

# Gender Differentials in Fields of Study among University Graduates, 2010

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## Introduction

The educational profile of the Singapore resident population<sup>1</sup> improved significantly between 2000 and 2010.

In particular, the number of university graduates<sup>2</sup> in the Singapore resident population more than doubled from 266,600 in 2000 to 634,100 in 2010. Among the resident university graduates in 2010, 326,400 were males and 307,700 were females.

While male university graduates outnumbered their female counterparts, there were some fields of study<sup>3</sup> where females outnumbered males.

This article examines the gender distribution in fields of study among university graduates in the Singapore resident population in 2010, and the changes over the past decade.

Data are drawn from the Singapore Censuses of Population 2000 and 2010.

## Five Most Common Fields of Study

Business & Administration was the most common field of study in 2010, with almost one in three (32 per cent) university graduates obtaining their highest qualifications in this field (Table 1).

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- 1 The Singapore resident population comprises Singapore citizens and permanent residents.
  - 2 Refer to persons aged 15 years and over who are not attending educational institutions as full-time students and have a Bachelor Degree, Postgraduate Diploma (including National Institute of Education postgraduate diploma), Masters, or Doctorate.
  - 3 Refers to the principal discipline, branch or subject matter of study that leads to the award of the highest qualification attained at university level. The Singapore Standard Educational Classification (SSEC) 2000 and 2010 are used to classify the subject matter of study for the data in 2000 and 2010 respectively. More information on the SSEC is available from the SingStat website at <http://www.singstat.gov.sg/statsres/ssc/ssec.html>.

TABLE 1 RESIDENT UNIVERSITY GRADUATES AGED 15 YEARS AND OVER  
 BY FIELD OF STUDY, 2000 AND 2010

Field of Study	Number		Per Cent	
	2000	2010	2000	2010
Total	266,631	634,098	100.0	100.0
Business & Administration	82,038	204,037	30.8	32.2
Engineering Sciences	60,656	135,945	22.7	21.4
Humanities & Social Sciences	35,940	74,126	13.5	11.7
Information Technology	16,284	61,859	6.1	9.8
Natural, Physical, Chemical & Mathematical Sciences	19,032	47,961	7.1	7.6
Health Sciences	11,725	29,912	4.4	4.7
Education	6,622	18,296	2.5	2.9
Architecture & Building	7,775	15,781	2.9	2.5
Mass Communication & Information Science	4,382	14,511	1.6	2.3
Law	6,884	12,085	2.6	1.9
Fine & Applied Arts	5,230	9,583	2.0	1.5
Others	10,062	10,003	3.8	1.6

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

Other most common fields of study were Engineering Sciences (21 per cent), Humanities & Social Sciences (12 per cent), Information Technology (9.8 per cent), and Natural, Physical, Chemical & Mathematical Sciences (7.6 per cent).

In comparison, less than 5 per cent of university graduates obtained their highest qualifications in each of the respective fields of Health Sciences, Education, Architecture & Building, Mass Communication & Information Science, Law, and Fine & Applied Arts.

## Gender Distribution by Field of Study

### *Females Outnumbered Males in More Fields of Study*

Females outnumbered males in three of the five most common fields of study,

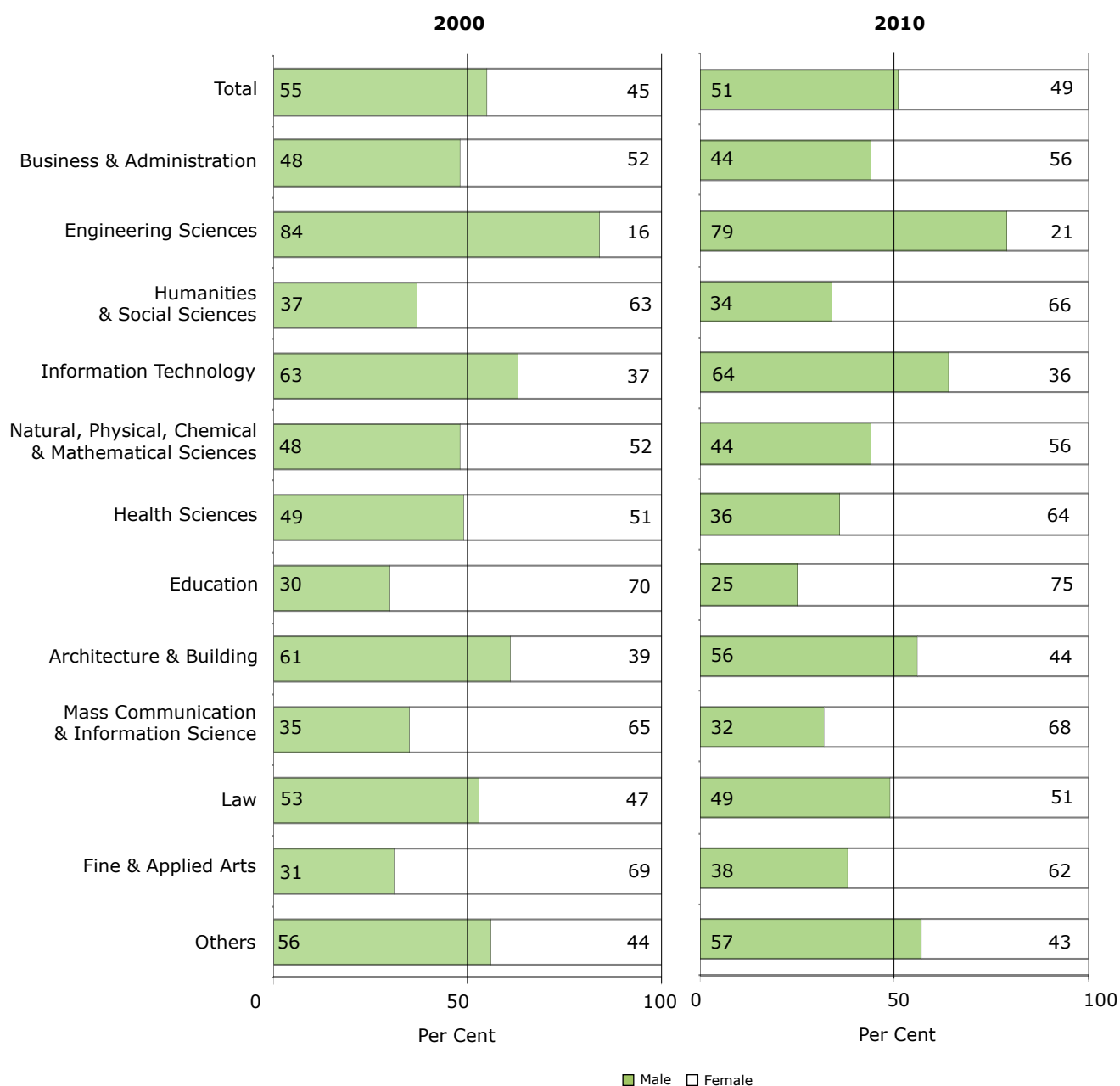
namely, Business & Administration, Humanities & Social Sciences and Natural, Physical, Chemical & Mathematical Sciences (Chart 1).

Among university graduates who studied Business & Administration and Natural, Physical, Chemical & Mathematical Sciences, the proportion of female graduates in each of these fields of study was 56 per cent in 2010, up from 52 per cent in 2000.

Similarly, the proportion of female graduates in Humanities & Social Sciences increased from 63 per cent in 2000 to 66 per cent in 2010.

Females also accounted for the majority in other fields of study such as Health Sciences (64 per cent), Education (75 per cent), Mass Communication & Information

CHART 1 RESIDENT UNIVERSITY GRADUATES BY FIELD OF STUDY AND SEX, 2000 AND 2010



Science (68 per cent), and Fine & Applied Arts (62 per cent).

Among university graduates who studied Law, females formed a slight majority (51 per cent) in 2010. In contrast, slightly less than half (47 per cent) of university graduates in 2000 who studied Law were females.

**More Male Graduates in Engineering Sciences, Information Technology and Architecture & Building**

Nearly eight in ten (79 per cent) university graduates in 2010 who obtained their highest qualifications in Engineering Sciences were males. This represented a decline from 84 per cent in 2000.

Males also formed the majority of the university graduates in 2010 who obtained their highest qualifications in Information Technology (64 per cent) and Architecture & Building (56 per cent).

## **Gender Differentials in Fields of Study by Age Group**

### ***Younger Female Graduates Formed the Majority in Three of the Top Five Fields of Study***

For the five most common fields of study in 2010, the gender differential varied across different age groups.

In the field of Business & Administration, females formed the majority among university graduates aged 25 to 39 years (Chart 2). Females accounted for 66 per cent of graduates aged 25-29 years and 62 per cent of those aged 30-39 years.

However, males outnumbered females among university graduates aged 40 years and over in this field of study. Only 42 per cent of the graduates in this field aged 40 years and over were females.

Similarly, among university graduates who obtained their highest qualifications in Natural, Physical, Chemical & Mathematical Sciences, 69 per cent of those aged 25-29 years and 61 per cent of those aged 30-39 years were females. However, only 45 per cent of those aged 40 years and over were females.

In Humanities & Social Sciences, females outnumbered males across all age groups. Among university graduates who obtained their highest qualifications in Humanities & Social Sciences, 71 per cent of those aged 25-29 years and 30-39 years respectively and 59 per cent of those aged 40 years and over were females.

### ***Higher Proportion of Females in Engineering Sciences and Information Technology Among Younger Age Groups***

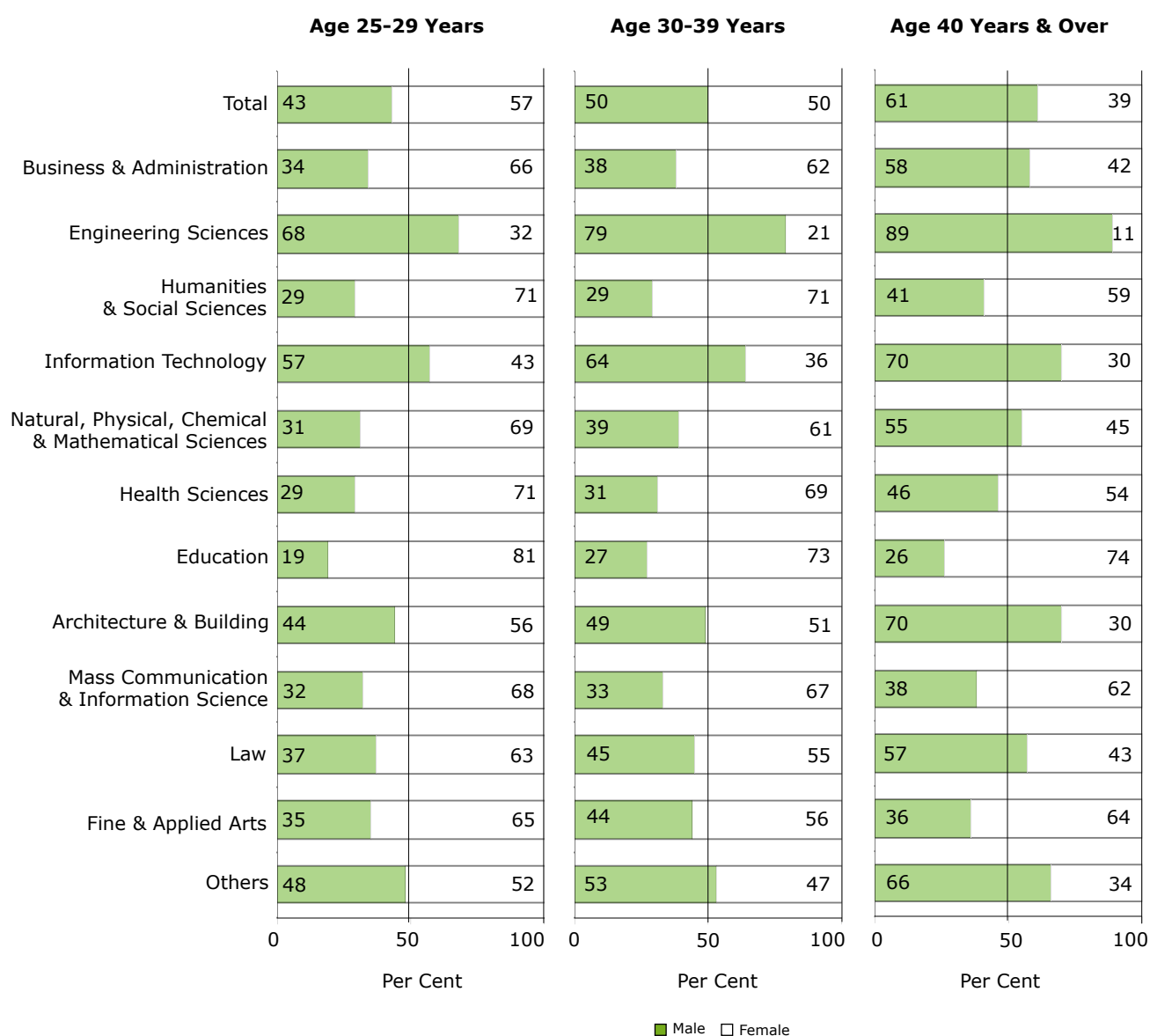
Among the five most common fields of study in 2010, male graduates outnumbered females across all age groups in Engineering Sciences and Information Technology.

Nevertheless, the proportions of female university graduates in these two fields of study were higher in the younger age groups than the older age groups.

In 2010, among university graduates who obtained their highest qualifications in Engineering Sciences, the proportion of females was 32 per cent for those aged 25-29 years, 21 per cent for those aged 30-39 years, and 11 per cent for those aged 40 years and over.

Similarly, among university graduates who obtained their highest qualifications in Information Technology, the proportion of females was 43 per cent for those aged 25-29 years, 36 per cent for those aged 30-39 years, and 30 per cent for those aged 40 years and over.

CHART 2 RESIDENT UNIVERSITY GRADUATES BY AGE GROUP, FIELD OF STUDY AND SEX, 2010



### Conclusion

While male university graduates outnumbered their female counterparts at the overall level in 2010, there were more female than male university graduates in a wide range of fields of study, continuing the trend observed in 2000. Nevertheless, the proportions of female graduates in many

of the fields of study were higher in 2010 compared to 2000.

For the five most common fields of study, young female graduates either outnumbered their male counterparts or saw increases in their proportions in fields of study where males were the majority, compared to the older graduates.

# Singapore Standard Classification of Type of Dwelling

The Singapore Department of Statistics released the standard statistical classification of 'Type of Dwelling' in January 2012.

Key characteristics of the standard classification are highlighted in this article.

## Definition

A dwelling refers to a building or part of a building used or intended to be used by one or more persons as living quarters.

Each dwelling type has its own separate entrance(s) with direct access to a public road or pathway.

A dwelling may be a residential building by itself or a unit in a residential building, or part of a non-residential building such as a shop or factory with space used as living quarters.

## Structure and Principles of the Classification

The structure of the standard classification of type of dwelling makes reference to the recommendations outlined in the *Principles and Recommendations for Population and Housing Censuses (Revision 2)* by the United Nations (UN).

Appropriate modifications were made to take into account the characteristics of Singapore's housing landscape.

The standard classification is a hierarchical structure with three broad categories at the highest level (Chart 1).

Reported or known dwelling types are categorised as either housing units or collective dwellings.

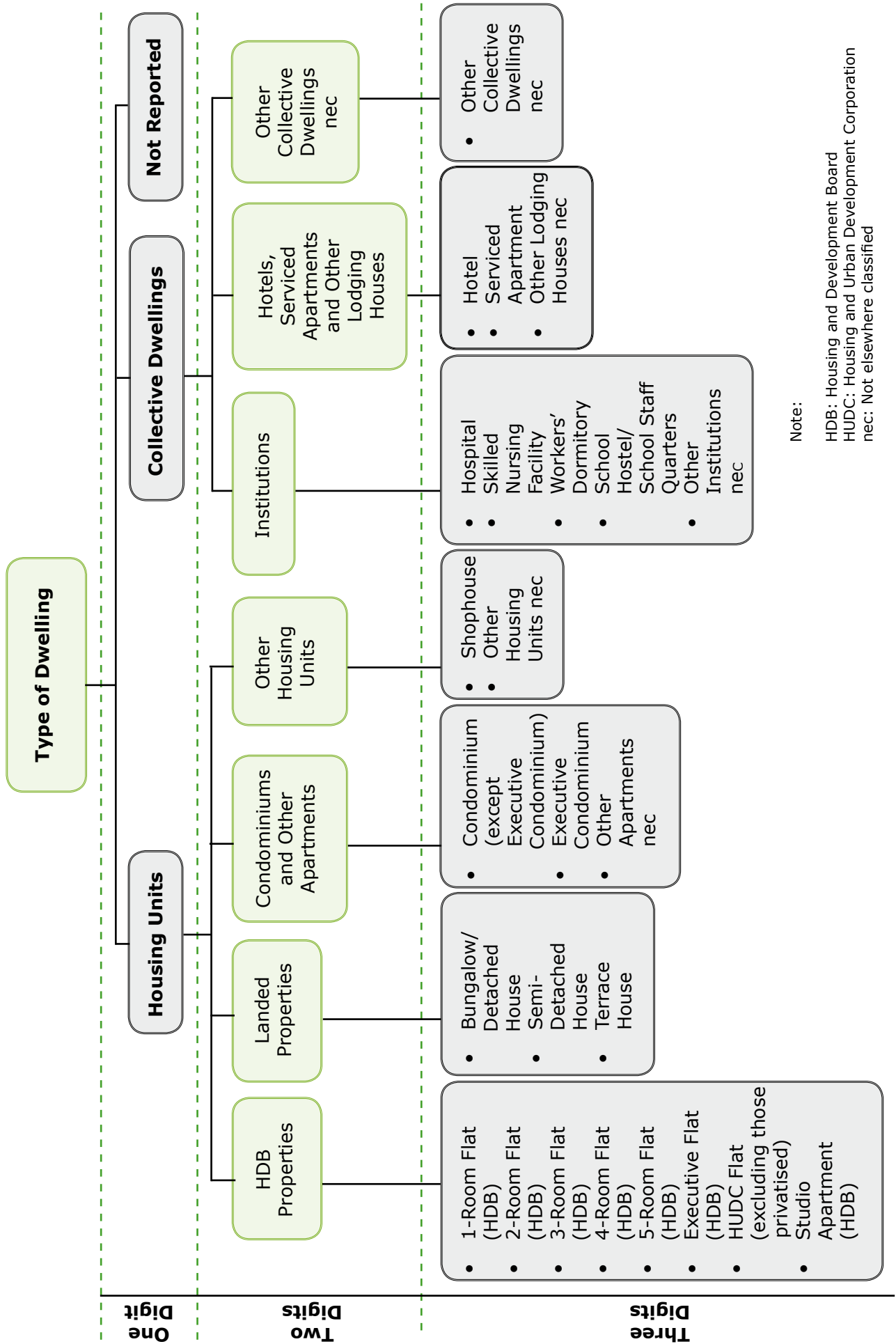
Housing units comprise Housing and Development Board (HDB) properties, landed properties, condominiums and other apartments, and other housing units which are less commonly found (e.g. housing units with mixed purposes and structures unique to the local context).

Landed properties and condominiums and other apartments are grouped by their structure at the detailed level.

HDB properties generally follow the category assigned by the HDB.

Collective dwellings include institutions (e.g. hospitals and school hostels), hotels, serviced apartments and other lodging houses. They are grouped by their respective purpose or function.

CHART 1 OVERVIEW OF TYPE OF DWELLING



## **Classification of Specific Dwelling Types**

To better reflect the characteristics of Singapore's housing landscape, unique codes are assigned for specific dwelling types.

### ***Housing and Urban Development Corporation (HUDC) Flats***

Housing and Urban Development Corporation (HUDC) flats were developed in the 1970s and 1980s, but their development has since ceased in 1987. Subject to voting by residents, HUDC estates may be privatised to allow residents more control over the management of their estates.

Privatised estates are no longer under the management of the HDB and are classified as 'Other Apartments nec' under 'Condominiums and Other Apartments'. HUDC estates that are not privatised are classified as 'HUDC Flat' under 'HDB Properties'.

### ***Executive Condominiums***

The Executive Condominiums (ECs) housing scheme was launched by the HDB in 1996.

ECs are developed and sold by private developers.

They have facilities and designs comparable to private condominiums, with some restrictions imposed by the HDB for a period of time.

All ECs are classified as 'Executive Condominium' under 'Condominiums and Other Apartments'.

### ***Flats Built under the Design, Build and Sell Scheme***

To enable HDB housing to be more responsive and meet the needs and aspirations of Singaporeans, the Design, Build and Sell Scheme (DBSS) was introduced to bring about greater innovation in building and design and to offer more housing choices to the public by involving the private sector in the development and design of public housing.

Flats built under this scheme are subject to the HDB's rules and are classified based on their underlying structures (e.g. 4-room, 5-room HDB flat) under 'HDB Properties'.

More information on the  
Singapore Standard Classification of Type of Dwelling  
is available on the SingStat website at:

**<http://www.singstat.gov.sg/statsres/ssc/sctd.pdf>**



# 2011 in Brief



## Singapore's population

... reached 5.18 million in June 2011.



## Singapore's economy

... grew by 4.9 per cent.



## Mean years of schooling

... was 10.7 years for male resident non-students aged 25 years and over and 9.7 years for female resident non-students aged 25 years and over.



## Home ownership rate

... was 88.6 per cent.



## Per capita gross national income

... increased to S\$61,692.



## Gross national saving

... was S\$145.0 billion.



## Official foreign reserves

... increased to S\$308.4 billion.



## Labour force participation rate

... reached 75.6 per cent among males and 57.0 per cent among females.



## Resident unemployment rate (seasonally adjusted)

... was 3.0 per cent.



## Inflation rate

... was 5.2 per cent.



## Value added for the manufacturing sector

... amounted to S\$57.7 billion.



## Fixed asset investments

... reached S\$13.7 billion.



## Total trade

... reached S\$974.3 billion.



## International visitor arrivals

... was 13,170 thousand.



## Sea cargo handled

... reached 530 million tonnes.



## Air cargo handled

... was 1,868 thousand tonnes.



## Mobile phone subscriptions

... reached 1,496 per 1,000 population.



## Residential wired broadband household penetration rate

... was 104.4 per cent.



## Wireless broadband population penetration rate

... was 152.4 per cent.



## Crime rate

... declined to 606 per 100,000 population.

# Adoption of Singapore Standard Industrial Classification 2010 in the National Accounts: Output-Based GDP

## Introduction

The Singapore Standard Industrial Classification (SSIC) provides the basic framework for the classification of economic activities in Singapore. Besides being used in data collection, it is also used in the compilation, presentation and analysis of a wider range of statistics, including national income, production, and demographic, social and labour statistics.

SSIC 2010 adopts the framework of the International Standard Industrial Classification Revision 4 (ISIC Rev. 4), with appropriate modifications to account for Singapore's unique economic circumstances while enhancing international comparability. It also incorporates recent changes in economic activities to better reflect the structure of Singapore's economy.

The Singapore Department of Statistics (DOS) has recently adopted SSIC 2010 in the national accounts. With effect from the release of the Annual Survey of Singapore (AES) 2011, macro-economic statistics will be compiled and provided in accordance with SSIC 2010.

## Industrial Classification and SSIC 2010

The SSIC is a classification of economic activities undertaken by economic units.

It was developed in 1958 as the national industry classification system to reflect the prevailing range of economic activities then. However, the emergence of new industries meant that the classification has to be reviewed periodically to ensure its relevance and accuracy.

SSIC 2010 is the tenth edition of SSIC, replacing SSIC 2005. Economic units which engage in the same category of economic activities are classified in the same SSIC category, irrespective of ownership, legal organisation or mode of operation.

Similar to SSIC 2005, there are 22 broad sections in SSIC 2010 (Table 1). However, the number of two-, three- and four-digit codes is significantly higher in SSIC 2010 compared to SSIC 2005.

SSIC 2010 comprises 82 two-digit divisions, 204 three-digit groups, 388 four-digit classes, and 1,097 five-digit items. In comparison, SSIC 2005 has 64 two-digit divisions, 164 three-digit groups, 331 four-digit classes and 1,089 five-digit items.

## Reporting Format of Output-Based GDP

Table 2 compares the current SSIC 2010-based reporting format with the previous SSIC 2005-based format for output-based GDP estimates in the quarterly and annual

TABLE 1 COMPARISON OF BROAD SECTIONS IN SSIC 2010 AND SSIC 2005

SSIC 2010		SSIC 2005	
A	Agriculture and Fishing	A	Agriculture and Fishing
B	Mining and Quarrying	B	Mining and Quarrying
C	Manufacturing	C	Manufacturing
D	Electricity, Gas and Air-Conditioning Supply	D	Electricity and Gas Supply
E	Water Supply; Sewerage, Waste Management and Remediation Activities	E	Water Supply, Sewerage and Waste Management
F	Construction	F	Construction
G	Wholesale and Retail Trade	G	Wholesale and Retail Trade
H	Transportation and Storage	H	Transport and Storage
I	Accommodation and Food Services Activities	J	Hotels and Restaurants
J	Information and Communications	K	Information and Communications
K	Financial and Insurance Activities	L	Financial and Insurance Activities
L	Real Estate Activities	M	Real Estate, Rental and Leasing Activities
M	Professional, Scientific and Technical Activities	N	Professional, Scientific and Technical Activities
N	Administrative and Support Service Activities	O	Administrative and Support Service Activities
O	Public Administration and Defence	T	Public Administration and Defence
P	Education	P	Education
Q	Health and Social Services	Q	Health and Social Work
R	Arts, Entertainment and Recreation	R	Arts, Entertainment and Recreation
S	Other Service Activities	S	Other Service Activities
T	Activities of Households as Employers of Domestic Personnel	U	Domestic Work Activities
U	Activities of Extra-Territorial Organisations and Bodies	V	Extra-Territorial Organisations and Bodies
V	Activities not Adequately Defined	W	Activities not Adequately Defined

TABLE 2 REPORTING FORMAT FOR SSIC 2010 AND SSIC 2005

Current Format		Previous Format	
Industries	SSIC 2010 Sections	Industries	SSIC 2005 Sections
Good Producing Industries		Good Producing Industries	
Manufacturing	C	Manufacturing	C
Construction	F	Construction	F
Utilities	D-E	Utilities	D-E
Other Goods Industries	A-B	Other Goods Industries	A-B
Service Producing Industries		Service Producing Industries	
Wholesale & Retail Trade	G	Wholesale & Retail Trade	G
<b>Transportation &amp; Storage</b>	<b>H</b>	<b>Transport &amp; Storage</b>	<b>H</b>
<b>Accommodation</b>		<b>Hotels &amp; Restaurants</b>	<b>J</b>
<b>&amp; Food Services</b>	<b>I</b>		
Information & Communications	J	Information & Communications	K
<b>Finance &amp; Insurance</b>	<b>K</b>	<b>Financial Services</b>	<b>L</b>
Business Services	L-N	Business Services	M-O
Other Services Industries	O-T	Other Services Industries	P-U
Ownership of Dwellings <sup>1</sup>		Ownership of Dwellings <sup>1</sup>	

Economic Surveys of Singapore. While the current format is largely similar to the previous one, the descriptions of some industries have been revised.

### Re-compilation of Output-Based GDP

With the implementation of SSIC 2010 in the National Accounts, the output-based GDP series has been re-compiled on the basis of SSIC 2010.

While the re-classification of existing economic activities to a different industry (e.g. re-classification of libraries and archives

from 'Information and Communications' to 'Other Services') will not result in changes to overall GDP estimates, there were some revisions to industry value-added estimates.

Overall, the impact of the re-classifications on industry value-added estimates and industry share of Gross Value Added (GVA) was not significant.

In addition to the SSIC conversion, the GDP estimates also incorporate the latest annual survey results and other data updates. Historical estimates have also been revised.

<sup>1</sup> Ownership of dwellings does not fall into any section of the SSIC. It refers to housing services provided by owner-occupiers and individuals who let out their residential properties.

## Performance of the Services Sector in 2010

The Singapore Department of Statistics carries out an annual survey on the services sector to obtain financial and business data for studies and analyses. The Economic Survey Series comprises several reports, which examine in detail various key services industries in Singapore.

The latest survey was conducted in 2011 for reference year 2010. Six reports focusing on specific services industries and a final report presenting an overview of the overall services sector were released from September 2011 to March 2012.

The overall services sector<sup>1</sup> in 2010 comprised 135,200 establishments, and employed a total of 1,353,700 workers. This translated to an average of 10 workers per establishment. Operating receipts generated by the services

sector rose 21 per cent from \$1,421.4 billion in 2009 to \$1,723.1 billion in 2010. Operating surplus grew by 20 per cent to \$81.3 billion in 2010, while total value added of the sector amounted to \$150.8 billion, an increase of 15 per cent over the previous year.

The services sector comprises the following main industries:

- Wholesale and Retail Trade
- Accommodation and Food & Beverage Services
- Transport and Storage
- Information and Communications
- Business Services
- Recreation, Community and Personal Services<sup>2</sup>

Summary findings for selected services industries in 2010 are presented overleaf.

For more information, summary findings from the Economic Survey Series 2010 reports may be accessed via:

**[http://www.singstat.gov.sg/stats/themes/economy/biz/summary\\_findings\\_biz.html](http://www.singstat.gov.sg/stats/themes/economy/biz/summary_findings_biz.html)**

The full reports containing more detailed statistical tables of the various services industries in 2010 may be downloaded via:

**<http://www.singstat.gov.sg/pubn/business.html>**

1 Exclude all financial & insurance activities.

2 Exclude public administration activities.

### **Wholesale Trade**

There were about 33,500 establishments in the wholesale trade industry in 2010, hiring around 254,900 workers. On a per establishment basis, there was an average of 8 workers.

Operating receipts recorded by the wholesale trade industry rose 23 per cent over 2009 to reach \$1,440.8 billion in 2010, while operating surplus grew by 21 per cent to \$33.6 billion. Total value added generated by the industry amounted to \$50.3 billion, an increase of 16 per cent compared to 2009.

### **Retail Trade**

The retail trade industry comprised about 19,700 establishments in 2010, which employed around 120,600 workers, or an average of 6 workers per establishment.

Similar to 2009, operating receipts and operating surplus of the retail trade industry remained at \$37.4 billion and \$2.5 billion respectively in 2010. Total value added of the industry was \$5.4 billion, representing a 1.9 per cent increase over 2009.

### **Transport & Storage Services**

The transport & storage services industry comprised about 9,580 establishments in 2010 and employed around 166,600 workers. This translated to an average of 17 workers per establishment.

Operating receipts by the transport and storage industry registered growth of 16 per cent over 2009 to reach \$83.8 billion in 2010. Operating surplus rose 26 per cent to \$14.7 billion in 2010. Total value added generated by the industry increased 18 per cent to \$23.9 billion in 2010.

### **Food & Beverage Services**

The food & beverage services industry comprised about 6,200 establishments and engaged around 91,300 workers in 2010. On average, each establishment employed 15 workers.

Operating receipts of the food & beverage services industry was \$6,240 million in 2010, 11 per cent higher compared to 2009. Over the same period, operating surplus expanded by 13 per cent to \$503 million. Total value added recorded by the industry was \$2,207 million, an increase of 11 per cent compared to 2009.

### Information & Communications Services

In 2010, the information & communication services industry constituted about 6,600 establishments, employing around 78,500 workers. This represented an average of 12 workers per establishment.

Operating receipts of the information & communications industry increased 7.1 per cent to \$35.1 billion in 2010. Operating surplus grew by 1.9 per cent to \$4.9 billion within the same period. Total value added of the industry was \$11.0 billion in 2010, up 5.0 per cent from 2009.

### Health Services

There were about 4,100 establishments in the health services industry in 2010, employing around 66,100 workers, or an average of 16 workers per establishment.

Operating receipts collected by the health services industry rose 9.2 per cent over 2009 to \$8,946 million in 2010. Operating surplus increased 5.4 per cent to \$1,007 million in 2010. Total value added generated by the industry increased 13 per cent over 2009 to reach \$4,917 million in 2010.

## Overseas Visitors

The Singapore Department of Statistics (DOS) welcomed the following visitors over the past six months.

Topics discussed included the EU-ASEAN Statistical Capacity Building Programme as well as the development and use of administrative data for a register-based Census of Population.

### European Union

#### *EU-ASEAN Statistical Capacity Building Programme*

- Mr Neil Dourmashkin  
Consultant
- Mr Suman Khalid  
Consultant

### Maldives

#### *Department of National Planning*

- Ms Aishath Shahuda  
Deputy Executive Director
- Ms Fathimath Riyaza  
Assistant Director
- Ms Fathimath Nihan  
Assistant Systems Programmer

#### *National Center for Information Technology*

- Mr Naheed Mohamed Riza  
System Analyst

#### *Department of National Registration*

- Mr Mohamed Ameen  
Assistant Data Processing Officer

## Singapore Input-Output Tables 2007

The Singapore Department of Statistics (DOS) has released the 2007 Input-Output (I-O) tables. The I-O tables provide systematic and detailed information on the production activities of the Singapore economy by recording transactions between producers and consumers.

The 2007 I-O tables are an update of the 2005 benchmark I-O tables based on 2007 data. They are compiled based on the same 136 industries and 136 commodities as those of the 2005 tables. The methodologies and framework used are also similar to those used for the 2005 tables. The 2007 tables are an intermediate set of tables as DOS works towards compiling more frequent I-O tables to provide more timely statistical information for analysis and policy formulation.

The complete set of the 2007 I-O tables at the detailed industry and commodity levels, together with an information paper may be downloaded from the SingStat website at

<http://www.singstat.gov.sg/pubn/papers/economy.html#io2007>

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The *Statistics Singapore Newsletter* is issued half-yearly by the Singapore Department of Statistics.

It aims to provide readers with news of recent research and survey findings. It also serves as a vehicle to inform readers of the latest statistical activities in the Singapore statistical service.

Contributions and comments from readers are welcomed.

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