

## Fertility in Singapore: An Analysis by Parity Progression Ratio

By

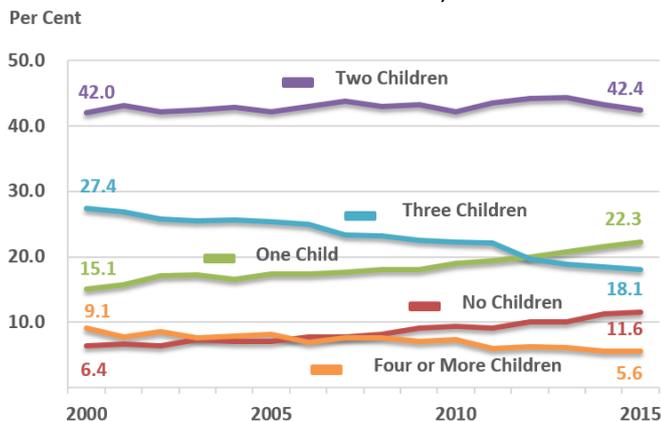
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### Introduction

Fertility has generally fallen over the years, although the Total Fertility Rate appeared to have stabilised at around 1.2 to 1.3 births per female in the past decade. From 2000 to 2015, among resident ever-married females aged 40-49 years who are more likely to have completed child-bearing, the proportion of those who remained childless or had only one child increased considerably (Chart 1).

CHART 1 RESIDENT EVER-MARRIED FEMALES AGED 40-49 YEARS BY NUMBER OF CHILDREN BORN, 2000-2015



Conversely, the proportion with three or more children showed a decreasing trend across the period. Nevertheless, having two children continued to be the norm.

This article examines Singapore's fertility trends after taking into account the number of births that a woman already had, through the use of parity progression ratio (PPR)<sup>1</sup>. It also investigates the relationship between the gender composition of existing children<sup>2</sup> and the probability of having an additional child.

Parity refers to the number of children ever born to a female. Parity order refers to the order of the births, e.g. first, second, third, fourth or higher order birth.

Parity progression ratio ( $PPR_x$ ) measures the probability that a female with a certain number of children ( $x$ ) will go on to have an additional child. It is computed using the following formula:

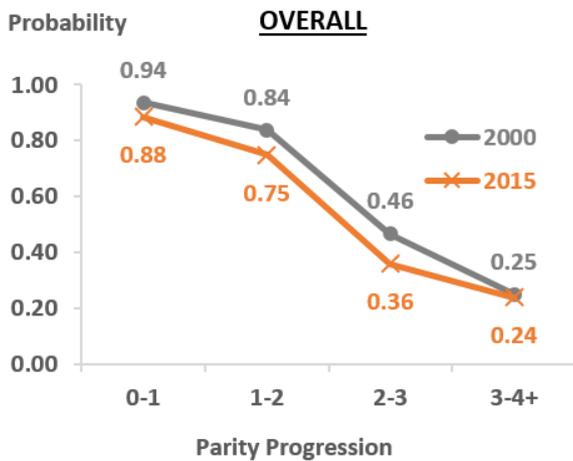
$$PPR_x = \frac{\text{Females with at least } x + 1 \text{ child ever born}}{\text{Females with at least } x \text{ children ever born}}$$

1 Data are based on resident ever-married females aged 40-49 years from the Census of Population 2000 and General Household Survey 2015.  
2 Data are based on females who declared all her children ever-born as living in the same household as them as at the survey reference period.

## General Observations

Congruent with the observation that having two children was the most common among resident ever-married females aged 40-49 years, the probabilities of progression to have a first and second child were high, but declined sharply with three or more children (Chart 2).

CHART 2 PARITY PROGRESSION RATIO (PPR) OF RESIDENT EVER-MARRIED FEMALES AGED 40-49 YEARS



Among those aged 40-49 years in 2015 who were ever-married, close to nine in ten became mothers. Three-quarters of those with one child progressed to have a second child. Only around one in three of those with two children went on to have a third child. After having three children, the prevalence of those who went on to have additional children dropped further to slightly less than a quarter.

The likelihood of progression to have a first, second and third child was at least six percentage-points lower for females aged 40-49 years in 2015 compared to their counterparts of the same age in 2000. For progression from third to fourth or higher parity orders, the probability was comparable between the two groups of females.

## By Ethnic Group

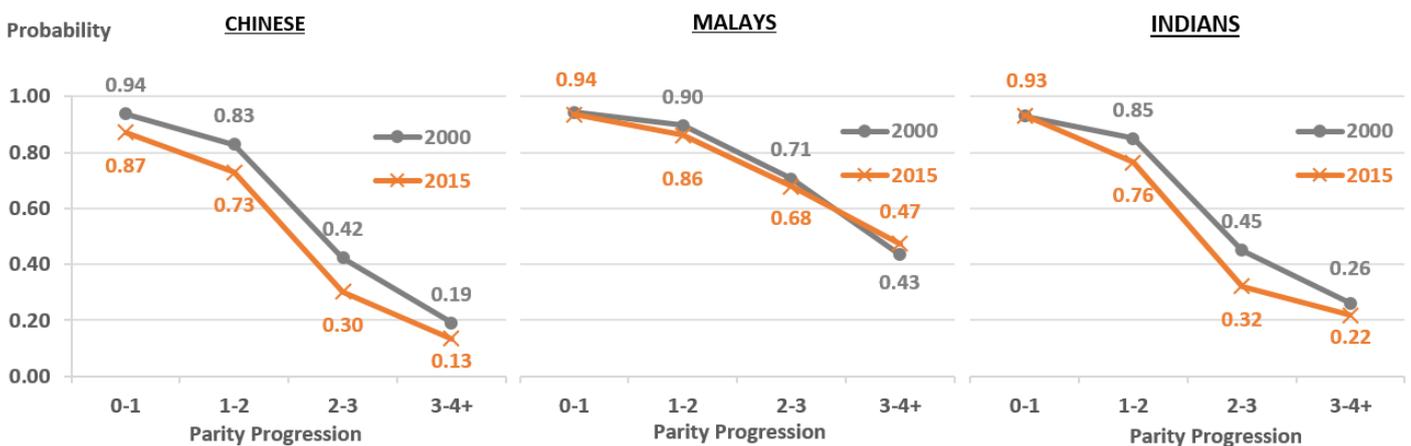
The broad trends in parity progression were largely similar across the three main ethnic groups (Chart 3).

Amongst them, the Malays were the most likely to give birth to an additional child for all parity orders. In particular, the odds of progressing from two to three children were pronouncedly higher at around seven in ten among the Malays aged 40-49 years in 2015, more than twice the corresponding prevalence for the Chinese and Indians.

Between 2000 and 2015, the Chinese had a lower likelihood of having another child across all parity orders. Similarly, a noticeable drop in the probability of progression to the second or third children was also observed among the Indians over the same period.

In contrast, Malay females aged 40-49 years in 2015 were almost as likely as those in 2000 to bear another child across all parity orders.

CHART 3 PPR OF RESIDENT EVER-MARRIED FEMALES AGED 40-49 YEARS BY ETHNIC GROUP



## By Gender Composition of Existing Children and Ethnic Group

Are parents’ decision to have an additional child influenced by the gender of their existing children? The following sections attempt to answer this question by examining the gender composition of existing children and subsequent parity progression.

### By Gender of First Child

Mothers who had a boy for their first child were almost as likely as those who had a girl, to have a second child (Chart 4). Similar observations can be seen across all ethnic groups (Chart 5). This suggests that the gender of the first child has little impact on the parents’ decision to have a second child.

CHART 4 PPR FROM FIRST TO SECOND BIRTHS AMONG RESIDENT EVER-MARRIED FEMALES AGED 40-49 YEARS BY GENDER OF FIRST CHILD

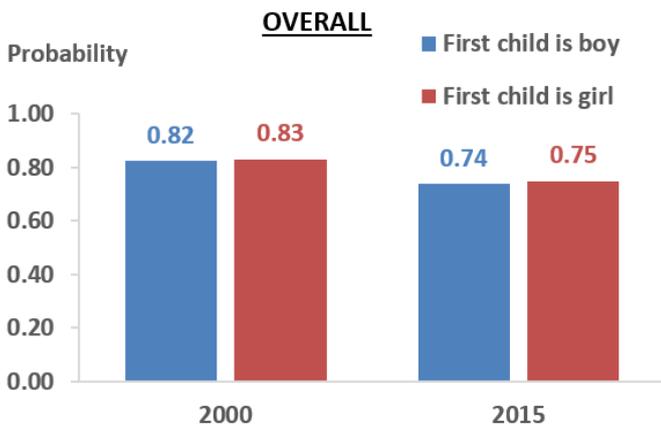
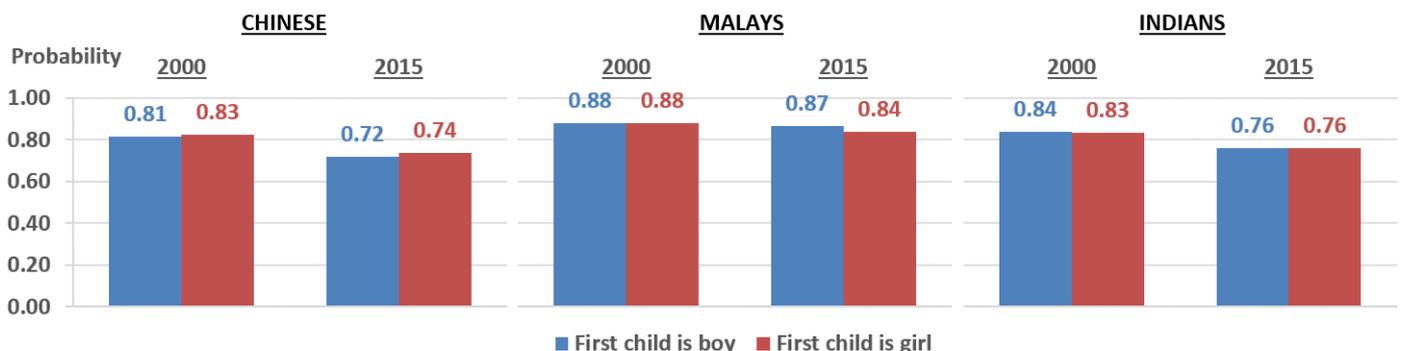


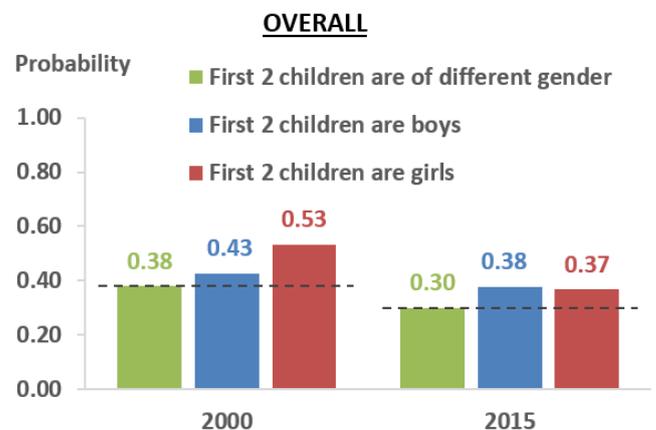
CHART 5 PPR FROM FIRST TO SECOND BIRTHS AMONG RESIDENT EVER-MARRIED FEMALES AGED 40-49 YEARS BY GENDER OF FIRST CHILD AND ETHNIC GROUP OF FEMALE



## By Gender of First Two Children

Mothers who already had a boy and a girl were generally less likely to have a third child compared to mothers with two children of the same gender, regardless of whether they were both boys or both girls (Chart 6). This suggests a preference to have children of both genders.

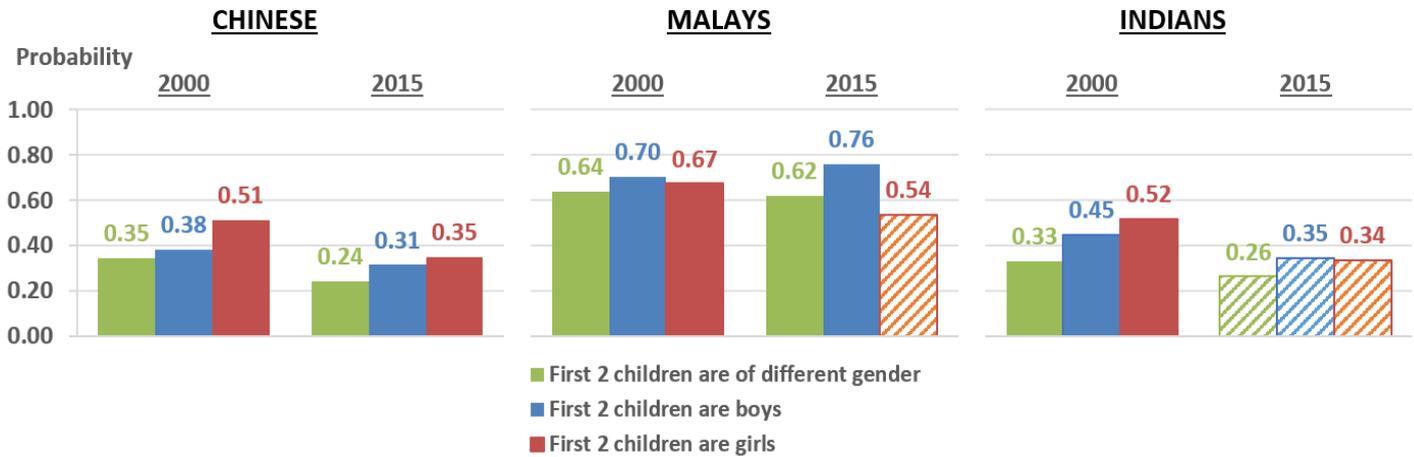
CHART 6 PPR FROM SECOND TO THIRD BIRTHS AMONG RESIDENT EVER-MARRIED FEMALES AGED 40-49 YEARS BY GENDER OF FIRST TWO CHILDREN



In 2000, mothers aged 40-49 years with two girls were more likely to have a third child compared to those with two boys, suggesting a greater desire to have a son then.

In 2015 however, the PPR from second to third birth fell to the same levels for those with two boys and two girls.

**CHART 7 PPR FROM SECOND TO THIRD BIRTHS AMONG RESIDENT EVER-MARRIED FEMALES AGED 40-49 YEARS BY GENDER OF FIRST TWO CHILDREN AND ETHNIC GROUP OF FEMALE**



Note: Figures represented by slashed bars are based on small sample sizes. Caution should be taken when interpreting these figures.

Among Chinese and Indian mothers aged 40-49 years in 2000, those who had two girls were most likely to bear another child, suggesting a preference to have at least one son in the family (Chart 7).

For the cohort aged 40-49 years in 2015, Chinese and Indian mothers who had two girls were about as likely to bear another child as mothers who had two boys. This could indicate that the desire for having sons has diminished to similar levels for having daughters.

In contrast, for the Malays, mothers with two boys were the most likely to have a third child, suggesting an inclination towards having at least one daughter in the family.

### Conclusion

The analysis by PPR shows that the majority of resident ever-married females became mothers, and a considerable proportion also went on to have their second child. Chinese and Indian mothers were more likely to stop childbearing after their second child as compared to the Malays.

Another observation is that the gender composition of existing children has some impact on the eventual completed family size. Mothers were more likely to give birth to a third child if their first two children were of the same gender, suggesting a preference to have children of both genders.



**Resources**

Data used in the analysis for this article are taken from:



[Singapore Census of Population 2000](#)  
[General Household Survey 2015](#)

# PPI Online E-Survey System (POES)

Launched in April 2017 by the Singapore Department of Statistics (DOS), the PPI (Producer Price Indices) Online E-Survey System (POES) offers respondents participating in PPI surveys a convenient online platform to submit the survey returns.

Not only is the POES easy-to-use, all submissions through POES are secure and kept in confidence. During each survey period, respondents will receive an email notification to submit their survey returns via the POES. Respondents who have CorpPass<sup>1</sup> accounts may submit the survey returns via the POES.

A respondent could fill up the online survey form or save a draft copy for completion at a later time.

Alternatively, a softcopy of the survey form may be downloaded for completion off-line and uploaded when it is completed.

Respondents are welcome to contact the officer-in-charge of the PPI survey for any queries.

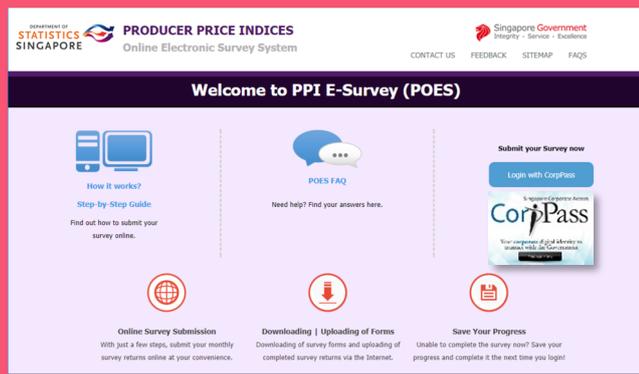
Visit the POES portal for more information!

[www.esurvey.singstat.gov.sg/poes](http://www.esurvey.singstat.gov.sg/poes)

<sup>1</sup> CorpPass is a corporate digital identity for businesses to transact with Government agencies online. For more information on how to obtain a CorpPass account, visit [www.corppass.gov.sg](http://www.corppass.gov.sg).

## 1 Logging in

You will be presented with this screen when you access the POES. Click on the blue button to login with a CorpPass ID.



## 2 My Surveys

Survey forms are customised for each respondent. Once logged in, you can ① access your survey forms, ② download the forms, or ③ upload the survey forms when these forms are completed.



## 3 Submitting My Forms

After entering the price information, you may ① submit the form, or ② save your work in progress and return to complete the survey later.



# Accessing More Data with Ease via SingStat Table Builder

*Plus tips to quickly download updates to preferred data tables*

Two new functions are now available to facilitate the download of time series data tables from the SingStat Table Builder ([www.singstat.gov.sg/tablebuilder](http://www.singstat.gov.sg/tablebuilder)). Read on to find out how you may tap on these features!

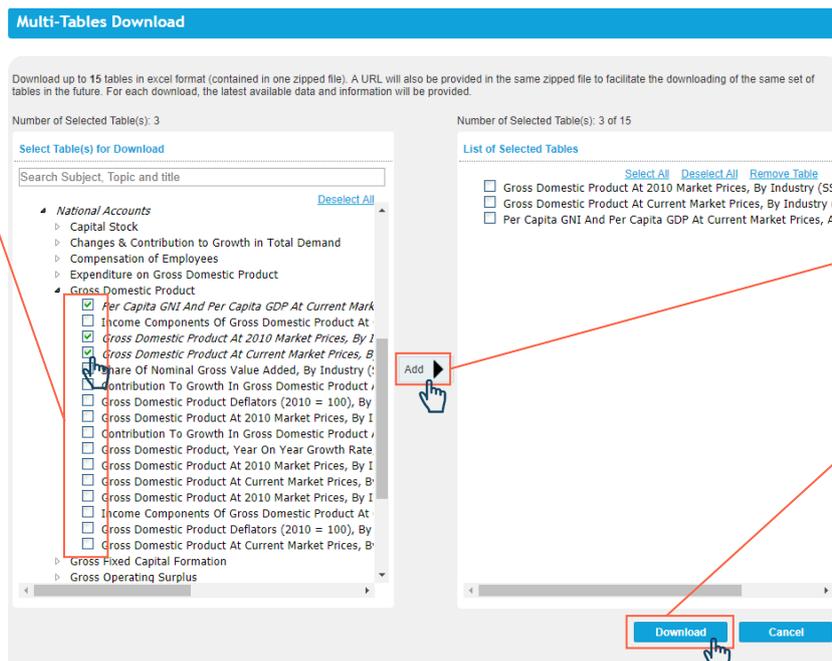
## Multi-Tables Download Function



The Multi-Tables Download function in the SingStat Table Builder allows you to download up to 15 data tables at-one-go. To use this feature, simply access it from the horizontal navigation bar on the SingStat Table Builder Homepage. The table selection

screen will be displayed. On this screen, select the tables you wish to download from the left panel and add them to the List of Selected Tables on the right panel. When you have completed your selection, click on the Download button.

1. Check the table(s) you wish to download



2. Add selected table(s) to the right panel

3. Click on 'Download' to proceed

A zipped file will be generated. It will contain the data tables you have selected neatly formatted in an Excel file. The first tab-sheet in the file lists the tables you have selected for easy access to the individual tables in the file.

If you wish to download the latest updated data for the same set of tables in the future, you may use the unique URL indicated in Text file.

No.	Subject	Title
1	National Accounts	<a href="#">Per Capita GNI And Per Capita GDP At Current Market Prices, Annual</a>
2	National Accounts	<a href="#">Gross Domestic Product At 2010 Market Prices, By Industry (SSIC 2015), Annual</a>
3	National Accounts	<a href="#">Gross Domestic Product At Current Market Prices, By Industry (SSIC 2015), Annual</a>

This URL may be reused to download the selected set of tables in the future. Tables will be downloaded with the latest available data and information at the point of download.  
<http://www.tablebuilder.singstat.gov.sg/publicfacing/downloadLink.action?key=f35f94803e65651a4d1008cd67b46e26108d704d>

## Application Programming Interface (API)



You can download commonly accessed tables in CSV and JSON formats using the API function in the SingStat Table Builder. To view the list of tables with API access, click on the API tab. From the list of tables with API access, you may

copy the API URL by right-clicking on the respective links to the CSV or JSON file and plugging them into your preferred programme. To view the formatted data tables, you may click on the titles from the API list.

Click to download the tables in CSV or JSON formats.

To extract the API endpoint URL, right-click and click on 'Copy link address'.

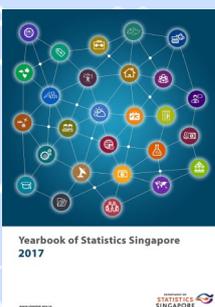
API

Search for the required tables by entering keywords and retrieve commonly accessed tables from the SingStat Table Builder in CSV or JSON formats using this API function. If there are other tables that you would like to obtain using the API function, please email [info@singstat.gov.sg](mailto:info@singstat.gov.sg)

Search  Go

No.	Subject	Topic	Title	CSV	JSON
1	Agriculture, Animal Production and Fisheries	Fisheries	Seafood Supply And Wholesale, Annual	CSV	JSON
2	Agriculture, Animal Production and Fisheries	Fisheries	Seafood Supply And Wholesale, Monthly	CSV	JSON
3	Births and Fertility	Births and Fertility, Annual/Quarterly/ Monthly	Average Number Of Children Born By Age Group Of Resident Ever-Married Females, Annual	CSV	JSON
4	Births and Fertility	Births and Fertility, Annual/Quarterly/ Monthly	Average Number Of Children Born To Resident Ever-Married Females Aged 40-49 Years By Highest Qualification Attained, Annual	CSV	JSON
5	Births and Fertility	Births and Fertility, Annual/Quarterly/ Monthly	Births And Fertility Rates, Annual	CSV	JSON
6	Births and Fertility	Births and Fertility, Annual/Quarterly/ Monthly	Live-Births By Birth Order, Annual	CSV	JSON
7	Births and Fertility	Births and Fertility, Annual/Quarterly/ Monthly	Live-Births By Birth Order, Quarterly	CSV	JSON
8	Births and Fertility	Births and Fertility, Annual/Quarterly/ Monthly	Live-Births By Sex And Ethnic Group, Monthly	CSV	JSON
9	Births and Fertility	Births and Fertility, Annual/Quarterly/ Monthly	Resident Ever-Married Females By Age Group And Number Of Children Born, Annual	CSV	JSON
10	Building, Real Estate, Construction and Housing	Building and Construction	Construction Quality Assessment System (CONQUAS) Average Scores By Category, Annual	CSV	JSON
11	Building, Real Estate, Construction and Housing	Building and Construction	Contracts Awarded And Progress Payments Certified By Sector And Development Type, Annual	CSV	JSON
12	Building, Real Estate, Construction and Housing	Building and Construction	Contracts Awarded By Sector And Development Type, Monthly	CSV	JSON
13	Building, Real Estate, Construction and Housing	Building and Construction	Progress Payments Certified By Sector And Development Type, Monthly	CSV	JSON
14	Building, Real Estate, Construction and Housing	Real Estate	Approval, Construction Commencement And Completion Of Commercial And Industrial Developments (Private And Public Sectors), Quarterly	CSV	JSON
15	Building, Real Estate, Construction and Housing	Real Estate	Approval, Construction Commencement And Completion Of Private Residential Properties, Quarterly	CSV	JSON
16	Building, Real Estate, Construction and Housing	Real Estate	Available And Vacant Commercial And Industrial Properties (End Of Period), Quarterly	CSV	JSON
17	Building, Real Estate, Construction and Housing	Real Estate	Available And Vacant Executive Condominiums And Supply Of Executive Condominiums In The Pipeline By Development Status (End Of Period), Quarterly	CSV	JSON
18	Building, Real Estate, Construction and Housing	Real Estate	Available And Vacant Private Residential Properties (End Of Period), Quarterly	CSV	JSON
19	Building, Real Estate, Construction and Housing	Real Estate	Supply Of Commercial And Industrial Properties In The Pipeline By Development Status, (Private And Public Sectors) (End Of Period), Quarterly	CSV	JSON

Click on title(s) to access the table(s) on your browser



### Yearbook of Statistics Singapore (YOS) 2017 has been released!

YOS 2017 provides a comprehensive and current statistical view of the key socio-demographic and economic characteristics of Singapore with over 270 statistical tables. The **infographics** featured in the chapter write-ups provide interesting highlights.

The inclusion of relevant **SingStat Table Builder** links for the YOS tables facilitates users' access to historical data series.

Access the YOS 2017 [here!](#)

## Household Expenditure Survey 2017/18

The Singapore Department of Statistics (DOS) conducts the Household Expenditure Survey (HES) at five-year intervals. The eleventh HES will be carried out for a year starting from **October 2017**.

The HES collects detailed information on the latest consumption expenditure of persons and households. One main objective of the HES is to update the weighting pattern and basket of goods and services for the Consumer Price Index (CPI), an indicator of inflation in Singapore. Data collected are also used to support social and economic policy planning and studies on households' consumption patterns.

Some 13,100 households in Singapore have been selected to participate in the coming HES. These households will be divided into batches, and each selected household will be required to record their daily and regular expenditure over a period of two weeks.

In addition, information on the availability of consumer durables and services in their households, purchase of household durables, travel expenses as well as socio-economic characteristics (including their income, savings and loans) will be collected.

Households selected for the survey will receive a notification package from the DOS by post prior to their respective survey start dates. Survey officers will visit all selected households to explain the details and assist them in the survey. Internet submission will also be introduced in the HES for the first time to allow flexibility for respondents to complete the survey and expenditure recording online at their convenience.

A series of publicity activities for HES 2017/18 will be launched to generate public awareness of the survey. These include monthly press releases and display of HES posters at mass rapid transit (MRT) stations and other public locations.

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For queries and feedback during the survey period,  
kindly contact us via

Email [singstat\\_hes@singstat.gov.sg](mailto:singstat_hes@singstat.gov.sg)

HES  
Hotline **1800-888-1718**

For more information, visit the HES 2017/18 Website  
<http://www.singstat.gov.sg/hes1718>



# Household Expenditure Survey

住戶開銷調查

Tinjauan Perbelanjaan Keluarga

குடும்பச் செலவினக் கருத்தாய்வு

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For more information, please visit [www.singstat.gov.sg/hes1718](http://www.singstat.gov.sg/hes1718)

