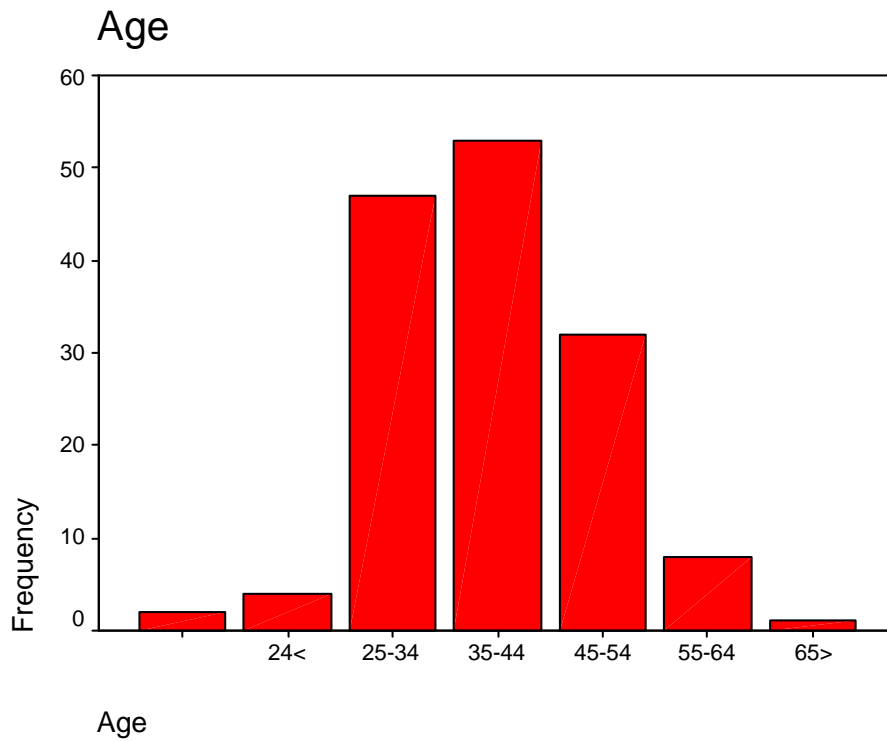
Gender of expert

Gender	N	%
Female	16	11.0
Male	129	89.0
Total	145	100.0



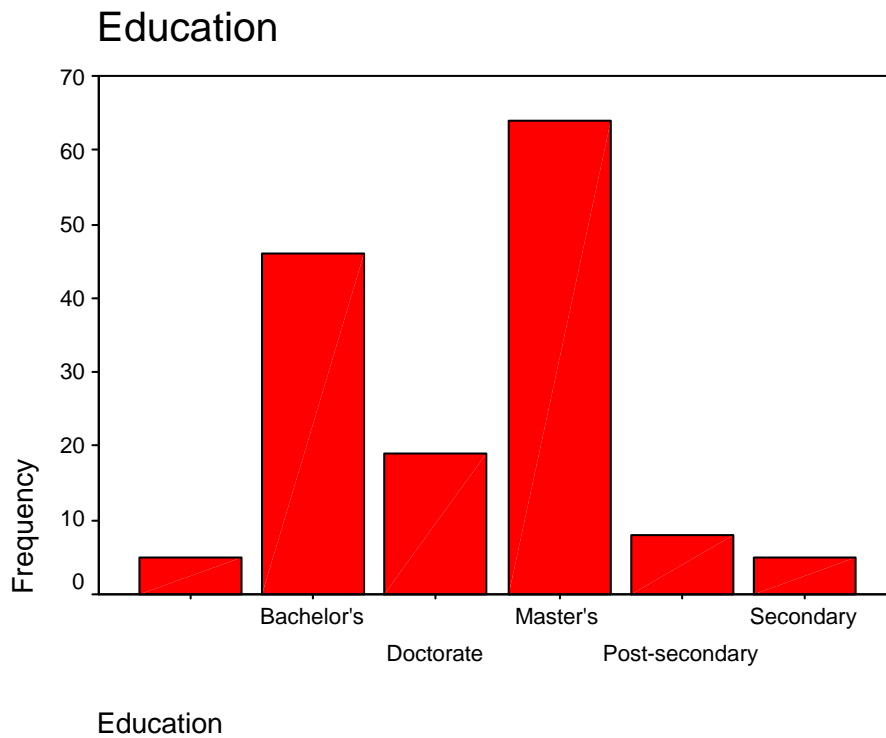
Age range of expert

Age	N	%
24<	4	2.8
25-34	47	32.4
35-44	53	36.6
45-54	32	22.1
55-64	8	5.5
65>	1	0.7
Total	145	100.0



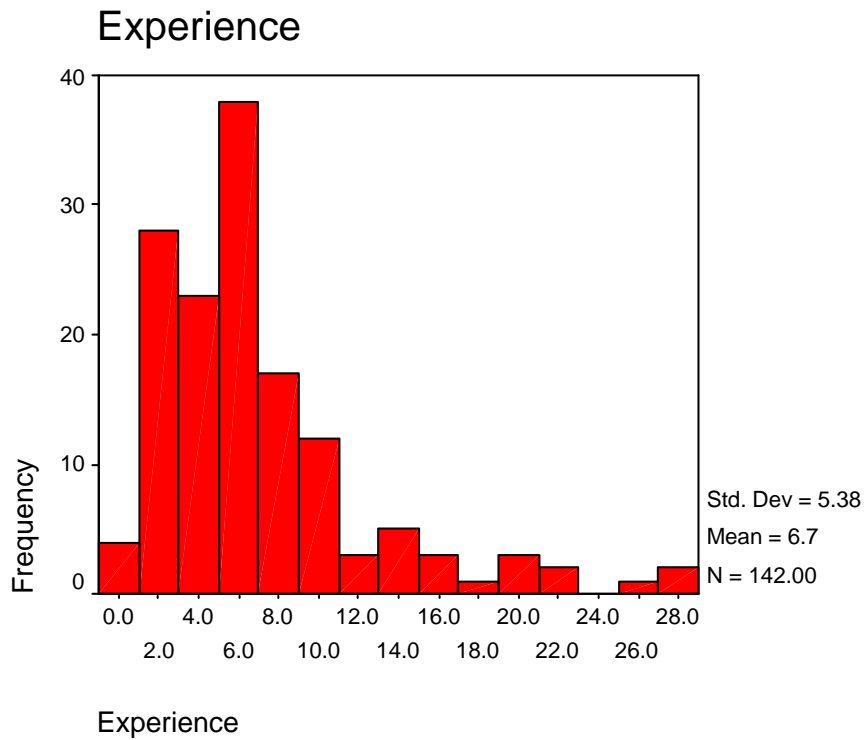
Highest education level expert has attained

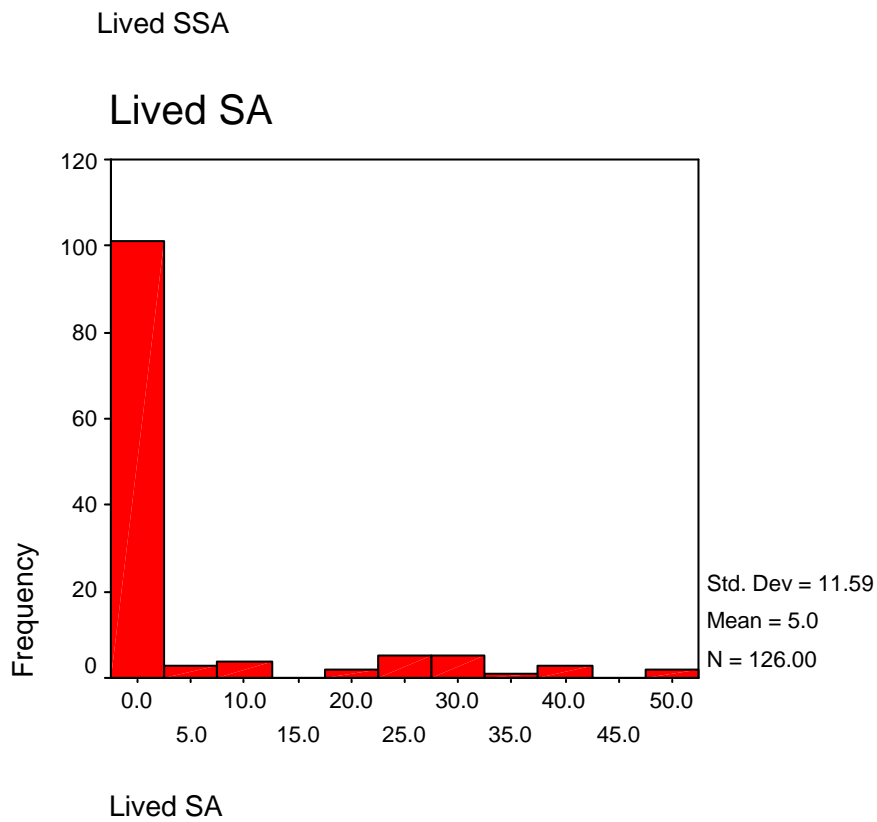
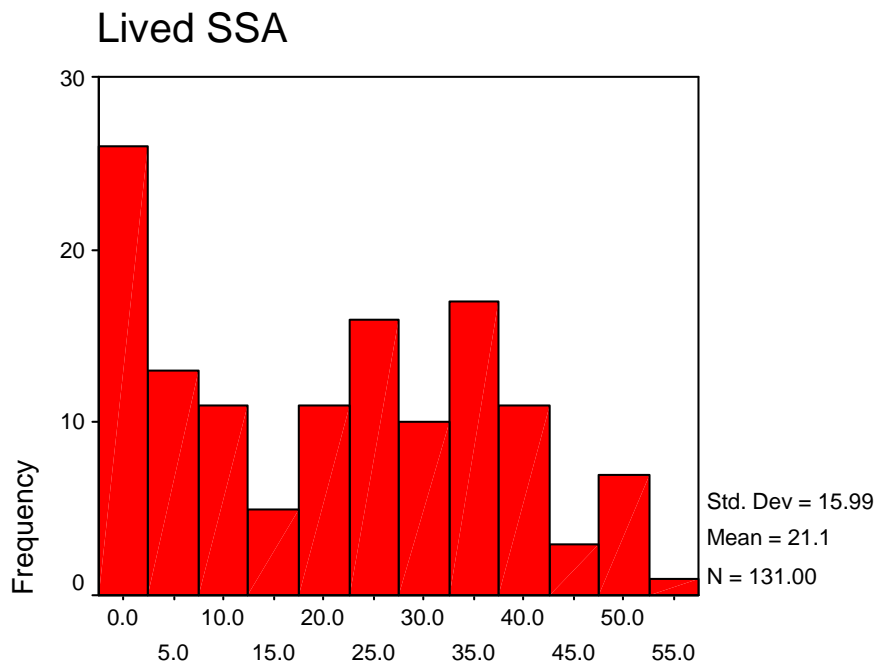
Education	N	%
Bachelor's	46	32.4
Doctorate	19	13.4
Master's	64	45.1
Post-secondary	8	5.6
Secondary	5	3.5
Total	142	100.0

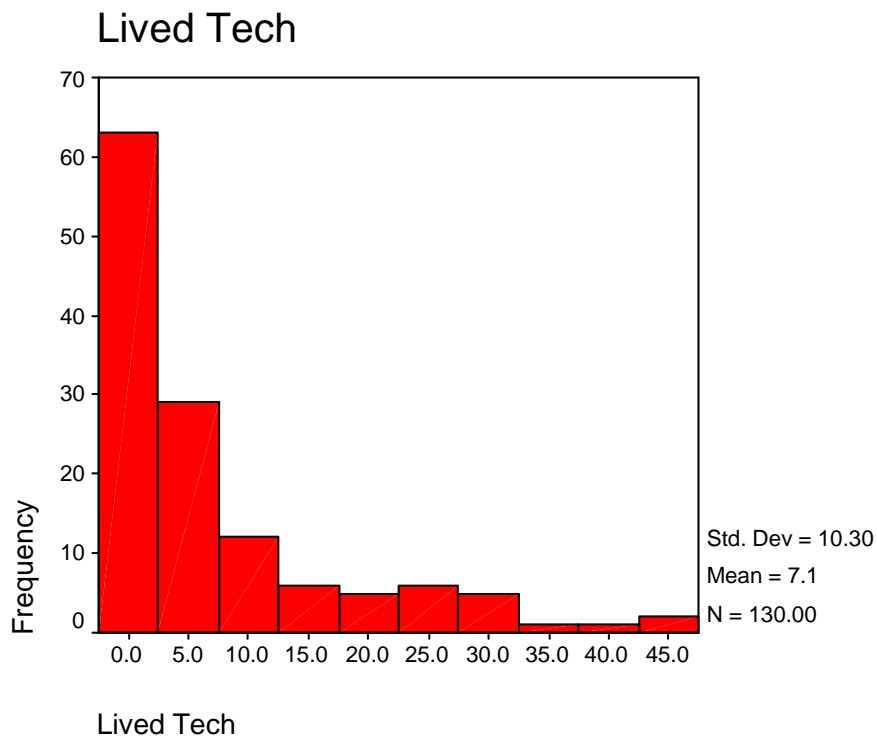
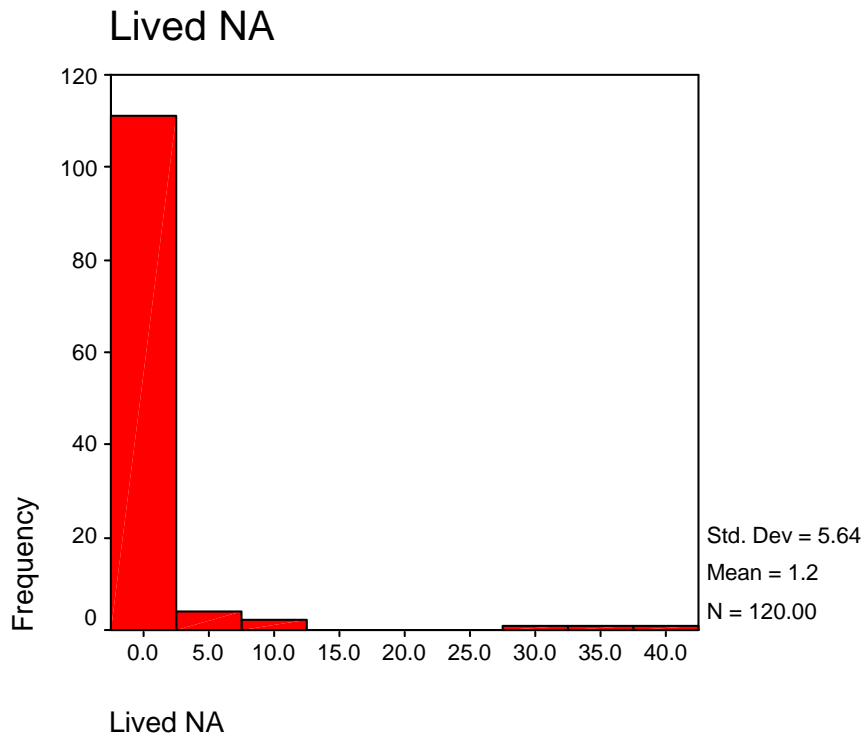


Numeric demographic questions

	N	Min	Max	Mean	Median	σ
Years of experience with e-business in SSA (Experience)	142	0	28	6.71	5	5.38
Years lived in Sub-Saharan Africa (Lived SSA)	131	0	54	21.09	22	15.99
Years lived in Republic of South Africa (Lived SA)	126	0	50	5.01	0	11.59
Years lived in North Africa (Lived NA)	120	0	40	1.23	0	5.64
Years in technologically-advanced countries (Lived Tech)	130	0	47	7.12	3	10.30







Actual survey questions on e-business in SSA

Survey questions and codes

Concept	Code	Question
E-business Outcomes	EB	
E-Business Capabilities	EBC	Capabilities: Please indicate how much you agree or disagree that urban SME businesses in your country will have the following e-business capabilities by the end of 2004 .
	EBCI	Information: Product information will be available online for business customers, including product search capabilities.
	EBCT	Transaction: Business customers will be able to use websites to place, track, and review orders.
	EBCX	Interaction: Business customers will be able to manage online accounts, customize their view of the website, and conduct real-time chat with customer service representatives.
	EBCS	Supplier connection: Businesses will place online orders from suppliers, use electronic data interchange (EDI), and electronically share inventory information with suppliers and business partners.
	EBCN	Intranet: Within a business, employees will be able to use the Internet to share information internally, communicate with each other, and run applications.
E-Business Value	EBV	Value impacts: Please indicate how much you agree or disagree with these statements about the impacts of e-business in the context of urban SME businesses in your country.
	EBVR	E-business activity will increase revenues .
	EBVC	E-business activity will save costs .
	EBVT	E-business activity will save employees' time and effort .
	EBVJN	E-business activity will result in new jobs in your country.
	EBVJL	E-business activity will result in people losing their jobs in your country.
ICT Policies	IP	How much do you agree or disagree with the following statements about current policies concerning ICTs in your country?
General ICT Policies	IPIR	Some policies influence information and communication technologies (ICTs) by encouraging or setting a trend, whereas others regulate ICTs by implementing and enforcing definite laws. Some policies target the supply of ICTs by focusing on organizations that create and provide ICTs, whereas others target the demand for ICTs by focusing on people and organizations that use them.
	IPIS	The government influences the supply of ICTs (for example: by funding ICT research and innovation; providing educational and training services; and subsidizing ICT development).
	IPID	The government influences the demand for ICTs (for example: by providing skill training; subsidizing the costs of purchasing ICTs; and providing programs for ICT awareness and promotion).
	IPRS	The government regulates the supply of ICTs (for example: by requiring computer education; removing economic barriers to ICT trade and innovation; and establishing standards and requirements for research and development in ICTs).

Concept	Code	Question
	IPRD	The government regulates the demand for ICTs (for example: by requiring specific ICT-related standards, products or processes be used by government agencies or businesses with government contracts).
	IPP	Privatization and liberalization: The government gives ownership and control of telecommunications provision to private enterprises, and private enterprises can freely compete in the mobile phone, ICT and ISP markets.
E-business Policies	IPE	
	IPEP	E-business promotion: The government generally supports and actively promotes the practice of e-business.
	IPEI	Intellectual property rights: The government actively enforces the protection of patents, copyrights, trademarks, and other intellectual property rights.
	IPEU	E-business user rights: E-business users have well-defined and actively-enforced legal rights when engaging in e-business regarding purchase protection and privacy.
	IPEA	Awareness of e-business: People are generally aware of the concept and benefits of electronic business.
ICT Infrastructure	II	How much do you agree or disagree with the following statements about the current state of infrastructure for information and communication technologies in urban cities in your country?
	IITB	There is an adequate number of national and international trunk/backbone (long distance) phone and data circuits.
	IIE	There is a steady supply of electrical power , whether by national grids or backup electrical generators.
	IIW	There is an adequate number of ICT workers skilled in developing and maintaining ICTs, training others how to use ICTs, and managing ICT infrastructures.
	IIVN	There is an adequate number of wireless networks , such as VSAT, satellite and microwave links.
	IIP	Urban citizens have adequate access to phone services , whether land telephone lines, mobile/cellular phones, or payphones.
	III	Urban citizens have adequate access to the Internet , whether from home, work, Internet cafes, telecenters, or other locations.
	IIISP	There is an adequate number of Internet service providers (ISPs) for the number of citizens.
	IIA	Computers, networks, Internet access, and other ICTs are affordable for most urban SME businesses.
	IIQ	The ICT equipment and services available to urban SME businesses are generally of high quality .
Institutions and Commerce	IC	
Commercial Infrastructure	ICC	How much do you agree or disagree with the following statements about the general commercial environment in your country?
	ICCC	Corruption: Bribery and corruption are rare when dealing with the government or businesses in relation to contracts, loans, licenses, tax assessments, fines, and other necessary services.
	ICCD*	Which of the following descriptions most adequately reflects the distribution environment for physical products in your country? (See key below for listing of the options for this question.)
	ICCP	Electronic payment systems: Banks support electronic merchant payment systems such as credit and debit cards.
Institutions	ICI	How much do you agree or disagree with the following statements about governance institutions in your country?

Concept	Code	Question
	ICIV	Voice and accountability: Citizens can freely choose their government. They can exercise political rights and civil liberties, and the press is independent from government control.
	ICIB	Government regulation and bureaucracy: The government does not control goods markets, interfere with the banking system, nor excessively regulate or control private business and international trade.
	ICIR	Risk of repudiation: There is a low risk that the government will modify its contracts by scaling them down, postponing them, or outright repudiating them.
	ICIL	Rule of law: The government justly enforces contracts, and protects individuals and businesses against violence, theft and fraud.
ICT Transfer Implementation	TI	How much do you agree or disagree with the following statements about implementation factors for a typical ICT project (especially e-business) in urban SME businesses in your country?
	TITM	Top managers support the project by word and action.
	TIUI	Users are closely involved in the design and development of the system.
	TIUT	Users are computer literate and they are adequately trained in using the system.
	TIPC	There is at least one person (not necessarily a top manager) who purposefully champions the project by encouraging and advocating it.
	TISD	The systems development team is skilled in the pertinent technologies.
Culture-Specific Beliefs and Values	C	Please indicate how much you agree or disagree with these statements about the work environment in urban SME businesses that implement or consider implementing ICTs (such as e-business) in your country.
Uncertainty Avoidance	CUA	
	CUAT	Business employees generally do not trust ICTs or e-business.
	CUAS	Business employees are generally concerned about data security when considering using ICTs.
	CUAP	Managers typically prefer to adopt ICTs or e-business only if it has been proven to be effective.
	CUAN	Managers are usually hesitant to attempt new ICT or e-business applications.
Power Distance	CPD	
	CPDP	Managers frequently use their authority and power when dealing with subordinates.
	CPDD	Managers do not usually delegate important tasks to employees.
	CPDA	Subordinates are usually afraid to express disagreement with their superiors.
	CPDS	Managers generally avoid off-the-job social contacts with employees.
Technology Culturation	CTC	Please indicate how much you agree or disagree with the following statements about the amount and nature of travel for managers of ICTs or e-business in urban SME businesses in your country. <i>(For these questions, include the Republic of South Africa as a “technologically-advanced” country.)</i>
	CTCB	Most have traveled to a technologically-advanced country for business purposes .
	CPCP	Most have traveled to a technologically-advanced country for personal (non-business) purposes .

Concept	Code	Question
	CPCS	Most have attended a computer-related conference either within Sub-Saharan Africa or in another developing country.
	CPCT	Most have attended a computer-related conference in a technologically-advanced country.

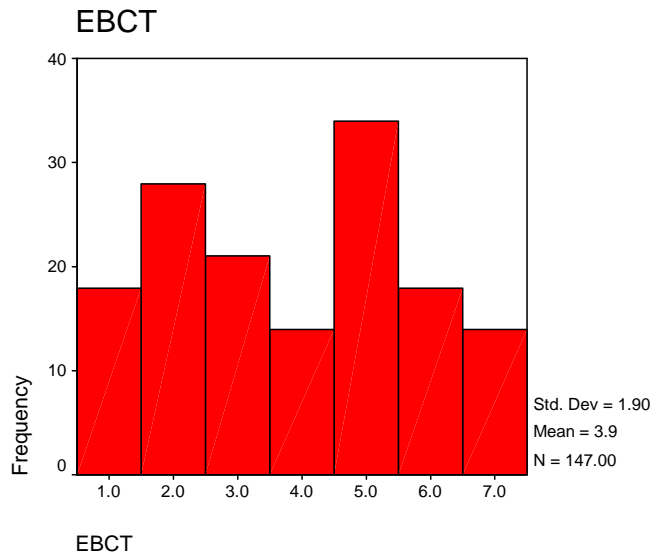
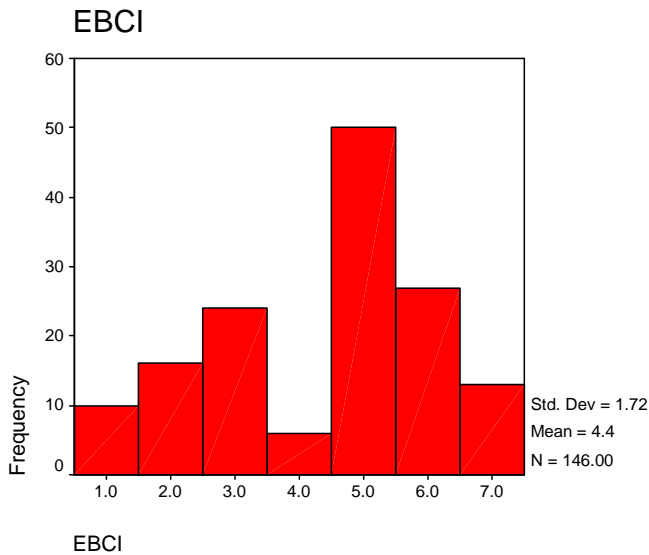
Question responses*

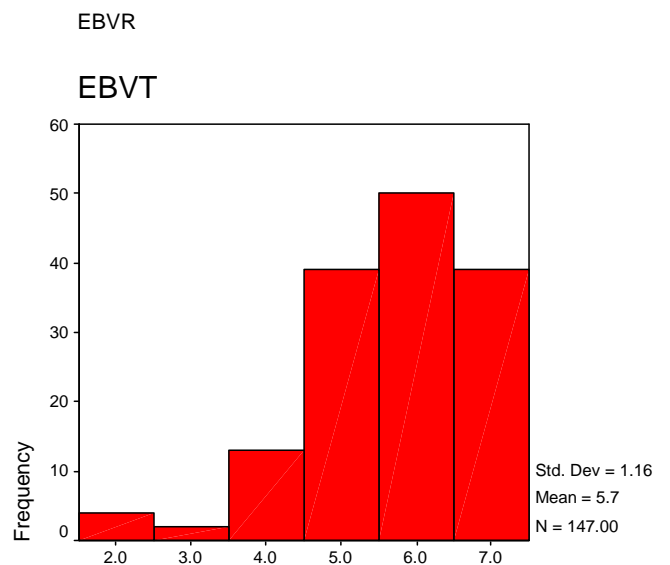
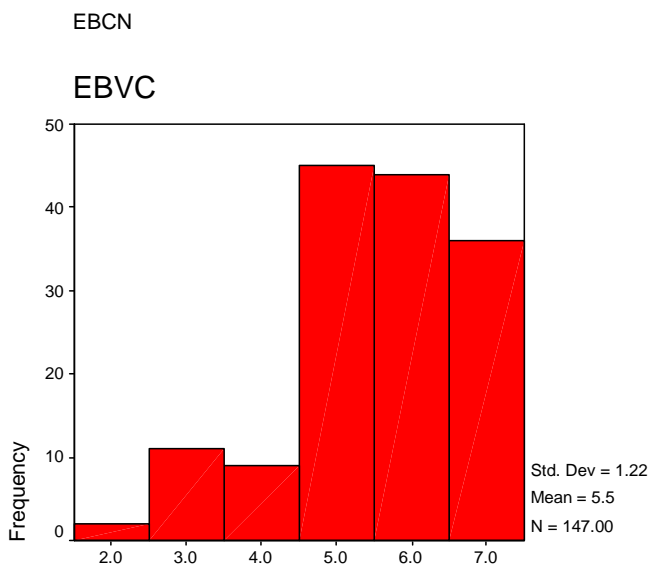
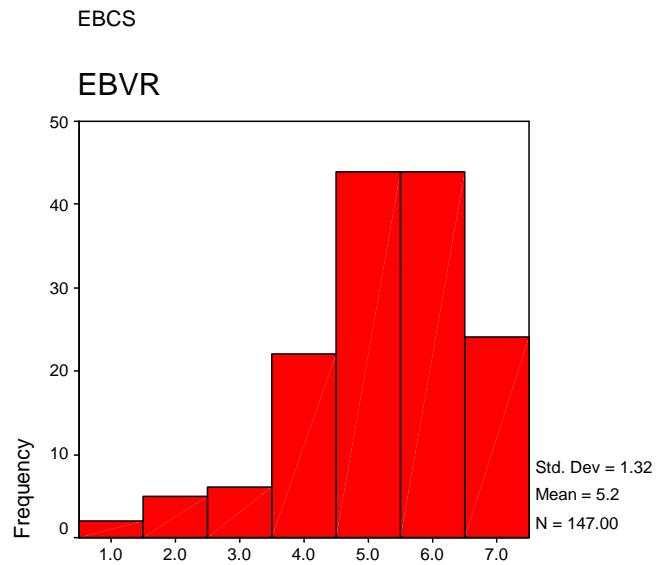
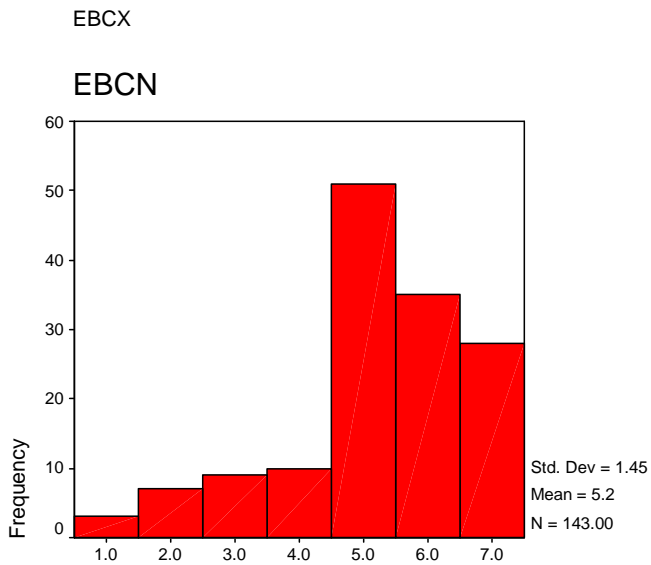
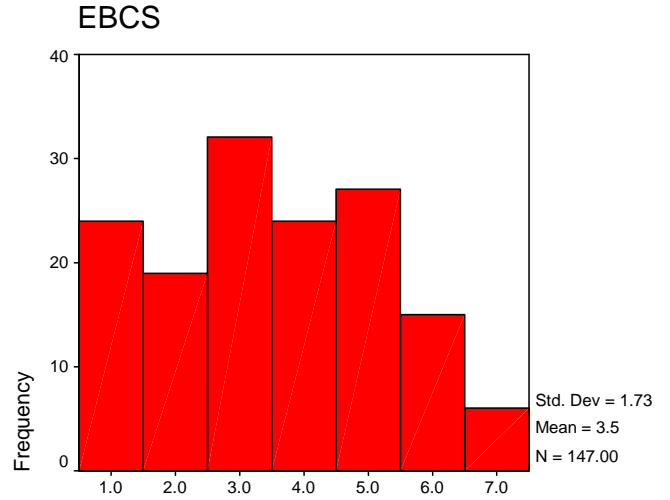
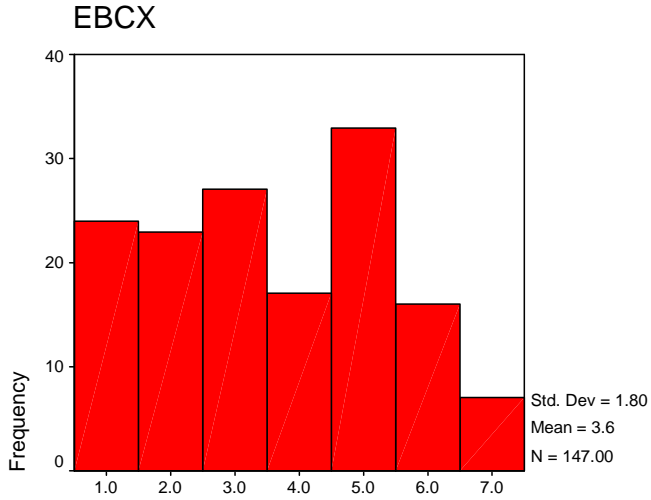
	N	Min	Max	Mean	Median	Mode	σ
EBCI	146	1	7	4.39	5	5	1.724
EBCT	147	1	7	3.87	4	5	1.895
EBCX	147	1	7	3.60	3	5	1.797
EBCS	147	1	7	3.54	3	3	1.725
EBCN	143	1	7	5.21	5	5	1.448
EBVR	147	1	7	5.24	5	5,6	1.321
EBVC	147	2	7	5.54	6	5	1.218
EBVT	147	2	7	5.67	6	6	1.160
EBVJN	146	1	7	5.33	5	5	1.308
EBVJL	147	1	7	3.83	4	3	1.644
IPIS	146	1	7	4.15	5	5	1.998
IPID	146	1	7	3.97	4	5	1.840
IPRS	146	1	7	4.18	5	5	1.833
IPRD	146	1	7	3.95	4	3	1.790
IPP	146	1	7	4.52	5	6	1.938
IPEP	144	1	7	4.10	4	5	1.735
IPEI	145	1	7	3.81	4	3	1.867
IPEU	145	1	7	3.19	3	1	1.760
IPEA	145	1	7	3.72	4	5	1.627
IITB	147	1	7	3.34	3	1	1.978
IIE	146	1	7	3.64	3	3	1.919
IIIW	147	1	7	3.58	3	3	1.724
IIWN	147	1	7	3.25	3	2,3	1.621
IIP	146	1	7	4.16	5	5	1.814
III	142	1	7	3.78	4	5	1.743
IIA	145	1	7	3.11	3	2	1.625
IIQ	146	1	7	3.85	4	5	1.625
ICIV	147	1	7	4.71	5	5,6	1.756
ICIB	146	1	7	4.08	4	3	1.704
ICIR	147	1	7	4.16	4	4	1.658
ICIL	146	1	7	4.31	4	4	1.837
ICCC	147	1	7	3.03	3	1	1.761
ICCP	147	1	7	4.17	5	5	1.956
ICCD	145	1	5	2.85	3	2	1.082
TITM	145	1	7	4.47	5	5	1.344
TIUI	145	1	7	3.83	4	3	1.450
TIUT	144	1	7	3.88	4	5	1.465
TIPC	145	1	7	5.01	5	5	1.236
TISD	145	1	7	4.54	5	5	1.434
CUAT	147	1	7	3.75	4	3	1.364
CUAS	147	1	7	4.76	5	5	1.560
CUAP	147	1	7	5.14	5	5	1.327
CUAN	147	1	7	4.83	5	5	1.326
CPDP	146	1	7	5.38	6	6	1.210
CPDD	145	1	7	4.70	5	5	1.385
CPDA	145	1	7	5.06	5	5	1.461
CTCB	146	1	7	4.92	5	5	1.392
CTCP	145	1	7	4.61	5	5	1.420
CTCS	146	1	7	4.64	5	5	1.404
CTCT	144	1	7	4.36	5	5	1.461

***Key to question scores**

Almost all questions were on a 7-point scale scored 1 to 7. However, ICCD was five-point, scored 1 to 5.	
	<p>Regular items:</p> <ul style="list-style-type: none"> ○ Strongly disagree (1.0) ○ Disagree (2.0) ○ Somewhat disagree (3.0) ○ Neutral (4.0) ○ Somewhat agree (5.0) ○ Agree (6.0) ○ Strongly agree (7.0)
ICCD	<p>Which of the following descriptions most adequately reflects the distribution environment for physical products in your country?</p> <ul style="list-style-type: none"> ○ Poor: (1.0) Basic postal services sparse and expensive. Road infrastructure seriously deficient even in larger cities. Airfreight services unavailable or prohibitively expensive. ○ Substandard: (2.0) Basic postal services available but not reliable. Road infrastructure passable in larger cities, but does not reach remote areas. Airfreight services very expensive and infrequent. ○ Fair: (3.0) Postal services well developed. Main cities linked by reliable road infrastructure. Airfreight services regular though still infrequent. ○ Good: (4.0) Private delivery services available as alternative to traditional postal service. Roads to most locations in good condition. Regular and continuous airfreight services. ○ Excellent: (5.0) Delivery services widely available. Airfreight well developed. Cities and towns well connected by highways and/or secondary roads. Sophisticated, specialized, distribution services.

Question response charts





EBCX

EBCS

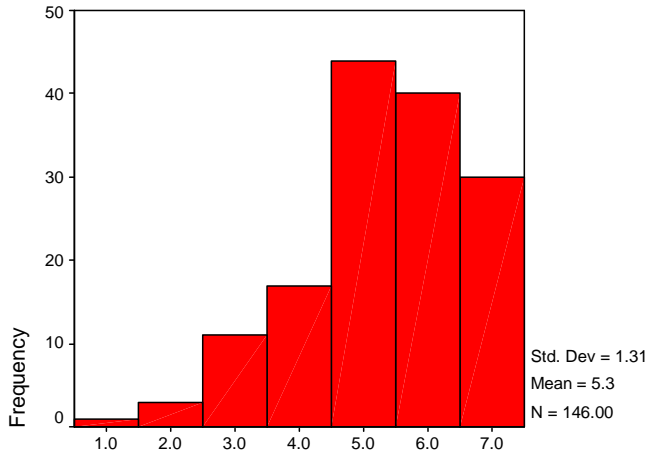
EBCN

EBVR

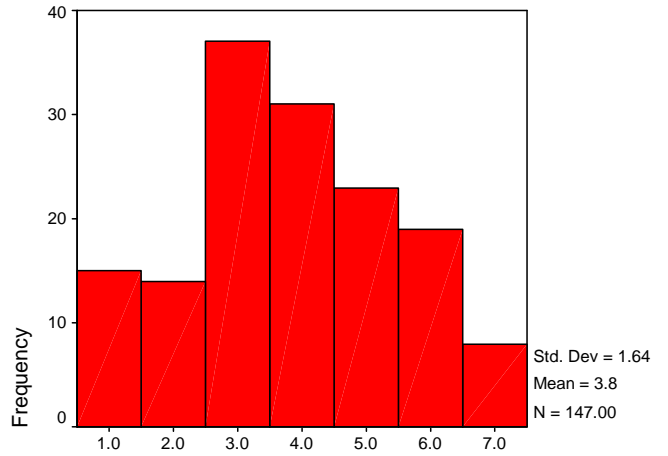
EBVC

EBVT

EBVJN



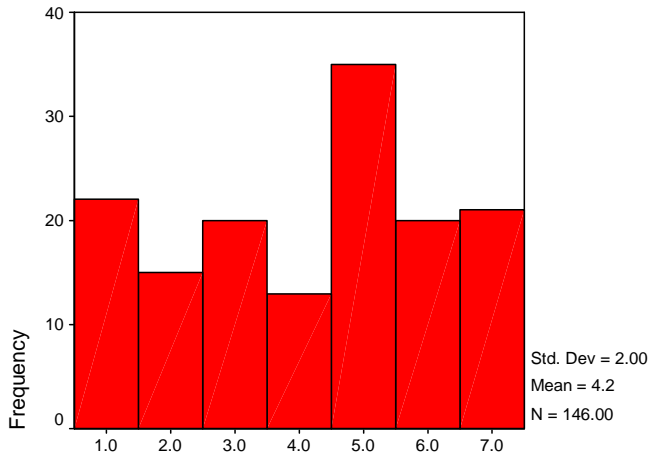
EBVJL



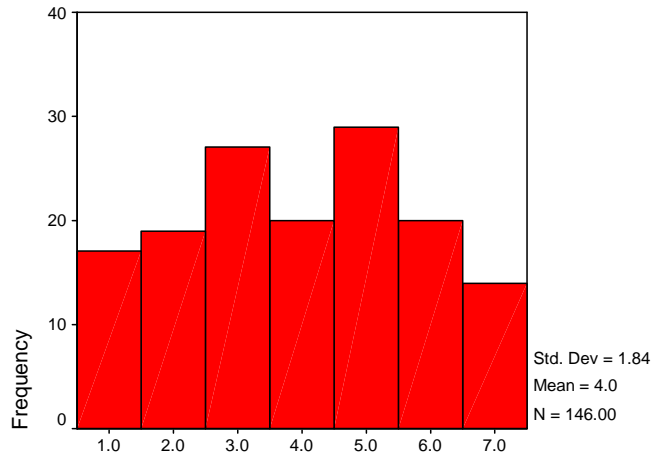
EBVJN

EBVJL

IPIS



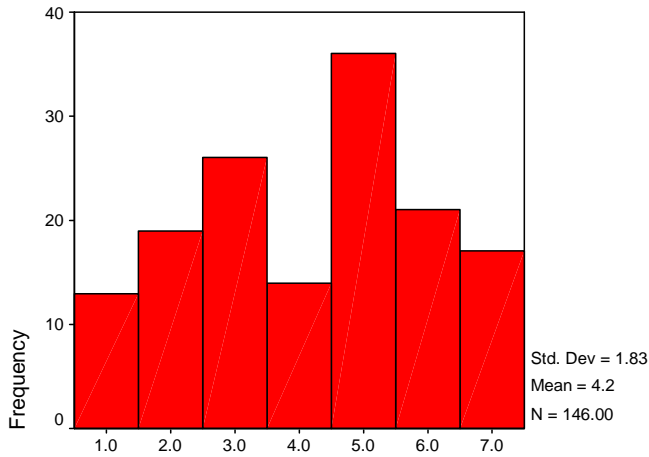
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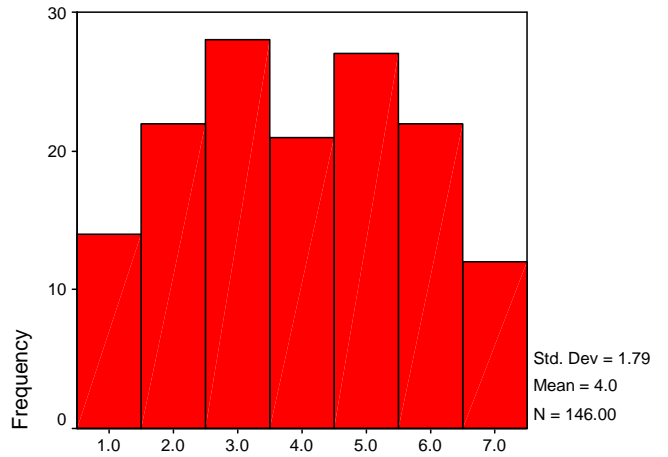
IPIS

IPID

IPRS

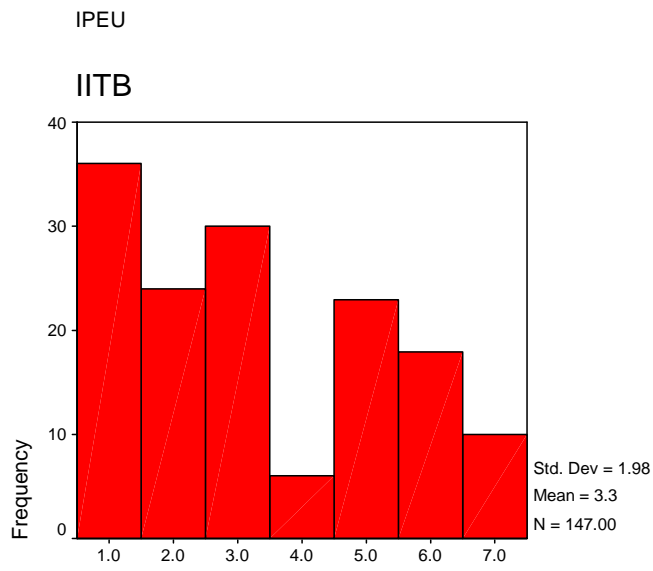
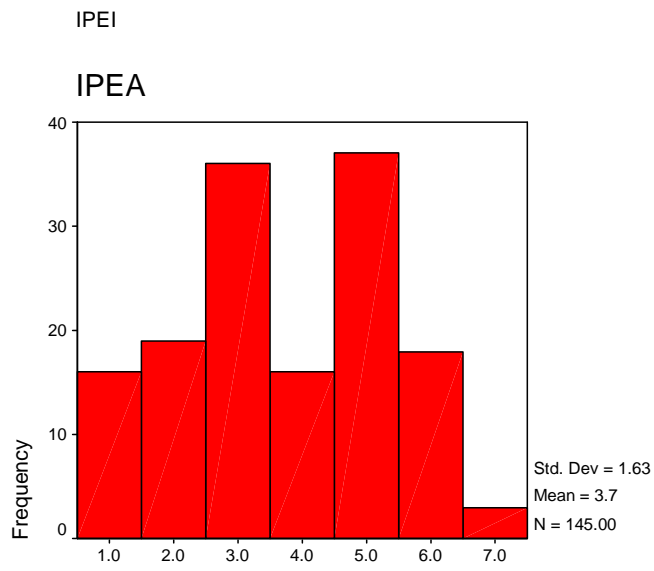
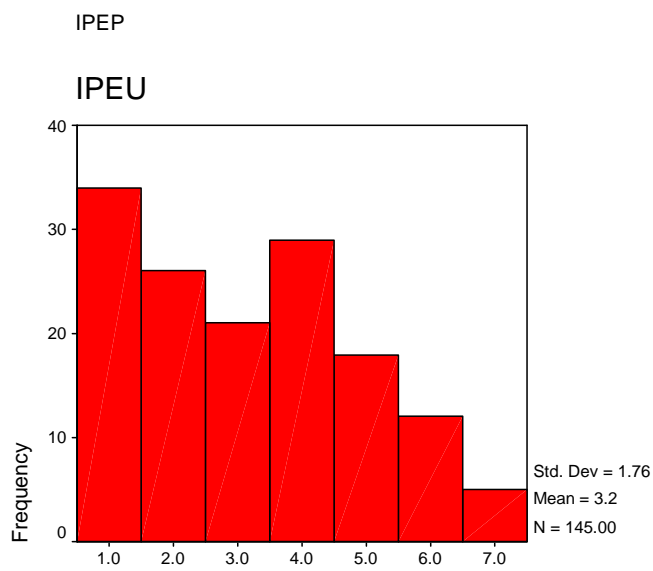
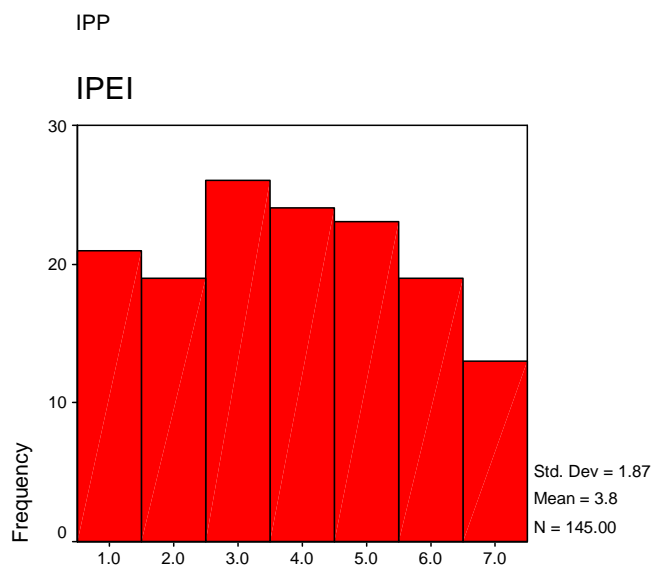
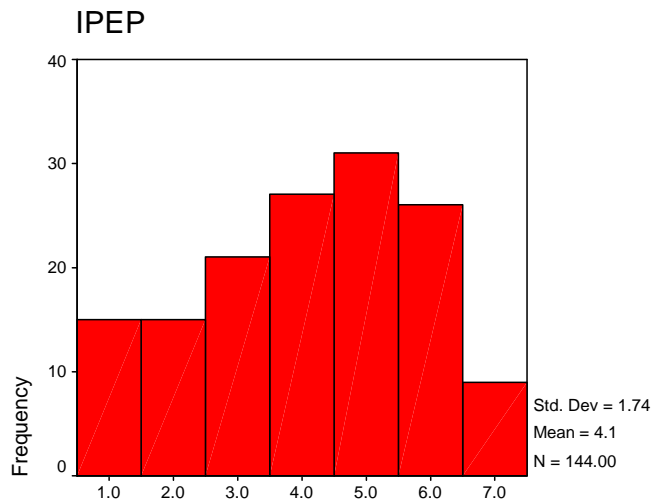
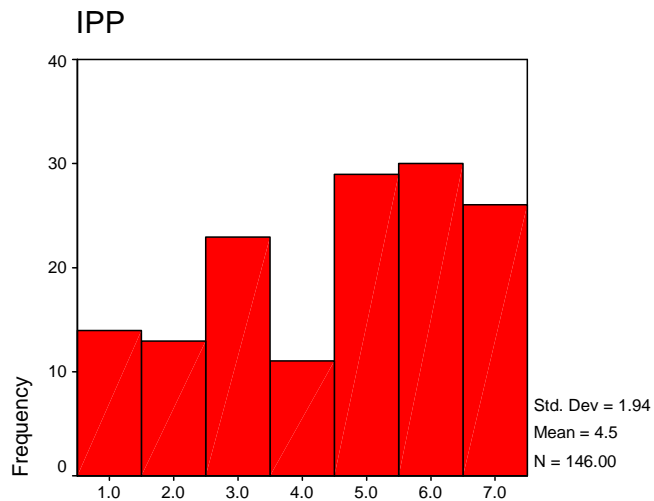


IPRD



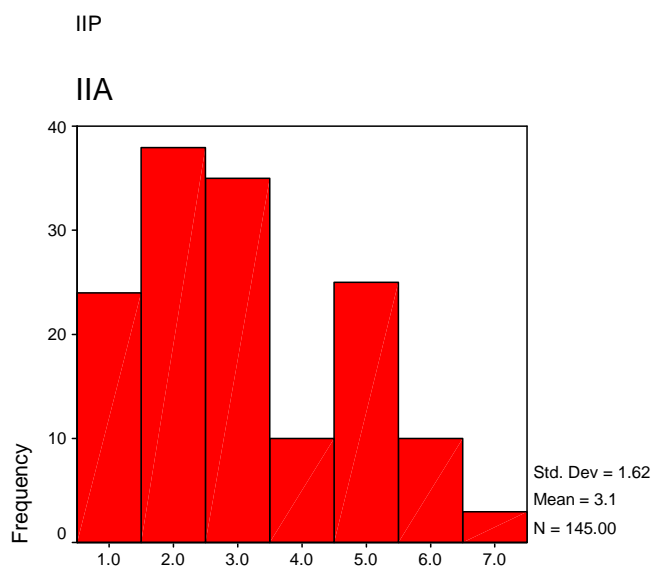
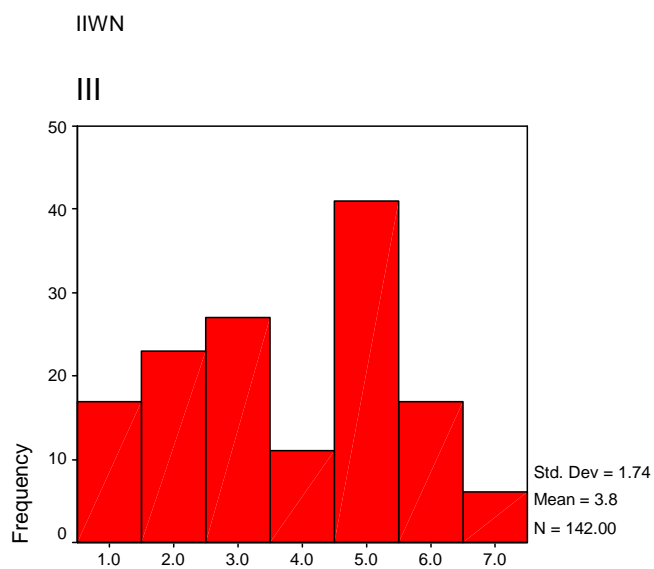
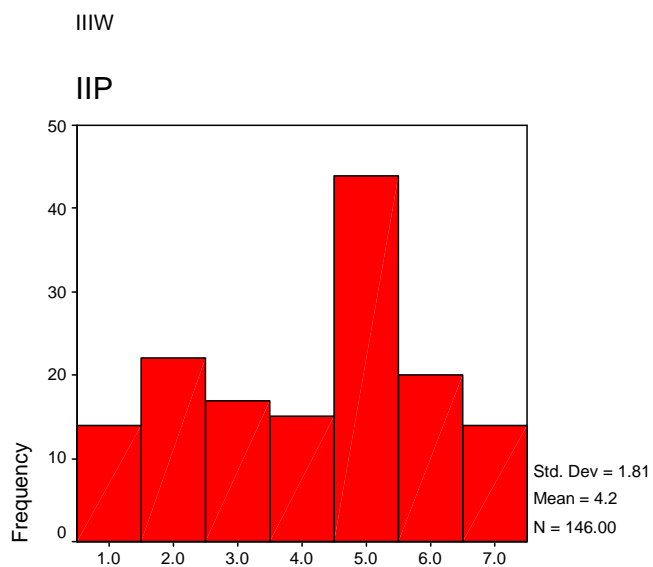
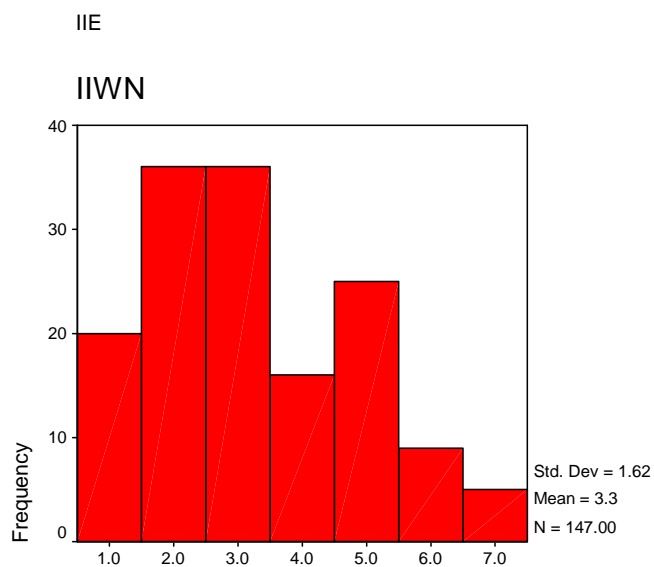
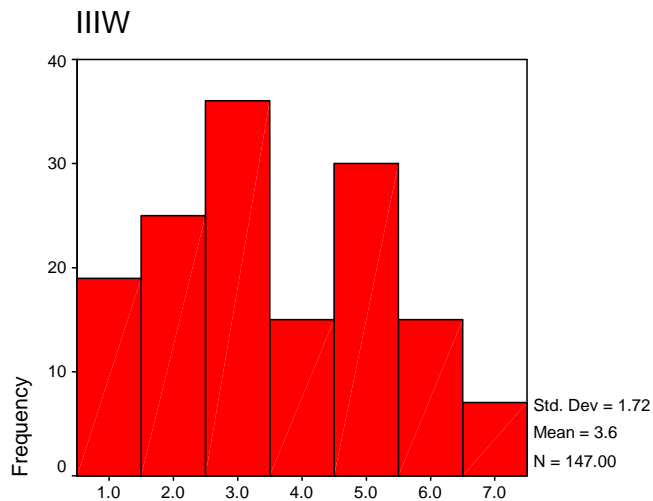
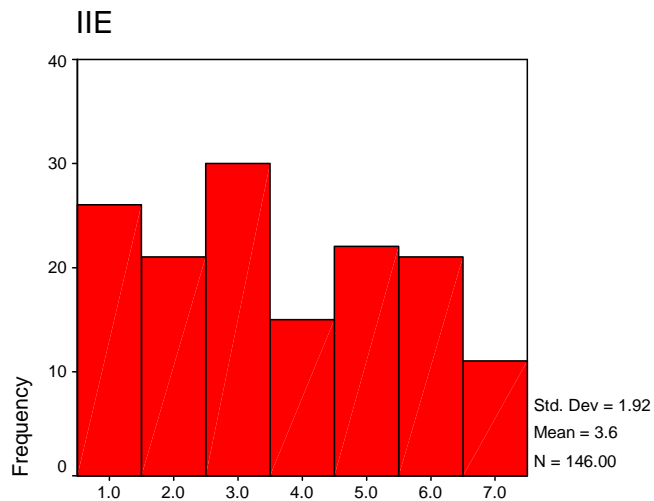
IPRS

IPRD



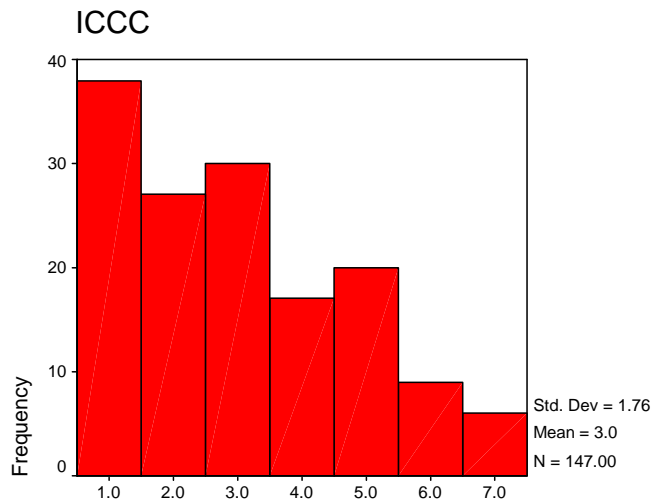
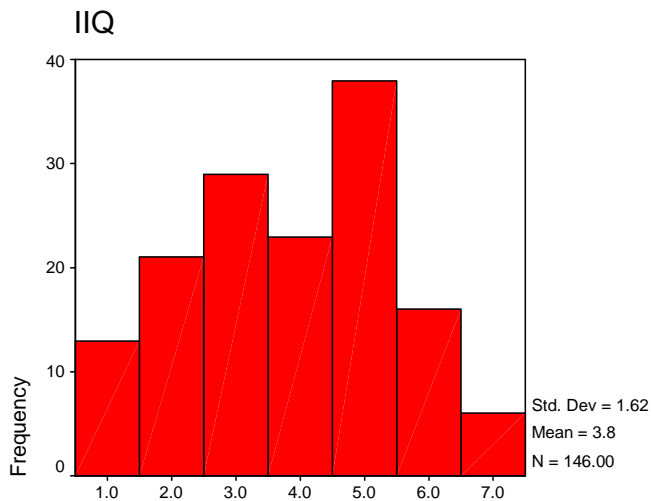
IPEA

IITB

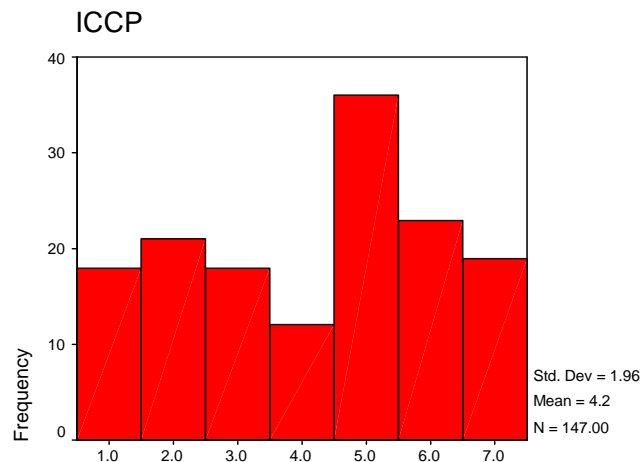
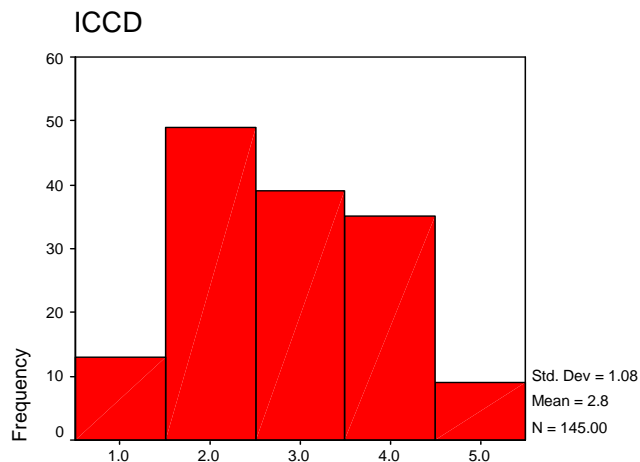


III

IIA

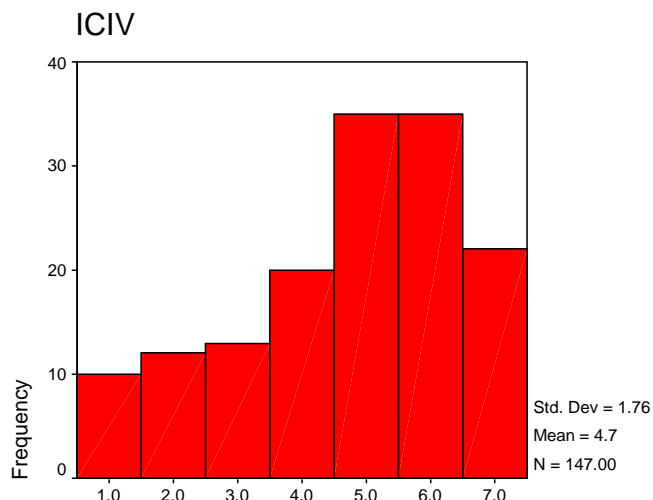
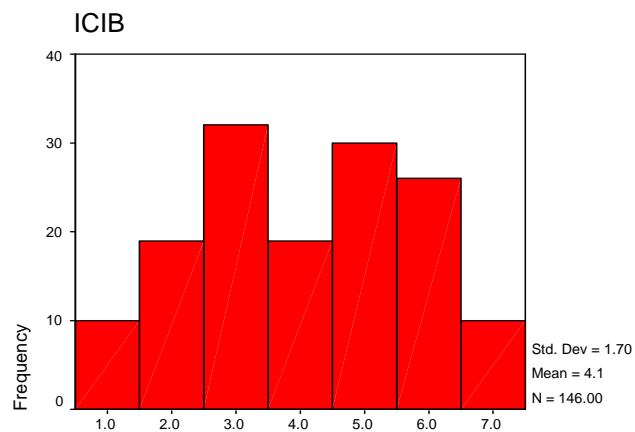


IIQ
Note the special scale in the key above for ICCD



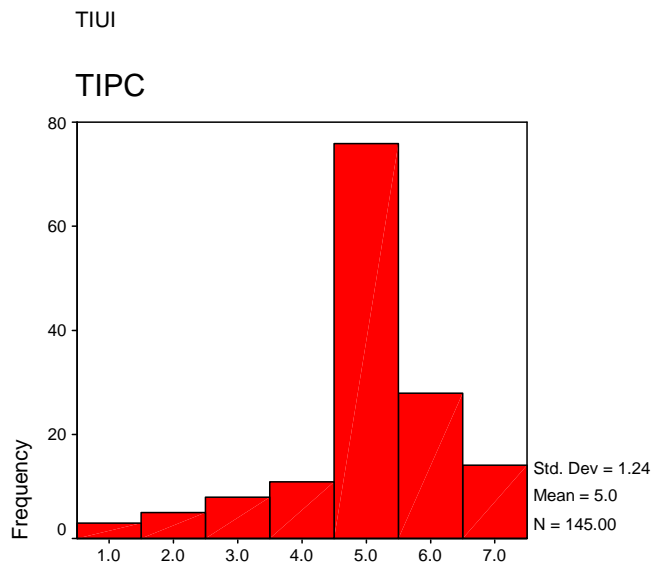
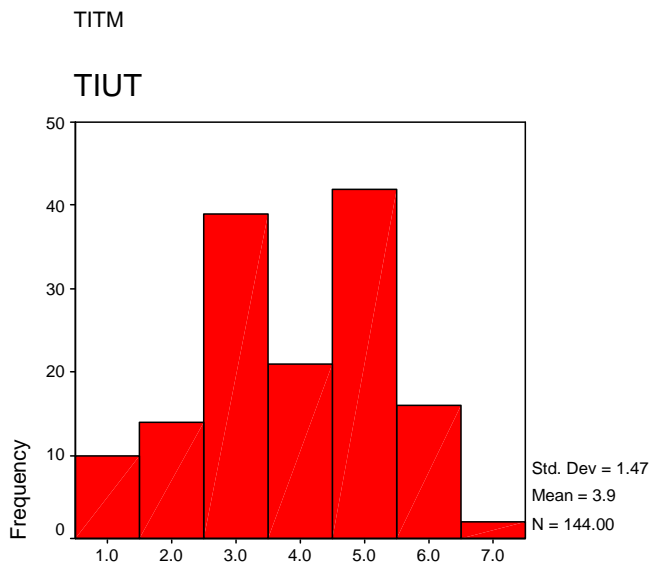
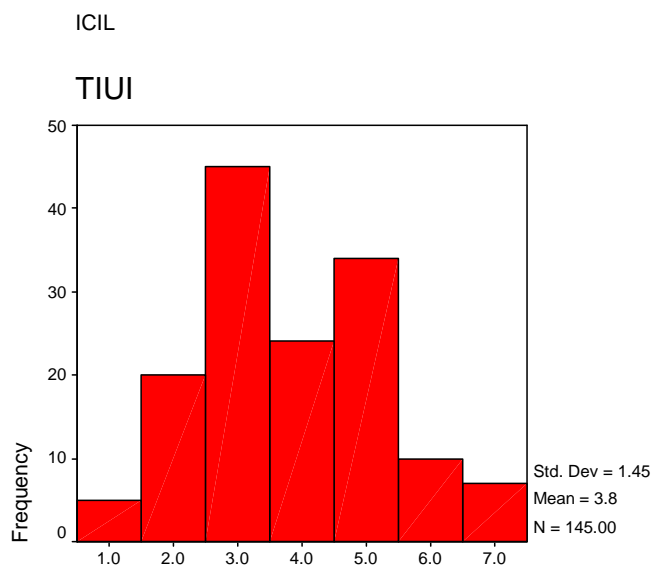
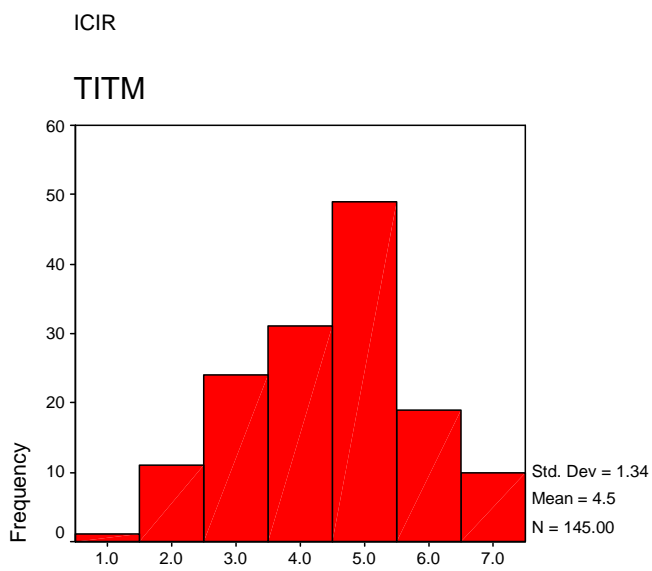
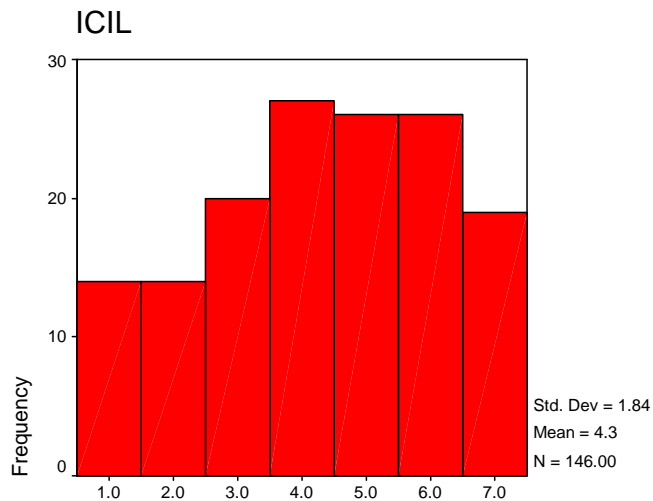
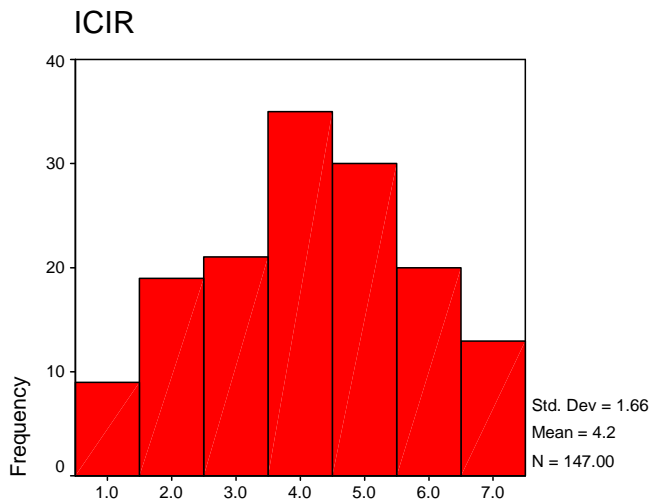
ICCD

ICCP



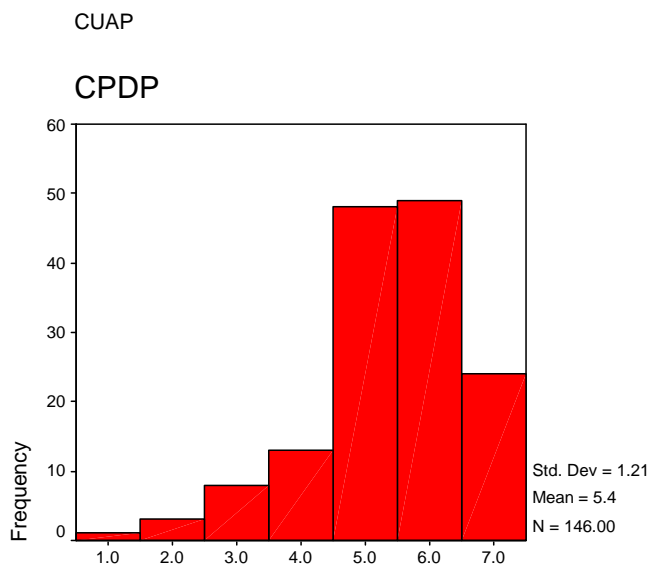
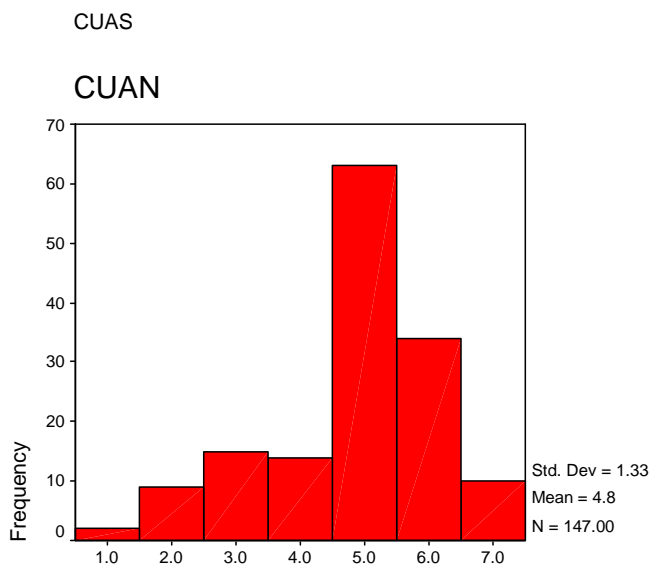
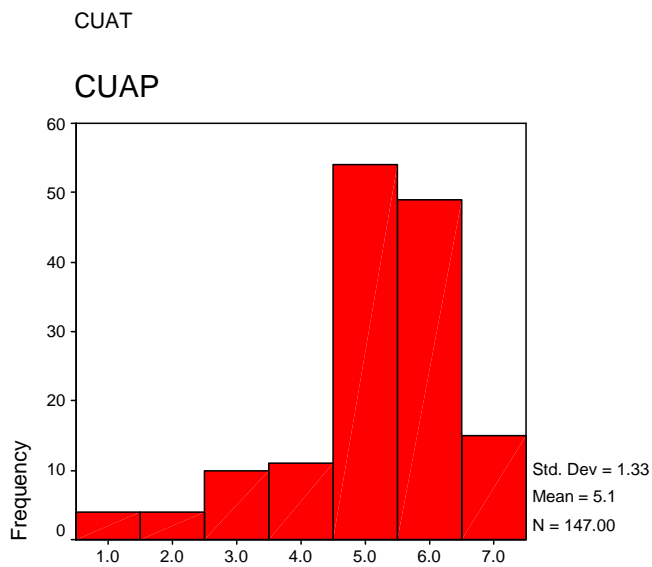
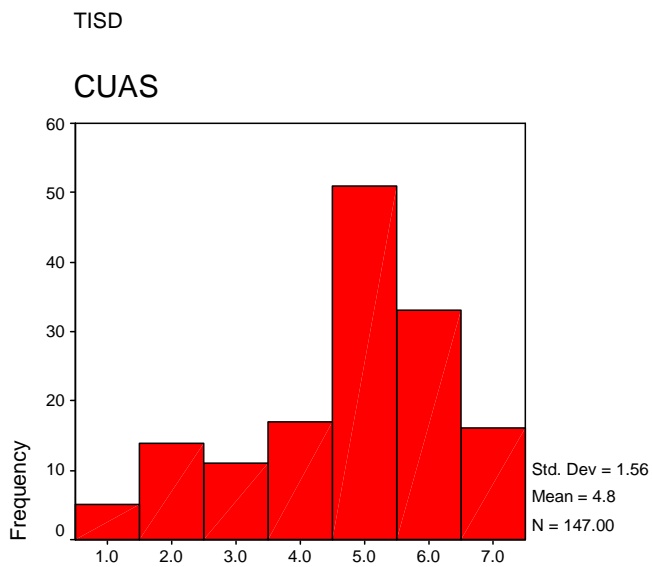
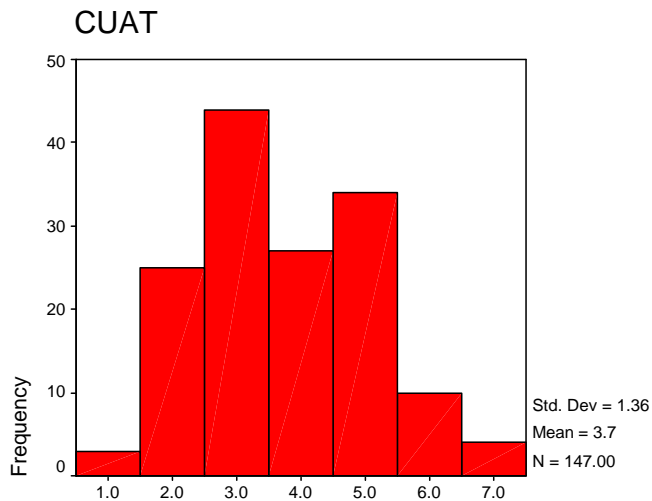
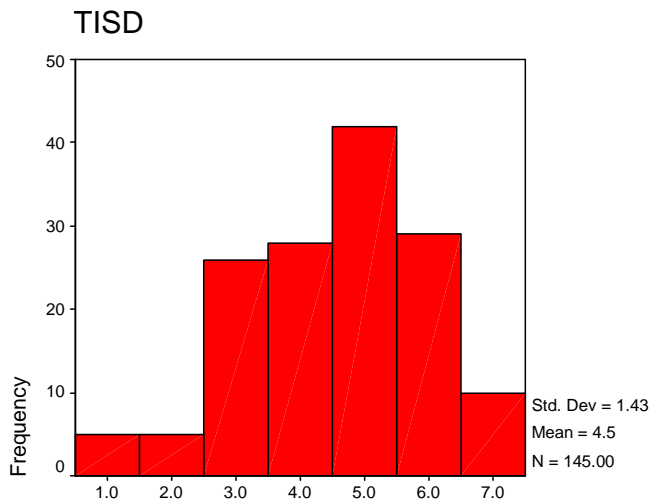
ICIB

ICIV



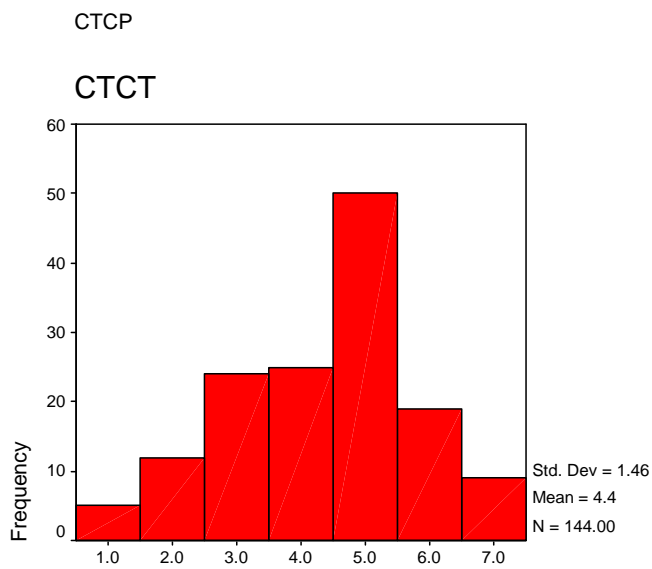
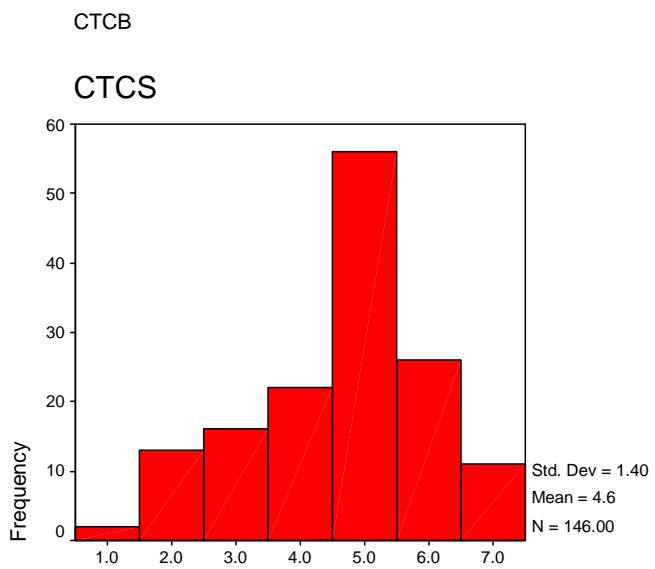
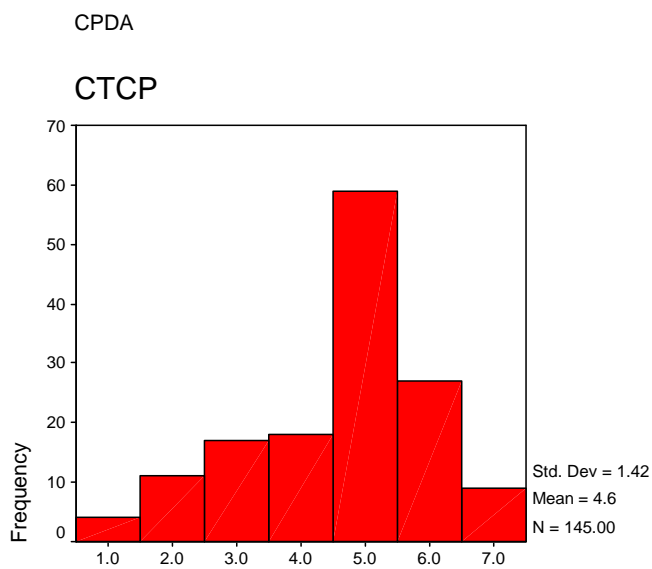
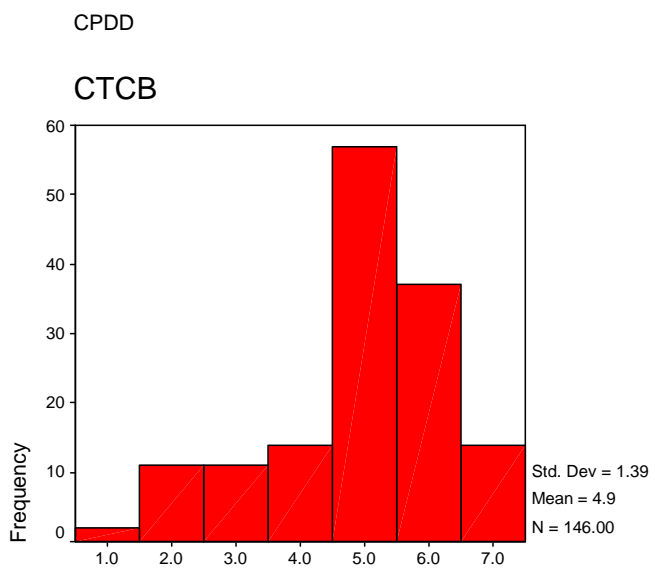
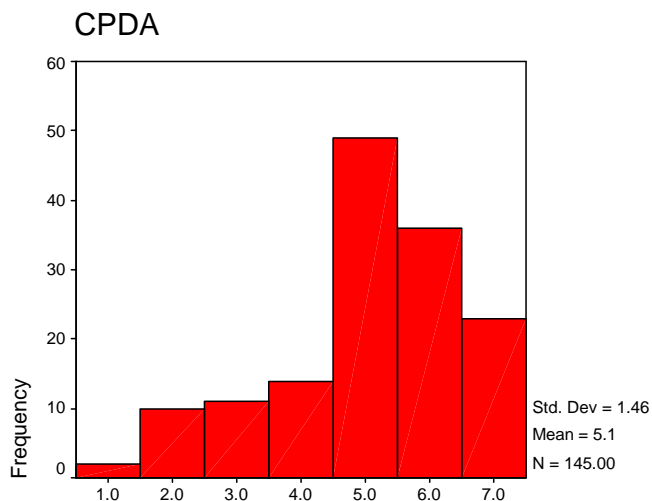
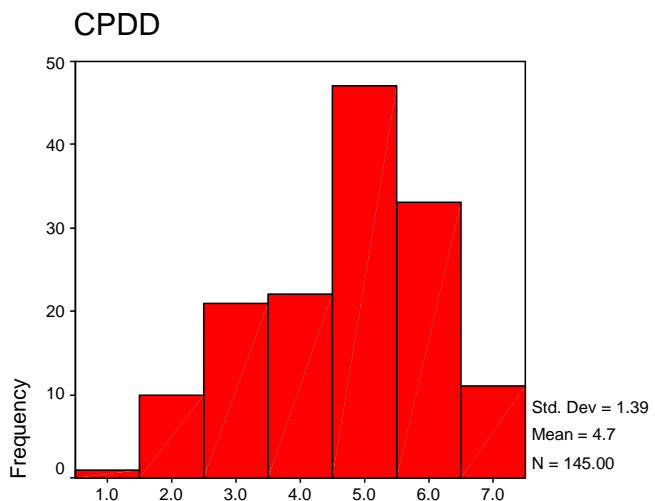
TIUT

TIPC



CUAN

CPDP



CTCS

CTCT