

SURVEY OF OCCUPATIONAL EMPLOYMENT PATTERNS IN MANUFACTURING INDUSTRY

(First of a Series)



This LABSTAT Updates is the first in the series on industry occupational employment patterns based on the results of the 2006 BLES Integrated Survey (BITS) - a nationwide sample survey covering 7,630 non-agricultural establishments with at least 20 workers. This issue features occupational employment patterns in the manufacturing industry with specific attention on employment by major occupation groups; vital and hard-to-fill occupations; problems encountered on recruitment; and the views of the respondents on how to address the labor shortage problem.

Number of Establishments and Total Employment

The manufacturing industry is one of the backbones of our nation's economy. Its contribution to the country's output of goods and services in 2006 was estimated at 21.9.0% of Gross Domestic Product (GDP).

Manufacturing is by far the largest industry aggrupation among the twelve (12) industries covered by the 2006 BITS. Specifically, it accounted for 25.3% (6,421) of the total 25,349 establishments covered by the survey and 36.7% (1.058 million) of the total workforce of 2.887 million. (Table 1)

Furthermore, manufacturing is the most diverse industry as it is made up of 30 sub-sectors of which three (3) were the most dominant, namely: manufacturing of food products (16.0%), manufacturing of wearing apparel (11.8%) and

manufacturing of chemicals and chemical products (6.5%). (Table 3)

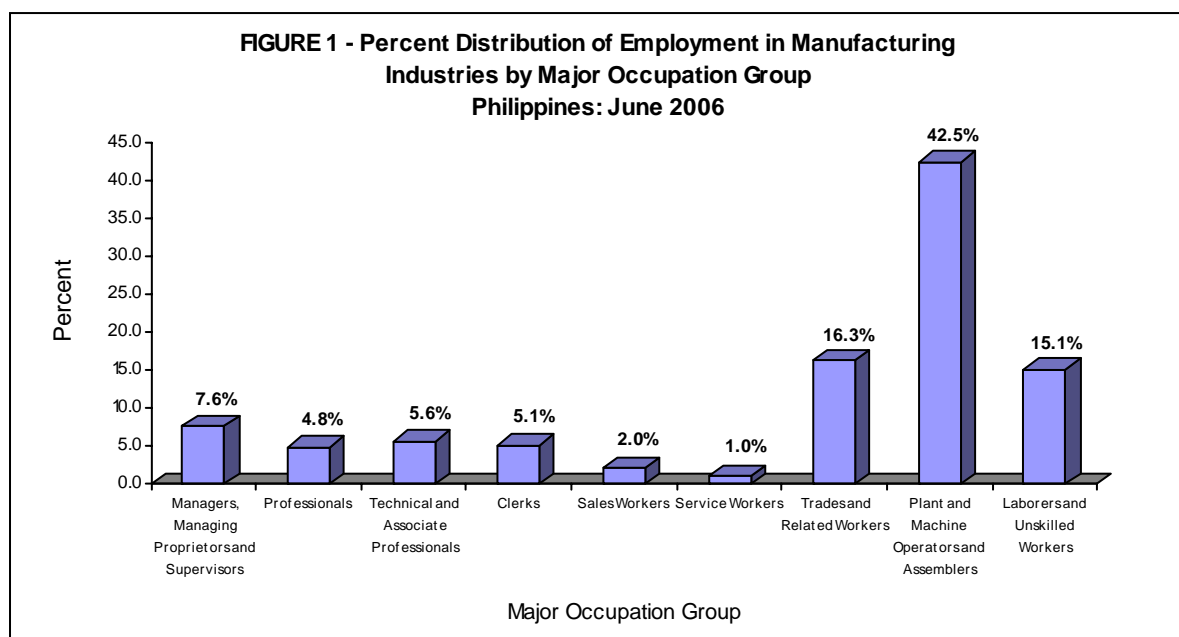
TABLE 1 - Number of Manufacturing Establishments With 20 or More Workers
Philippines: June 2006

Indicator	All Industries	Manufacturing
Establishment - Number	25,349	6,421
- Percent share (%)	100.0	25.3
Employment - Number	2,887,510	1,058,824
- Percent share (%)	100.0	36.7

Source: BLES, 2006 BITS.

Occupational Employment Patterns

Classified by major occupation groups, employment in this industry was dominated by three major groups, namely: plant and machine operators and assemblers (42.5%); trades and related workers (16.3%); and laborers and unskilled workers (15.1%). Their dominance reflects



Source: BLES, 2006 BITS.

the nature of activities in manufacturing which rely heavily on plant and machine operators and assemblers.

The rest of the workforce were classified as managers, managing proprietors and supervisors (7.6%); technical and associate professionals (5.6%); clerks (5.1%); and professionals (4.8%). The smallest occupation groups were attributed to sales workers (2.0%) and service workers (1.0%). (Fig. 1)

Vital Occupations

A total of 220 specific occupations were identified by the survey respondents as vital to the success of their business operations.

As expected, managers, managing proprietors and supervisors (39.8%) and plant and machine operators and assemblers (14.6%) were on the top of the vital occupation list. Ranking next in importance were technical and associate

professionals (11.9%) and trades and related workers (11.0%).

At the bottom of the vital occupation list were laborers and unskilled workers (2.6%), sales workers (2.3%) and service workers (0.2%). (Table 4)

By specific occupation title (4-digit PSOC), the top 20 occupations perceived by employers as most vital to their business operations were the following:

1. Production supervisors and general foremen
2. Production and operations managers in manufacturing
3. Safety, health and quality inspector
4. Sales and marketing managers
5. Technical and commercial sales representatives
6. Accounting and bookkeeping clerks
7. Sewers, embroiderers and related workers
8. General managers/managing-proprietors in manufacturing
9. Shop salespersons and demonstrators
10. Accountants and auditors
11. Finance and administration managers
12. Machine-tool operators

13. Hand packers and other manufacturing laborers
14. Decorators and commercial designers
15. Directors and chief executives of corporations
16. Personnel & industrial relations managers
17. Bakers, pastry cooks and confectionery makers
18. Plastic products machine operators
19. Mechanical engineers
20. Chemical engineers

17. Pressman letterpress and related workers
18. Electrical engineers
19. Sales and marketing managers
20. Computer equipment operators

It can be noted that there were thirteen (13) occupations in the list that also appeared in the vital occupation list and this makes them even more critical in terms of supply considerations. These occupations are:

Hard-to-Fill Occupations

Nearly one of every four manufacturing establishments (27.6% or 1,773) has experienced some difficulties in recruiting qualified applicants to fill up job openings in their establishments for the past three years.

They listed a total of 134 specific occupations considered as hard-to-fill (Table 5). The top 20 occupations wherein the respondents encountered recruitment problems over the last three years were the following:

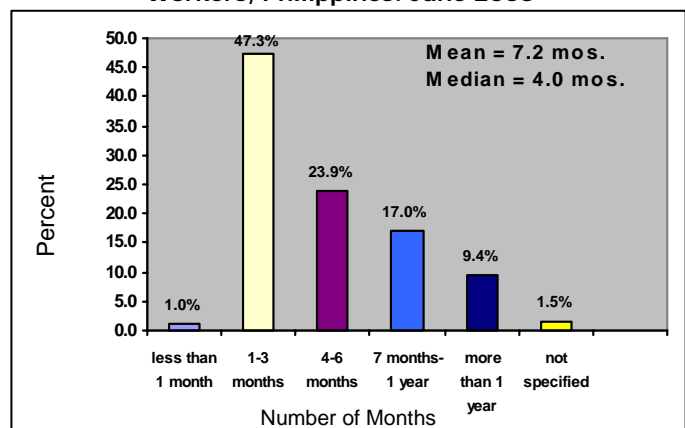
1. Professional nurses
2. Industrial engineers
3. Accountants and auditors
4. Production supervisors and general foreman
5. Safety, health and quality inspector
6. Technical and commercial sales representatives
7. Chemical engineers
8. Sewers, embroiderers and related workers
9. Decorators and commercial designers
10. Mechanical engineers
11. Production and operations manager in manufacturing
12. Textile, leather and related pattern makers and cutters
13. Shop salespersons and demonstrators
14. Sewing machine operators
15. Chemists
16. Accounting and bookkeeping clerks

1. Production supervisors and general foremen
2. Production and operations managers in manufacturing
3. Safety, health and quality inspectors
4. Sales and marketing managers
5. Technical and commercial sales representatives
6. Accounting and bookkeeping clerks
7. Chemical engineers
8. Shop salespersons and demonstrators
9. Accountants and auditors
10. Decorators and commercial designers
11. Mechanical engineers
12. Chemical engineers
13. Sewers, embroiderers and related workers

Length of time or duration hard-to-fill occupations remained unfilled

The median and mean months it took employers to fill a vacancy considered as "hard-to-

FIGURE 2 - Percent Distribution of Number of Months Hard-to-Fill Occupations Remained Unfilled in Manufacturing Establishments With 20 or More Workers, Philippines: June 2006



Source: BLES, 2006 BITS.

fill” were computed at four (4) months and seven (7) months, respectively. (Figure 2)

The difference between the two figures can be explained by the fact that while the survey indicates that almost half (48.3%) of the vacancies were filled up within the three-month period, there were notable number of extreme values *or outliers* in the data distribution. The *outliers* include responses with waiting time of seven months to one year to recruit the qualified applicants (17.0%) and those who waited for more than one year (9.4%). Table 2 shows the list of hard-to-fill jobs which took more than one year “waiting” period before they are filled up.

TABLE 2 – Top Hard-to-Fill Jobs Unfilled for More Than One Year in Manufacturing Establishments With 20 or More Workers, Philippines: June 2006

MANUFACTURING OF FOOTWEAR
<ul style="list-style-type: none"> • Industrial engineers • Professional nurses
MANUFACTURING OF BASIC METALS
<ul style="list-style-type: none"> • Production and operations managers • Production supervisors and general foremen
MANUFACTURING OF FOOD PRODUCTS
<ul style="list-style-type: none"> • Electrical mechanics and fitters • Production supervisors and general foremen
MANUFACTURING OF BEVERAGES
<ul style="list-style-type: none"> • Production supervisors and general foremen • Safety, health and quality inspectors
MANUFACTURING OF TEXTILES
<ul style="list-style-type: none"> • Finance and administration managers
MANUFACTURING OF PLASTIC PRODUCTS
<ul style="list-style-type: none"> • Chemical engineers • Professional nurses
MANUFACTURING OF WEARING APPAREL
<ul style="list-style-type: none"> • Sewers, embroiderers and related workers • Accounting and bookkeeping clerks
MFG. OF WOOD AND WOOD PRODUCTS
<ul style="list-style-type: none"> • Production supervisors and general foremen • Mechanics fitters
MFG. OF CHEMICALS & CHEMICAL PRODUCTS
<ul style="list-style-type: none"> • Systems analysts and designers

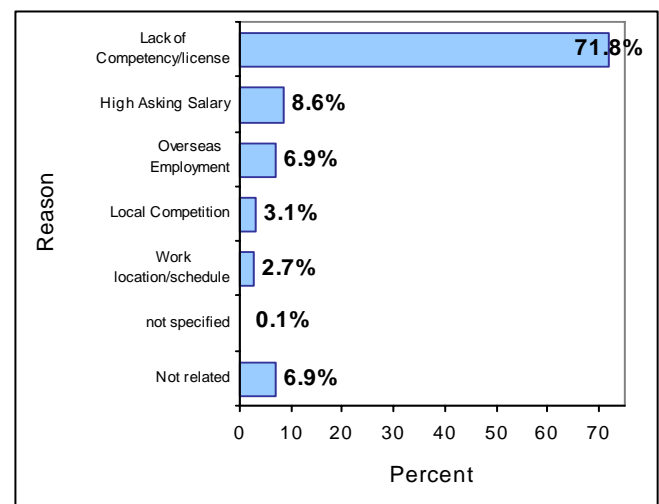
Source: BLES, 2006 (BITS).

Reasons Why Hard-to-fill Occupations Exist

Hard-to-fill occupations exist because of several reasons. The most frequently cited reason (71.8%) was the shortage of qualified applicants who passed the competency requirements of a job or those who possess professional license.

Other reasons mentioned by respondents were: high or unreasonable asking salary of applicants (8.6%); perception that applicants preferred overseas employment than local employment (6.9%); stiff competition among local firms over few available talents (3.1%); and “location” or “work schedule” problem (2.7%). (Figure 3)

FIGURE 3
Percent Distribution of Reasons Why Identified Occupations Are Hard-To-Fill in Manufacturing Establishments With 20 or More Workers, Philippines: June 2006



Source: BLES, 2006 BITS.

Measures to Address Shortage of Talents

Of those respondents who encountered recruitment problems, majority (79.5% or 5,104) perceived that the problem of labor shortage can be

resolved while some (20.5% or 1,317) have a notion that this problem will persist in the future.

When asked further what forms of intervention or measure they believed can resolve the problem of labor shortage, more than one half (52.0%) provided responses which can be categorized into six (6) broad headings as follows: (*Table 6*)

1. **Manpower skills development** – to address the need for a highly skilled and technically trained manpower, majority (20.5%) of the respondents suggested the: a) enhancement of skills training program for vocational and trade related courses; b) creation of free or low-cost training center/vocational/technical schools c) provision of technical training and on-the-job exposure to students; and d) encouraging high school students to take up courses related to science and technology.
2. **Enhancement of quality of education** to produce more competitive workers in the business community. The responses made by 16.3% of the respondents were sub-grouped into: a) upgrading of the education curriculum and inclusion of values formation; and b) provision of scholarship grants to students taking up technical/engineering courses but set a higher qualifying standards.

3. **DOLE employment facilitation programs** – 8.1% of the respondents cited the need for the Department of Labor and Employment to conduct extensive Jobs Fair and related employment facilitation programs.
4. **Review of labor laws** – 3.4% of respondents suggested the need for revision of labor laws and strictly impose its implementation.
5. **The regulation of overseas employment** (3.3%) was also considered as a form of government intervention by: a) setting a limit or policy on the deployment of workers; b) providing incentives to professionals for them to stay in the country; and c) requiring professionals to serve first the country for a number of years before they can work overseas.
6. **Good macro-economic governance** as cited by less than one percent (0.4%) of the respondents is urging the government to create a business-friendly environment that will attract more investors and yield more job opportunities in the long run.

A notable proportion (37.4%) of the respondents made no specific recommendation while 10.6% has no ready response to the issue.

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 Or visit our website at <http://www.bles.dole.gov.ph>

TABLE 3 - Number and Percent Distribution of Manufacturing Establishments with 20 or More Workers by Sub-Sector, Philippines: June 2006

Sub-sector	Number	Percent (%)
TOTAL	6,421	100.0
Mfg. of Food Products	1,025	16.0
Mfg. of Wearing Apparel	759	11.8
Mfg. of Chemicals & Chemical Products	419	6.5
Mfg. of Fabricated Metal Products Except Machinery & Equipment	413	6.4
Publishing, Printing & Reproduction of Recorded Media	411	6.4
Mfg. of Plastic Products	411	6.4
Mfg. & Repair of Furniture	329	5.1
Mfg. of Textiles	258	4.0
Mfg. of Machinery & Equipment	246	3.8
Mfg. of Basic Metals	218	3.4
Mfg. of Radio, TV & Communication Equipment & Apparatus	210	3.3
Mfg. of Paper & Paper Products	208	3.2
Mfg. of Other Non-Metallic Mineral, n.e.c.	191	3.0
Manufacturing, n.e.c.	173	2.7
Mfg. of Wood, Wood Products & Cork, Except Furniture	163	2.5
Mfg. of Beverages	143	2.2
Mfg. of Motor Vehicles, Trailers & Semi-Trailers	140	2.1
Mfg. of Electrical Machinery & Apparatus	133	2.1
Mfg. of Footwear	131	2.0
Mfg. of Rubber Products	97	1.5
Tanning & Dressing of Leather, Mfg. of Luggage & Handbags	66	1.0
Mfg. of Other Transport Equipment	60	1.0
Mfg. of Glass & Glass Products	55	0.8
Mfg. of Medical, Precision & Optical Instruments, Watches & Clocks	49	0.7
Mfg. of Office, Accounting & Computing Machinery	34	0.5
Mfg. of Cement	26	0.4
Mfg. of Tobacco Products	18	0.3
Mfg. of Coke, Refined Petroleum & Other Fuel Products	14	0.2
Mfg. of Articles of Bamboo, Rattan, etc., Mfg. of Plaiting Materials	13	0.2
Recycling	9	0.1

Source: BLES, 2006 BITS.

TABLE 4 - Occupations Perceived as Vital in Business Success of Manufacturing Establishments with 20 or More Workers, Philippines: June 2006

Major Occupation	Number of Specific Occupations	Frequency of Responses	Percent (%)
ALL OCCUPATIONS	220	18,628	100.0
Managers, Managing Proprietors and Supervisors	30	7,410	39.8
Professionals	30	1,700	9.1
Technical and Associate Professionals	25	2,226	11.9
Clerks	12	1,596	8.6
Sales Workers	2	429	2.3
Service Workers	3	30	0.2
Trades and Related Workers	51	2,043	11.0
Plant and Machine Operators and Assemblers	59	2,715	14.6
Laborers and Unskilled Workers	8	479	2.6

Source: BLES, 2006 BITS.

TABLE 6 – Proposed Government Interventions to Address Problem of Labor Shortage in Vital Occupations in Manufacturing Establishments with 20 or More Workers, Philippines: June 2006

Intervention	Number	Percent
TOTAL	1,317	100.0
Skills training	270	20.5
Improve quality of education	214	16.2
Strengthen Jobs Fair/PESO/LMI	107	8.1
Revision of laws/Labor Code/Other issuances	45	3.4
Regulate the overseas deployment of professional workers	44	3.3
Good macro-economic management	5	0.4
No recommendation/Not relevant	493	37.4
No response	140	10.6

Note: Details may not add up to total due to rounding of figures.

Source: BLES, 2006 BITS.

TABLE 5 - List of Hard-to-Fill Occupations in the Manufacturing Industry
with 20 or More Workers, Philippines: June 2006

1. PROFESSIONAL NURSES	68. PHILOLOGISTS, TRANSLATORS AND INTERPRETERS
2. INDUSTRIAL ENGINEERS	69. MACHINE-TOOL OPERATORS
3. ACCOUNTANTS AND AUDITORS	70. PERSONNEL AND HUMAN RESOURCE DEVELOPMENT PROFESSIONALS
4. PRODUCTION SUPERVISORS AND GENERAL FOREMEN	71. CARPENTERS AND JOINERS
5. SAFETY, HEALTH AND QUALITY INSPECTORS (VEHICLES, PROCESSES	72. TOOL-MAKERS AND RELATED WORKERS
6. TECHNICAL AND COMMERCIAL SALES REPRESENTATIVES	73. ELECTRICAL EQUIPMENT ASSEMBLERS
7. CHEMICAL ENGINEERS	74. MECHANICAL MACHINERY ASSEMBLERS
8. SEWERS, EMBROIDERERS AND RELATED WORKERS	75. OTHER SPECIALIZED MANAGERS
9. DECORATORS AND COMMERCIAL DESIGNERS	76. METAL MOLDERS AND COREMAKERS
10. MECHANICAL ENGINEERS	77. PRODUCTION AND OPERATIONS MANAGERS NOT ELSEWHERE CLASSIFIED
11. PRODUCTION AND OPERATIONS MANAGERS IN MANUFACTURING	78. LIFTING-TRUCK OPERATORS
12. TEXTILE, LEATHER AND RELATED PATTERN MAKERS AND CUTTERS	79. PRODUCTION CLERKS
13. SHOP SALESPERSONS AND DEMONSTRATORS	80. BACTERIOLOGISTS, PHARMACOLOGISTS, PATHOLOGISTS AND RELATED
14. SEWING MACHINE OPERATORS	81. ADMINISTRATIVE SECRETARIES AND RELATED ASSOCIATEPROFESSIONALS
15. OTHER ENGINEERS AND RELATED PROFESSIONALS	82. AGRICULTURAL OR INDUSTRIAL-MACHINERY MECHANICS AND FITTERS 7234
16. CHEMISTS	83. MOTOR VEHICLE MECHANICS AND RELATED TRADES WORKERS
17. ACCOUNTING AND BOOKKEEPING CLERKS	84. FOOD PRESERVERS
18. PRESSMAN LETTERPRESS AND RELATED WORKERS	85. HEAVY TRUCK AND LORRY DRIVERS
19. ELECTRICAL ENGINEERS	86. PHARMACISTS
20. SALES AND MARKETING MANAGERS	87. SUPPLY AND DISTRIBUTION MANAGERS
21. COMPUTER EQUIPMENT OPERATORS	88. CAR, TAXI AND VAN DRIVERS
22. DRAFTSMEN	89. TAILORS, DRESSMAKERS AND HATTERS
23. BAKERS, PASTRY COOKS AND CONFECTIONERY MAKERS	90. SECRETARIES
24. COMPUTER PROGRAMMERS	91. BUSINESS MACHINES MECHANICS AND REPAIRERS*
25. PHOTOGRAPHERS AND IMAGE AND SOUND RECORDING EQUIPMENTOPERATORS	92. METAL FINISHING-, PLATING- AND COATING-MACHINE OPERATORS
26. PLASTIC PRODUCTS MACHINE OPERATORS	93. FRUIT, VEGETABLE AND NUT PROCESSING MACHINE OPERATORS
27. WELDERS AND FLAMECUTTERS	94. VENEER CUTTERS
28. OTHER PHYSICAL SCIENCE AND ENGINEERING TECHNICIANS	95. METAL, RUBBER AND PLASTIC PRODUCTS ASSEMBLERS
29. ELECTRONICS AND COMMUNICATIONS ENGINEERS	96. BREWERS, WINE AND OTHER BEVERAGE MACHINE OPERATORS
30. BUILDING AND RELATED ELECTRICIANS	97. GEODETIC AND RELATED PROFESSIONALS
31. PRODUCTION AND OPERATIONS MANAGERS IN BUSINESS SERVICES	98. CRANE, HOIST AND RELATED PLANT OPERATORS
32. DIRECTORS AND CHIEF EXECUTIVES OF CORPORATIONS	99. INDUSTRIAL-ROBOT OPERATORS
33. MECHANICAL ENGINEERING TECHNICIANS	100. PROTECTIVE SERVICES WORKERS NOT ELSEWHERE CLASSIFIED
34. ELECTRICAL MECHANICS AND FITTERS	101. WOOD AND RELATED PRODUCTS ASSEMBLERS
35. WOOD PRODUCTS MACHINE OPERATORS	102. GENERAL MANAGERS/MANAGING-PROPRIETORS IN PERSONAL CARE, CLEANING
36. SYSTEMS ANALYSTS AND DESIGNERS	103. JEWELRY AND PRECIOUS-METAL WORKERS
37. FINANCE AND ADMINISTRATION MANAGERS	104. RUBBER PRODUCTS MACHINE OPERATORS
38. PAPERMAKING-PLANT OPERATORS	105. UPHOLSTERERS AND RELATED WORKERS
39. CHEMICAL ENGINEERING TECHNICIANS	106. COMPUTER ENGINEERS AND RELATED PROFESSIONALS
40. WEAVERS, KNITTERS AND RELATED WORKERS	107. STOCK CLERKS
41. OTHER COMPUTER PROFESSIONALS	108. OTHER ADMINISTRATIVE ASSOCIATE PROFESSIONALS
42. OTHER SUPERVISORS NOT ELSEWHERE CLASSIFIED	109. ARCHITECTS
43. RESEARCH AND DEVELOPMENT MANAGERS	110. ESTATE AGENTS
44. ELECTRONICS AND COMMUNICATIONS ENGINEERING TECHNICIANS	111. DATA ENTRY OPERATORS
45. ELECTRICAL ENGINEERING TECHNICIANS	112. WAITERS, WAITRESSES AND BARTENDERS
46. HAND PACKERS AND OTHER MANUFACTURING LABORERS	113. MACHINE-TOOL SETTERS AND SETTER-OPERATORS
47. PAPER PULP PLANT OPERATORS	114. EARTH-MOVING AND RELATED PLANT OPERATORS
48. CEMENT AND OTHER MINERAL PRODUCTS MACHINE OPERATORS	115. FREIGHT HANDLERS
49. AUTHORS, JOURNALISTS AND OTHER WRITERS	116. LOCOMOTIVE-ENGINE DRIVERS
50. MARINE CRAFT MECHANICS	117. SHOEMAKING AND RELATED MACHINE OPERATORS
51. OTHER OFFICE CLERKS	118. MEDICAL TECHNOLOGISTS
52. STRUCTURAL-METAL PREPARERS, ERECTORS AND RELATED WORKERS	119. STATISTICAL, MATHEMATICAL AND RELATED ASSOCIATEPROFESSIONALS
53. SHOEMAKERS AND RELATED WORKERS	120. RATTAN, BAMBOO AND OTHER WICKER FURNITURE MAKERS
54. INDUSTRIAL ROBOT CONTROLLERS	121. LEATHER-PREPARING MACHINE OPERATORS
55. OTHER SALES SUPERVISORS	122. ASSEMBLING LABORERS
56. BUYERS	123. AIR TRANSPORT SERVICE SUPERVISORS
57. METAL DRAWERS AND EXTRUDERS	124. AIRCRAFT ENGINE MECHANICS AND FITTERS
58. CASHIERS AND TICKET CLERKS	125. OTHER MACHINE OPERATORS AND ASSEMBLERS
59. METAL MELTERS, CASTERS AND ROLLING-MILL OPERATORS	126. GENERAL MANAGERS/MANAGING-PROPRIETORS IN MANUFACTURING
60. STEAM ENGINE AND BOILER OPERATORS	127. TOWN PLANNERS AND RELATED PROFESSIONALS
61. PRODUCTION AND OPERATIONS MANAGERS IN AGRICULTURE, HUNTING, FORESTRY AND FISHERY	128. ADVERTISING AND PUBLIC RELATIONS MANAGERS
62. DEBT COLLECTORS AND RELATED WORKERS	129. GENERAL MANAGERS/MANAGING-PROPRIETORS IN WHOLESALE
63. CRUSHING, GRINDING AND CHEMICAL-MIXING MACHINERY OPERATORS	130. OTHER BUSINESS PROFESSIONALS
64. PLUMBERS, PIPE FITTERS AND OTHER RELATED WORKERS	131. SHIP AND AIRCRAFT CONTROLLERS AND TECHNICIANS
65. CIVIL ENGINEERS	132. OTHER BUSINESS SERVICES AGENTS AND TRADE BROKERS
66. PERSONNEL AND INDUSTRIAL RELATIONS MANAGERS	133. BOOKKEEPERS
67. SALES SUPERVISORS IN WHOLESALE TRADE	134. GLASS-MAKERS, CUTTERS, GRINDERS AND FINISHERS

Source: BLES, 2006 BITS.