

Ghana - National Industrial Census 2003

Ghana Statistical Service, Autonomous

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Overview

Identification

ID NUMBER

GHA-GSS-NIC-2003-v1.0

Version

VERSION DESCRIPTION

V1.2 Edited data for internal use only

PRODUCTION DATE

2006-06-30

Overview

ABSTRACT

There was a growing concern about the slow growth of Ghana's industrial sector, particularly with respect to the manufacturing sub-sector which has stagnated in comparison with countries like Cote d'Ivoire and Malaysia where manufacturing levels were lower than Ghana 30 years ago. The state of Ghana's industry has been recognized by the Government of Ghana and a number of initiatives have been taken over the years to help accelerate industrial growth. Despite laudable interventions, such as the New Industrial Reform, the Accelerated Growth Programme and the Ghana Poverty Reduction Strategy, manufacturing value added in Ghana grew at a low rate between 1990 and 2001. The small size of the Ghanaian market and the failure of manufacturers to break into export markets are frequently cited among the causes of the present predicament of the manufacturing sub-sector. The Mining sub sector has overcome some of these obstacles with increases in output over the years, which is mostly exported. Production of Electricity and Water on the other hand has not grown enough to support higher rates of growth of industry.

The Ghana Statistical Service in collaboration with Ministry of Trade and Industry and Presidential Special Initiative and supported by UNIDO conducted the 2003 National Industrial Census. The objectives of the census was to obtain benchmark data on the structure of industry, establish an industrial database and regularly update the register, obtain data on production and employment for government and business analysis and decision making. Other objectives was to measure the contribution of each industry and region to Ghana's employment and production. In addition to the above mentioned objectives, the obtained data should be internationally comparable on the structure and activity of each industrial sub sector.

There were two phases of the National Industrial Census with phase I listing all industrial establishment in the country that are primarily engaged in mining and quarrying, manufacturing, construction and the production of electricity and water. Household industries were excluded unless there is a clear indication of the industry by way of a sign board. The phase II covered all establishments primarily engaged in mining and quarrying, construction, the production of electricity and water, all manufacturing establishment engaging 10 or more persons and a representative sample of manufacturing establishments engaging less than 10 persons.

KIND OF DATA

Census/enumeration data [cen]

UNITS OF ANALYSIS

Establishments

Scope**NOTES**

The scope of the National Industrial Census include all establishments in the following sectors: mining and quarrying, electricity & water production and construction. With regard to the manufacturing sub sector, all establishments engaging 10 persons or more were included whereas a sample was taken from establishments engaging less than 10 persons. The areas of interest within these sectors are the Identification and classification of the establishments. employment and earnings, stocks, fixed assets, input costs, sales and other receipts of the establishments.

Coverage**GEOGRAPHIC COVERAGE**

National

UNIVERSE

The Census included all establishments in the following sectors: mining and quarrying, electricity & water production and construction. With regard to the manufacturing sub sector, all establishments engaging 10 persons or more were included whereas a sample was taken from establishments engaging less than 10 persons.

Producers and Sponsors**PRIMARY INVESTIGATOR(S)**

Name	Affiliation
Ghana Statistical Service	Autonomous

OTHER PRODUCER(S)

Name	Affiliation	Role
Ministry of Trade and Industry		Assisted in the preparatory activities

FUNDING

Name	Abbreviation	Role
Danish Development Agency	DANIDA	Provided funds

OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
United Nations Industrial Development Organisation	UNIDO	Technical Assistance

Metadata Production**METADATA PRODUCED BY**

Name	Abbreviation	Affiliation	Role
Ghana Statistical Service	GSS		Lead documenting institution

DATE OF METADATA PRODUCTION

2012-07-31

Sampling

Sampling Procedure

A one-stage sample design was used for the survey with the primary sampling units (PSU) being the individual establishment. The sampling frame of establishments had two levels of stratification in addition to implicit stratification from ordering the establishments within each stratum. The first level of stratification was by the 4-digit ISIC activities, which represented the smallest domains of analysis. Within each of these individual activities, the establishments were further stratified by the number of persons engaged, which is also correlated with industrial production, revenue, expenditures and other aggregates to be measured in the survey.

Deviations from Sample Design

All of the establishments in the Construction, Electricity and Water, Mining and Quarrying sub-sectors were included in the survey regardless of size. Given that reliable estimates are required for each 4-digit ISIC group, activities with few establishments were also identified as certainty strata.

Response Rate

Establishments are classified into mining and quarrying, manufacturing, electricity and production and construction sectors. Under manufacturing we considered establishments which engaged less than 10 persons and that which engaged 10 or more persons.

The frame for establishments engaging 1 - 9 persons is 22,404

The frame for establishments engaging 10+ persons is 4,230

The number of establishments sampled:

1 - 9 = 1,263

10+ = 4,233

Number of establishment completed:

1 - 9 = 895

10+ = 2,918

Number of establishment out of scope + Association

1 - 9 = 53

10+ = 765

Number of establishment not completed

1 - 9 = 304

10+ = 484

Number of establishment closed down

1 - 9 = 43

10+ = 81

Response rate for :

1 - 9 = 0.77

10+ = 0.86

Response rate is equal to the ratio of number of completed to the adjusted number of not completed establishment

Adjusted number of establishments excludes out of scopes and association, groups and cooperative, closed down and not located establishments

* the difference in the sample and the frame for 10+ persons engaged establishment was due to the migration of 1-9 persons engaged establishment into the 10+ category

Weighting

Sample weight were calculated for the manufacturing and mining data files. The sample weight variable is called weights. The sample weight was computed as the inverse of the probability of selection. The sample weight were adjusted to take into account the non-interview (non response) within each stratum including the certainty strata

Questionnaires

Overview

There were five types of questionnaires used in the 2003 National industrial census. The phase I had one scannable questionnaire which collected information on all establishments engaged in mining and quarrying, manufacturing, construction and the production of electricity and water. The location of these establishments were also taken as well as the persons engaged.

During the phase II there were four types of questionnaire. The national industrial census 2003 (manufacturing) labeled 3A which was used for establishments engaging 10+ persons.

The national industrial census 2003 (manufacturing) labeled 3B which was used for establishments engaging less than 10 persons.

The national industrial census 2003 (mining and quarrying) labeled 2 which was used for establishments engaged in mining and quarrying irrespective of number of persons engaged.

The national industrial census 2003 (electricity and water) labeled 4 which was used for establishments engaged in the production of electricity and water irrespective of number of persons engaged.

The national industrial census 2003 (construction) labeled 5 which was used for establishments engaged in construction irrespective of number of persons engaged.

Data Collection

Data Collection Dates

Start	End	Cycle
2003-10-01	2003-11-01	phase I
2004-11-01	2005-03-01	phase II

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

There was a one week residential training for enumerators and supervisors for the Phase I which collected basic information on all establishments engaged in Mining and Quarrying, Manufacturing, Construction and the production and distribution of Electricity and Water. Information was also collected on location, industrial activity among others. The data collection period was about two months. This served as a frame for the phase II.

For phase II both supervisors and enumerators underwent a two-week residential training course. Training was conducted by senior staff of the Industrial Census Secretariat, with the assistance of Regional Statisticians. It included lectures, demonstrations, practical work and assessments. Assessments included written examination and observation of practical work. Out of the 360 trainees, 257 qualified and were accepted for field work.

Data Collectors

Name	Abbreviation	Affiliation
Ghana Statistical Service	GSS	Autonomous

SUPERVISION

There were teams formed with varying number of team members with the minimum being 4 members and the maximum being 6 members. Each team had a supervisor.

The role of the supervisor is to accompany enumerators to check on their boundaries and localities in their respective zones. In addition to ensure that all enumerators under his care do enumerate all establishments in his supervisory area. Help enumerators when they are in difficulty and keep in touch with the enumerators under his care.

The teams were constituted into area zone with a zonal officer. A zone was made up of four or five teams.

Data Processing

Data Editing

All questionnaires were edited for completeness, scope and internal consistency in the office before sending them for data capture. Questionnaires that did not meet the test were set aside for determination. Each questionnaire goes through the hands of a chain of editors i.e. lead editor then by the team leader in charge. All editors are confined to a particular place. This promotes consultations.

During data capture, there was double entry i.e. main and verification with comparison and necessary corrections effected. Structural checks and completeness is also done during data capture.

Other Processing

Automated data capture was used for the phase1 using the Teleform software. Three scanners with each having a scanning assistant. The data was posted into MS-Access which was then exported into SPSS. Data editing and cleaning was done in SPSS. This resulted in the sampling frame for the phase II

Data capture was done at a central place in the head office. 10 data entry officers using 10 desktop computers were deployed to do this work with two supervisors and two questionnaire administrators. The software used in the data capture was the Integrated Microcomputer Processing System (IMPS 4.0)

After data capture and secondary editing, the ascii data was exported into SPSS ver11.5 where sample weights were applied to the sampled establishments (manufacturing engaging 1-9 persons) then the production of the analysis tables

Data Appraisal

Estimates of Sampling Error

Estimates from a sample survey are affected by two types of errors: 1) non-sampling errors and 2) sampling errors. Non-sampling errors are the results of mistakes made in the implementation of data collection and data processing. Numerous efforts were made to minimize this type of error, however, non-sampling errors are impossible to avoid and difficult to evaluate statistically. Sample errors was calculated for survey estimates of total number of persons engaged by the 4-digit ISIC to ensure that all ISIC groups had a coefficient of variation (CV) lower than 10 percent

Details of the sampling errors are presented in appendix-3.

File Description

Variable List

manufacture sec49super

Content

Cases	16960
Variable(s)	50
Structure	Type: Key(s): ()
Version	Verions 1.0
Producer	Ghana Statistical Service
Missing Data	Missing data is coded as 9 or a series of 9s that fills the length of the field.

Variables

ID	Name	Label	Type	Format	Question
V470	refnum	Establishment Identification	contin	numeric	
V471	c13	Type of Ownership	discrete	character	
V472	avpers	average number of persons engaged	contin	numeric	
V473	classize	employment class size	discrete	numeric	
V474	newsize	new employment size	discrete	numeric	
V475	region	region	discrete	numeric	
V476	district		discrete	numeric	
V477	weights	Weight	contin	numeric	
V478	s1q111		discrete	character	
V479	towncode		contin	numeric	
V480	eznumber		discrete	numeric	
V481	s1q121		discrete	character	
V482	s1q122c		discrete	numeric	
V483	s1q123c		discrete	numeric	
V484	s1q124c		discrete	numeric	
V485	s1q13a		discrete	numeric	
V486	s1q13b		discrete	numeric	
V487	s1q128		discrete	numeric	
V488	s1q129		discrete	numeric	
V489	s1q14	time period	discrete	numeric	
V490	s1q14b		discrete	numeric	
V491	s1q161		contin	numeric	
V492	s1q1621		contin	numeric	
V493	s1q1622		contin	numeric	
V494	s1q1623		contin	numeric	
V495	s1q1631		contin	numeric	
V496	s1q1632		discrete	numeric	

ID	Name	Label	Type	Format	Question
V497	s1q1633		discrete	numeric	
V498	s1q164a		discrete	numeric	
V499	s1q164b		contin	numeric	
V501	b10	Industry Type	discrete	character	
V502	c1	Form of Organisation	discrete	character	
V503	c14	Owners Nationality and Gender	discrete	character	
V504	c15	Type of Legal Organisation	discrete	character	
V505	c16	Registered With Register General's Department	discrete	character	
V506	d2	4-digit ISIC code	discrete	character	
V507	e1	Account record type	discrete	character	
V508	f1	Persons Engaged	contin	numeric	
V509	d2desc	Description	discrete	character	
V510	isic3	3-digit ISIC code	discrete	character	
V511	isic2dg	2-digit ISIC code	discrete	character	
V512	s2q2	persons engaged	discrete	numeric	
V513	totemp	total number employed	contin	numeric	
V514	s49q9	fixed assets code	discrete	numeric	
V515	s49q1	new fixed asset purchased	contin	numeric	
V516	s49q2	second hand fixed asset purchased	contin	numeric	
V517	s49q3	alterations, renovations and improvement of fixed assets purchased from others	contin	numeric	
V518	s49q4	work done on own account	contin	numeric	
V519	s49q5	value of sales of fixed assets (million cedis)	contin	numeric	
V520	s49q6	net assets (1+2+3+4)-5	contin	numeric	

Establishment Identification (refnum)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 16960
Format: numeric	Invalid: 0
Width: 6	Minimum: 6001
Decimals: 0	Maximum: 400222
Range: 6001-400222	Mean: 202447.2
	Standard deviation: 107763

Type of Ownership (c13)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16960
Format: character	Invalid: 0
Width: 1	

average number of persons engaged (avpers)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 16960
Format: numeric	Invalid: 0
Width: 6	Minimum: 1
Decimals: 0	Maximum: 2348.5
Range: 1-2348.5	Mean: 31
	Standard deviation: 108.8

employment class size (classize)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16960
Format: numeric	Invalid: 0
Width: 1	Minimum: 1
Decimals: 0	Maximum: 4
Range: 1-4	

new empoyment size (newsiz)

File: manufacture sec49super

Overview

new empoyment size (newsie)

File: manufacture sec49super

Type: Discrete	Valid cases: 11080
Format: numeric	Invalid: 5880
Width: 4	Minimum: 1
Decimals: 2	Maximum: 8
Range: 1-8	

region (region)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16960
Format: numeric	Invalid: 0
Width: 2	
Decimals: 0	
Range: 1-10	

(district)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16960
Format: numeric	Invalid: 0
Width: 2	
Decimals: 0	
Range: 1-18	

Weight (weights)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 16960
Format: numeric	Invalid: 0
Width: 6	Minimum: 1
Decimals: 2	Maximum: 169.8
Range: 1-169.75	Mean: 7
	Standard deviation: 15.2

(s1q111)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16960
Format: character	Invalid: 0
Width: 40	

(towncode)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 120
Format: numeric	Invalid: 16840
Width: 2	Minimum: 1
Decimals: 0	Maximum: 22
Range: 1-22	Mean: 3
	Standard deviation: 4.8

(eznumber)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 5
Format: numeric	Invalid: 16955
Width: 1	Minimum: 1
Decimals: 0	Maximum: 1
Range: 1-1	Mean: 1
	Standard deviation: 0

(s1q121)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 120
Format: character	Invalid: 0
Width: 19	

(s1q122c)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 125
Format: numeric	Invalid: 16835
Width: 1	Minimum: 2
Decimals: 0	Maximum: 3
Range: 2-3	Mean: 2
	Standard deviation: 0.2

(s1q123c)

File: manufacture sec49super

Overview

(s1q123c)

File: manufacture sec49super

Type: Discrete	Valid cases: 125
Format: numeric	Invalid: 16835
Width: 1	Minimum: 1
Decimals: 0	Maximum: 3
Range: 1-3	Mean: 2.1
	Standard deviation: 0.4

(s1q124c)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 115
Format: numeric	Invalid: 16845
Width: 1	Minimum: 1
Decimals: 0	Maximum: 5
Range: 1-5	Mean: 1.8
	Standard deviation: 1.2

(s1q13a)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 125
Format: numeric	Invalid: 16835
Width: 1	Minimum: 1
Decimals: 0	Maximum: 2
Range: 1-2	Mean: 1
	Standard deviation: 0.2

(s1q13b)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 10
Format: numeric	Invalid: 16950
Width: 1	Minimum: 1
Decimals: 0	Maximum: 3
Range: 1-3	Mean: 2
	Standard deviation: 1.1

(s1q128)

File: manufacture sec49super

Overview

(s1q128)

File: manufacture sec49super

Type: Discrete
 Format: numeric
 Width: 1
 Decimals: 0
 Range: 1-2

Valid cases: 3105
 Invalid: 13855

(s1q129)

File: manufacture sec49super

Overview

Type: Discrete
 Format: numeric
 Width: 1
 Decimals: 0
 Range: 1-2

Valid cases: 1070
 Invalid: 15890

time period (s1q14)

File: manufacture sec49super

Overview

Type: Discrete
 Format: numeric
 Width: 1
 Decimals: 0
 Range: 1-6

Valid cases: 4360
 Invalid: 12600
 Minimum: 1
 Maximum: 6

(s1q14b)

File: manufacture sec49super

Overview

Type: Discrete
 Format: numeric
 Width: 1
 Decimals: 0
 Range: 2-8

Valid cases: 120
 Invalid: 16840

(s1q161)

File: manufacture sec49super

Overview

(s1q161)

File: manufacture sec49super

Type: Continuous
 Format: numeric
 Width: 4
 Decimals: 0
 Range: 1514-4520

Valid cases: 120
 Invalid: 16840
 Minimum: 1514
 Maximum: 4520
 Mean: 2227.3
 Standard deviation: 719.7

(s1q1621)

File: manufacture sec49super

Overview

Type: Continuous
 Format: numeric
 Width: 4
 Decimals: 0
 Range: 1514-4520

Valid cases: 80
 Invalid: 16880
 Minimum: 1514
 Maximum: 4520
 Mean: 2349.9
 Standard deviation: 873.2

(s1q1622)

File: manufacture sec49super

Overview

Type: Continuous
 Format: numeric
 Width: 4
 Decimals: 0
 Range: 1514-4520

Valid cases: 40
 Invalid: 16920
 Minimum: 1514
 Maximum: 4520
 Mean: 2836.4
 Standard deviation: 912.3

(s1q1623)

File: manufacture sec49super

Overview

Type: Continuous
 Format: numeric
 Width: 4
 Decimals: 0
 Range: 2010-3611

Valid cases: 20
 Invalid: 16940
 Minimum: 2010
 Maximum: 3611
 Mean: 2690.8
 Standard deviation: 645.6

(s1q1631)

File: manufacture sec49super

Overview

(s1q1631)

File: manufacture sec49super

Type: Continuous
 Format: numeric
 Width: 4
 Decimals: 0
 Range: 5020-5239

Valid cases: 15
 Invalid: 16945
 Minimum: 5020
 Maximum: 5239
 Mean: 5166
 Standard deviation: 106.9

(s1q1632)

File: manufacture sec49super

Overview

Type: Discrete
 Format: numeric
 Width: 1
 Decimals: 0

Valid cases: 0
 Invalid: 16960

(s1q1633)

File: manufacture sec49super

Overview

Type: Discrete
 Format: numeric
 Width: 1
 Decimals: 0

Valid cases: 0
 Invalid: 16960

(s1q164a)

File: manufacture sec49super

Overview

Type: Discrete
 Format: numeric
 Width: 1
 Decimals: 0
 Range: 1-1

Valid cases: 125
 Invalid: 16835
 Minimum: 1
 Maximum: 1
 Mean: 1
 Standard deviation: 0

(s1q164b)

File: manufacture sec49super

Overview

(s1q164b)

File: manufacture sec49super

Type: Continuous
 Format: numeric
 Width: 4
 Decimals: 0
 Range: 1514-4520

Valid cases: 115
 Invalid: 16845
 Minimum: 1514
 Maximum: 4520
 Mean: 2245.5
 Standard deviation: 729.8

Industry Type (b10)

File: manufacture sec49super

Overview

Type: Discrete
 Format: character
 Width: 1

Valid cases: 16755
 Invalid: 0

Form of Organisation (c1)

File: manufacture sec49super

Overview

Type: Discrete
 Format: character
 Width: 1

Valid cases: 16960
 Invalid: 0

Owners Nationality and Gender (c14)

File: manufacture sec49super

Overview

Type: Discrete
 Format: character
 Width: 1

Valid cases: 16365
 Invalid: 0

Type of Legal Organisation (c15)

File: manufacture sec49super

Overview

Type: Discrete
 Format: character
 Width: 1

Valid cases: 16750
 Invalid: 0

Registered With Register General's Department (c16)

File: manufacture sec49super

Registered With Register General's Department (c16)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16465
Format: character	Invalid: 0
Width: 1	

4-digit ISIC code (d2)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16960
Format: character	Invalid: 0
Width: 4	

Account record type (e1)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 4135
Format: character	Invalid: 0
Width: 1	

Persons Engaged (f1)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 16590
Format: numeric	Invalid: 370
Width: 4	Minimum: 1
Decimals: 0	Maximum: 3782
Range: 1-3782	Mean: 30.3
	Standard deviation: 119.3

Description (d2desc)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16705
Format: character	
Width: 119	

3-digit ISIC code (isic3)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 12470
Format: character	Invalid: 0
Width: 3	

2-digit ISIC code (isic2dg)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16730
Format: character	Invalid: 0
Width: 3	

persons engaged (s2q2)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16960
Format: numeric	Invalid: 0
Width: 2	
Decimals: 0	
Range: 23-23	

total number employed (totemp)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 16920
Format: numeric	Invalid: 40
Width: 4	Minimum: 1
Decimals: 0	Maximum: 2349
Range: 1-2349	Mean: 30
	Standard deviation: 103.6

fixed assets code (s49q9)

File: manufacture sec49super

Overview

Type: Discrete	Valid cases: 16960
Format: numeric	Invalid: 0
Width: 2	
Decimals: 0	
Range: 91-95	

new fixed asset purchased (s49q1)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 13177
Format: numeric	Invalid: 3783
Width: 9	Minimum: 0
Decimals: 2	Maximum: 128662
Range: 0-128662	Mean: 100.5
	Standard deviation: 1891.7

second hand fixed asset purchased (s49q2)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 14819
Format: numeric	Invalid: 2141
Width: 8	Minimum: 0
Decimals: 2	Maximum: 14145.4
Range: 0-14145.35	Mean: 12.4
	Standard deviation: 312.7

alterations, renovations and improvement of fixed assets purchased from others (s49q3)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 13017
Format: numeric	Invalid: 3943
Width: 8	Minimum: 0
Decimals: 2	Maximum: 13382
Range: 0-13382	Mean: 15.1
	Standard deviation: 262.1

work done on own account (s49q4)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 12910
Format: numeric	Invalid: 4050
Width: 8	Minimum: 0
Decimals: 2	Maximum: 86567
Range: 0-86567	Mean: 15.8
	Standard deviation: 1080.9

value of sales of fixed assets (million cedis) (s49q5)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 14738
Format: numeric	Invalid: 2222
Width: 7	Minimum: 0
Decimals: 2	Maximum: 9027
Range: 0-9027	Mean: 6.5
	Standard deviation: 167.6

net assets (1+2+3+4)-5 (s49q6)

File: manufacture sec49super

Overview

Type: Continuous	Valid cases: 15633
Format: numeric	Invalid: 1327
Width: 9	Minimum: -3635
Decimals: 2	Maximum: 128438
Range: -3635-128438	Mean: 120.9
	Standard deviation: 2060