

# シンガポールにおける現代的統計制度の成立

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## (要旨)

シンガポール大統領が1968年に招集し、当時の政府統計のレビューとシンガポール経済の工業化推進にかなう統計制度及びそれを実現するための具体的な施策の勧告を諮問した統計制度調査会の答申が、シンガポールにおける現代統計制度の成立に果たした役割を検討した。

シンガポールの統計制度は統計制度調査会の答申を景気とした改革によって、一極集中型から分散型に移行し、近年は統合型にむかっている。登録ベースの人口センサスの実施は、分散型システムのもとで蓄積された全般的に質の高い人口登録制度（統合された行政情報データベース）があつてはじめて可能になるものであり、シンガポール統計制度の歴史的な経緯のなかでの1つの重要な到達点であるといえる。

## はじめに

シンガポールでは、建国（1965年8月9日独立宣言）からさほど時を経ない1968年5月23日、大統領 Yusof Bin Ishak の招集で統計制度調査委員会（Commission of Inquiry on Statistical Activities in Singapore）が発足している。この委員会には、以下に示す8つの設立趣意が課せられ、8名の委員からなる委員会は約1年の検討を経て1969年7月29日に大統領に報告書（CISAS(1969)、以下、「統計制度調査会答申」）を答申した。

- (a) 現存する統計収集・作成のための政府設備のレビューと、シンガポール経済の工業化と拡大のニーズに合う改善策の提言
- (b) 行政記録から抽出可能な統計データの種類、及び最大限の活用のための改善策の検討
- (c) 統計情報収集のための法制のレビューと、必要なら改訂案の勧告
- (d) センサスと大規模調査を実施する余地と必要性の評価、遂行に必要な実施機関及び資源についての勧告
- (e) 政府統計の検証、政府機関による統計データ・分析についての公表を拡充・促進するための勧告
- (f) 統計庁及びその他の政府統計部局の組織のレビューと、統計サービスを改善することができるような求人、必要な教育訓練、及びサービス条件の勧告
- (g) これらの勧告を実施するために追加的に必要になる人員と要件の試算、特定領域における技術支援のための資源の所在について提案
- (h) 常設統計委員会の設置の好ましきについての考察、検討課題の提案

統計制度調査委員会の検討課題は、1960年代当時のシンガポールの統計制度（現存する政府統計・行政記録、及び、統計に携わる機関・人員・予算）についての包括的なものであり、1980年代から登録ベースの人口センサスの実施を見据えた検討を開始し2000年には登録ベースの人口センサスを実現するようなシンガポールにおける現代的統計制度の礎を成すものと評価することができる。

本報告では、1980年代以前の統計制度の沿革を時系列で振り返るとともに、「統計制度調査会答申」の検討し、シンガポールにおける1980年代以前の統制制度改革に果たした役割を紹介する。

## 1. シンガポールにおける現代的統計制度：概要と沿革

シンガポールの統計システムは1973年の統計法（Statistics Act）の成立により、一極集中型から分散型に変革されたとされる<sup>1</sup>。すなわち、1972年以前は、マラヤ連邦の一部としてイギリス植民地時代の1921年に制定された統計条例（Statistics Ordinance）のもとで統計局長官（Chief Statistician, Statistical Bureau）のみに統計調査の実施と作成・公表を行う権限が与えられていたが、1973年に制定された統計法のもとでその権限は4省<sup>2</sup>を中心とする省庁の統計研究部局の長官（Directors of the Gazetted Research and Statistics Units, government departments and statutory boards）にも付与されることが明記された。同時に、省庁間の効率的な連携を図り統計活動を監督するための組織として1972年に設立された国家統計委員会の議長（Chairman of the National Statistical Commission）にも同じ権限が与えられている<sup>3</sup>。このような分散型統計システムのもとで、一方で統計部以外の省庁が所管の領域に関する統計を専門的に担当し<sup>4</sup>、他方で統計部は他の省庁の管轄とならない全社会的かつ公共の利益に供する社会経済的統計調査の実施と作成・公表及びより高度な統計解

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<sup>1</sup> Cheung（1994、1999）、Saw（1972、1974b、1982）、Singapore Department of Statistics（1999）。

<sup>2</sup> 保健省（Ministry of Health）、教育省（Ministry of Education）、労働省（Ministry of Labour）、及び国家開発省（Ministry of National Development）の4省について、「統計制度調査会答申」においても統計研究部局（Research and Statistics Unit）をすぐに設置すべきであると勧告された。

<sup>3</sup> Cheung（1994: p.9）、Wong（1991: p.3）などを参照。

<sup>4</sup> 分散型統計システムには、(1)特定の省庁内で、統計のメーカーとユーザーの間に密接な交流があり、より適切な統計の収集・編纂が行われる、(2)統計作成担当者が特定の領域に特化することで、その領域に固有の事情に精通し、より質の高い統計を短い時間で作成することができるようになる、という2つのメリットがある。

析を行うという役割分担によって（統計制度全体の効率化・機能強化とともに）統計部の機能強化を図ることが、1973年統計法制定の意図であった。

その後の急速な経済発展に伴う統計への需要拡大に対応して、1980年代には統計制度のさらなる分散化が進められる一方で、1972年に設立された国家統計委員会の実査機能は1976年に統計部人口・企画部門（Demography and Co-ordination Division, Department of Statistics）に吸収された後、1983年に解体される。そして、1990年の改正統計法により、統計部<sup>5</sup>長官（Chief Statistician, Department of Statistics）は国家統計企画官（National Statistical Co-ordinator）に任命され、他の省庁の統計部局を監督し勧告を行うとともに、統計調査によって得た情報の提供を要求する権限が与えられた。これにより統計部は名実ともかつての国家統計委員会の役割を担うだけでなく、より強化された権限を有することとなった。また、1990年代のIT技術の発展を最大限活用した調査の実施や、複数の省庁に分散して蓄積されていた膨大な行政情報に関するデータベースの統合を行うことによる統計制度の効率化を主導するようになる。したがって、シンガポールの統計制度は、一極集中型から分散型を経て、統合型に向かっていると見ることができるだろう。また、登録ベースの人口センサスの実施は、分散型システムのもとで蓄積された全般的に質の高い人口登録制度（統合された行政情報データベース）があつてはじめて可能になるものであり、シンガポール統計制度の歴史的な経緯のなかでの1つの重要な到達点であるといえよう。

「統計制度調査会答申」は、シンガポールの現代的な統計制度成立の礎として、2000年の登録ベース人口センサスの実施につながるその後の統計制度の成立と沿革を方向付けるものになる。ここでは、1970年代以後のシンガポールにおける統計制度の発展において「統計制度調査会答申」が果たした役割をよりよく展望するために、まず1990年以前のシンガポール統計制度の沿革についてCheung（1994, 1999）の整理を軸として、時系列で簡単に振り返っておきたい。シンガポールにおける現代的統計制度成立の歴史を表1に示す。

#### 1950年代以前

現存するシンガポール初の公式統計は1871年の人口センサスに遡る。以後、人口センサス条例（the Census Ordinance 1880）に基づいて、おおむね10年おきに人口センサスは実施されている。この人口センサス条例はシンガポールにおける最古の統計立法である。人口センサスを除くと、公式統計調査の実施及び作成・公表は1921年の統計条例（the Statistics Ordinance 1921）に基づいて、統計局（Statistical Bureau）が設置され、マラヤ統計登録官

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<sup>5</sup> Singapore Department of Statistics には、通例、シンガポール統計局の訳があてられるが、「統計制度調査会答申」で“Statistical Bureau”から“Department of Statistics”に修正されるべきと答申され（CISAS 1969: 13.22, p.104）、1973年統計法に記載された。本稿では、統計局（Statistical Bureau）と区別するため、統計部（Department of Statistics）と呼ぶ。

(the Registrar of Malayan Statistics) に調査実施の権限が与えられて以後のことになる。1950年代の組織改編で、統計局は統計部 (Department of Statistics)、マラヤ統計登録官 (Registrar of Malayan Statistics) は統計長官 (Chief Statistician) に改変された。

1950年代以前の統計制度は、シンガポールの主要産業であった輸出入統計や人口統計など (限られた統計しか作成されていなかったが) この統計部がほとんどの統計作成を担う一極集中型のものであった。なお、これらの統計は行政情報から二次的に得られたものである。

表 1. シンガポールにおける現代的統計制度成立の歴史：1871年から2000年

1871年4月2日	シンガポール海峡植民地 (the Straits Settlements of Singapore) における初の近代センサス実施日 <sup>6</sup>
1880年	人口センサス条例 (Census Ordinance in Singapore) 制定
1921年11月30日	<ul style="list-style-type: none"> <li>・ 統計条例 (Statistical Ordinance) 制定</li> <li>・ 財務省のなかに統計局を設置 (Statistical Bureau, Ministry of Finance)</li> </ul>
1947年9月23/24日	マラヤ連邦の一部として、戦後最初のセンサス実施日
1950年代	組織改定が行われ、統計局は統計部 (Department of Statistics)、マラヤ統計登録官 (Registrar of Malayan Statistics) は統計長官 (Chief Statistician) に改変
1957年6月17/18日	マラヤ連邦の一部としてではなく、統計部が独立し実施した最初のセンサス実施日
1970年6月22日	独立後、初の人口センサス実施日
1972年1月7日	<ul style="list-style-type: none"> <li>・ 国家統計委員会 (National Statistical Commission) の設立</li> <li>・ 分散型統計システムの始動</li> </ul>
1973年9月7日	<ul style="list-style-type: none"> <li>・ 統計法 (Statistics Act, 1973) の施行</li> <li>・ センサス法 (Census Act 1973) の施行</li> </ul>
1983年	国家統計委員会の解散と、統計部への機能移転
1990年4月6日	<ul style="list-style-type: none"> <li>・ 1990年改正統計法 (Statistic (Amendment) Act 1990) 施行</li> <li>・ 国家統計委員会の権限を統計長官に法的に委譲</li> </ul>
2000年6月30日	登録ベース人口センサスの実施日

資料：シンガポール統計部ホームページ (<https://www.singstat.gov.sg/about-us/history> : 2018年11月19日アクセス)、Leow Bee Geok (2002)、Cheung (1994、1999)、Saw (1972、1974a、1974b、1982、2012)、Singapore Department of Statistics (1999、2011)、Singapore Government (2019)、Wong (1991) より筆者作成。

<sup>6</sup> 詳細は Saw(1972)、Saw (2012:pp.337-346) を参照。

1960年代

シンガポール独立前後の時期の急速な経済発展と、さらなる発展のための（経済）政策運営のため、統計に対する需要が高まることに応じ、統計部はいくつかの大規模調査を実施し始める。このような統計部が担う統計活動の拡大に対し、より効率的・戦略的な統計制度の構築が求められ、1968年5月23日、統計制度調査委員会（Commission of Inquiry on Statistical Activities in Singapore）がYusof Bin Ishak大統領に招集され、翌1969年7月29日に大統領に報告書「統計制度調査会答申」を答申した。答申の内容は後述する。

1970年代

シンガポール政府は「統計制度調査会答申」を詳細に検討し、答申の勧告を受け入れて1971年12月21日に国家統計委員会法（the National Statistical Commission of Singapore Act 1971）を成立させる。そして、同法第7条に規定された以下①～⑦を通じた分散型統計システムの構築を目的とし、第11条に規定された⑧～⑩の権限を付与されて、議長及び副議長と5名のメンバーで構成される国家統計委員会は翌1972年1月7日に始動した<sup>7</sup>。

- ① 国家統計プログラムの開発に対し、監督責任を果たす。
- ② 政府省庁の統計活動を調整する。
- ③ 統計調査についての国際機関との対応の調整を行う。
- ④ 既存・新規統計の収集、作成、分析及び利用について、政府省庁に助言する。
- ⑤ 統計間の比較可能性と整合性を最大化するために、定義、分類及び語句を標準化する。
- ⑥ 統計部局の編成、職員、サービス条件、トレーニング、施設要求を見直すことによって、統計活動を改善する。
- ⑦ （統計アーカイブ付き図書館）統計アーカイブを開発する。
- ⑧ すべての政府省庁は国家統計委員会の勧告に従わなければならない。
- ⑨ 政府省庁が国家統計委員会の勧告を受け入れない場合には、その理由を文章で通達しなければならない。
- ⑩ 国家統計委員会は勧告拒否文章を受け取った際には勧告を再考し、勧告を修正できない場合には当該案件を所管大臣に報告し、政府省庁は大臣の指示に従わなければならない。

1972年後半、国家統計委員会は1921年に制定された統計条例及び1930年に制定された人口センサス条例について、分散型統計システムを実現するための集中的な検証を行った。そして、新統計法案及びセンサス法案は1973年7月11日に議会に提出され、同年7月28日に議会を通過、同年8月20日に大統領の同意を得て、同年9月7日に発効した<sup>8</sup>。1973

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<sup>7</sup> Saw (1974a: pp.17-18)

<sup>8</sup> “New Statistics and Census Acts,” *Singapore Statistical Bulletin* Vol.2 No.2, December

年の統計法・センサス法は、少なくとも以下5点において、旧統計立法を改正したものであった<sup>9</sup>。

1. 旧統計条例では統計局長官のみに統計調査を実施することが許されていたが、新統計法では官報に公示された省庁の統計研究部局<sup>10</sup>の長官と国家統計委員会議長にも統計調査の実施と作成・公表を行う権限が与えられた。
2. 個人情報保護規定が緩和された。たとえば、製造・取扱商品の種類や事業所の従業員数・所在地といった他から得られる情報については回答者からの書面による同意なしでも公表できるようになった。
3. 統計法違反に対する罰則規定が強化された。
4. 統計調査の実施と作成・公表を行うことができる領域が附則1に明記されているが、この数は11から43に拡大した。
5. 旧人口センサス条例は人口センサスの実施のみに適用されていたが、新センサス法は他の標本調査にも適用されることになり、人口だけでなく住宅、農業、雇用・労働、産業や建設、保健、家族計画等の領域における調査の実施にも適用されることになった。

この時期は多くの新しい統計調査が立ち上げられる時期にあたり、第1回シンガポールにおける家族計画全国調査（1973年、人口家族計画委員会 Family Planning and Population Board）、第1回労働力調査（1973年、統計部）、第2回労働力調査（1974年、労働省）、第1回農業センサス（1973年、国家開発省）、第1回建設産業センサス（1974年、国家開発省）などのように各省庁の所管領域についての統計研究部局と国家統計委員会による（補完的な分業）共同実施が行われている。また、高血圧調査（1974年、保健省）や、結核、糖尿病と腎臓病についての健康調査（1975年、保健省）の実施にあたり、国家統計委員会は標本設計と標本抽出に協力している。

職員の流出により、国家統計委員会の実査機能は1976年に統計部人口・企画部門に吸収される。その後も国家当家委員会理事会は統計政策の方針を決定し、実務は統計部が担当するという状態が続くが、最終的にその使命を終えたとして1983年に解体されることになる。

1980年代

ますます多くの省庁が統計研究部局を設置するにつれ、分散型統計システムの合理化が

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1973:p.130.

<sup>9</sup> “New Statistics and Census Acts,” *Singapore Statistical Bulletin* Vol.2 No.2, December 1973:p.130-131, Wong Cheong Shek (1991: p.3-4)。

<sup>10</sup> 財務大臣は(1)保健省、(2)教育省、(3)労働省、(4)国家開発省、(5)科学技術省の5省の統計研究部局（Research and Statistics Unit）と財務省人材計画課（Manpower Planning Unit, the Ministry of Finance）を1973年11月26日に設置すると官報に公示した。

進められる。特定省庁の所管領域に含まれる統計データの作成・編纂・公表権限は統計部から移管される一方、このような権限の分散が統計システムの分裂や分断にならないよう統計制度全体の調整が行われる。1984 年以後 1987 年にかけて、統計部から特定省庁に移管されたものには次の 8 つが含まれる。

- ・ 流通統計（通商開発局 Trade Development Board）
- ・ 製造業統計（経済開発局 Economic Development Board）
- ・ 住宅価格指数調査（国家開発省）
- ・ 毎年金融機関調査（シンガポール金融管理局 Monetary Authority of Singapore）
- ・ 船舶・海上貨物統計（シンガポール港湾局 Port of Singapore Authority）
- ・ 民間航空・航空貨物統計（シンガポール民間航空局 Civil Aviation Authority of Singapore）
- ・ 出生と死亡統計（国家登録部出生・死亡登録係 Registry of Births and Deaths in the National Registration Department）
- ・ 結婚と離婚統計（地方自治開発省 Ministry of Community Development）

このような移管により、統計部では人員等の資源を新たな統計活動に配置することが可能になることを意味する。

1990 年代

1980 年代までの急速な経済発展に続く 1985 年の経済不況といった急激な変化を背景とする統計への需要拡大と統計調査実施コストの増大や、高度に分散化された統計制度全体を調整し重複等の非合理を最小化するための調整機能、統計調査への協力が義務であるために回答者がプライバシーの侵害を感じる（過度の）負担を避けることがますます重要になり、1973 年統計法に修正が加えられ、1990 年 4 月 6 日に 1990 年改正統計法（Statistic (Amendment) Act 1990）が施行される。少なくとも、以下の 3 点が重要である。

1. 統計部長官（Chief Statistician, Department of Statistics）は国家統計企画官（National Statistical Co-ordinator）に任命され、(a)公的部門の統計活動の調整、(b)公的機関の統計調査の実施・分析・利用への助言、(c)統計標準の開発とその遵守の 3 つの役割についての権限と責任を有するようになった。
2. すべての統計研究部局は、統計部長官の勧告に従うこととされた（所管大臣を通じた仲裁の道は残された）。
3. 調査研究部局が統計法に基づく統計調査によって得た情報の提供を受けるため、統計部長官には（附則 2 及び附則 3<sup>11</sup>に記載された）調査研究部局長官を

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<sup>11</sup> 附則 2 には調査研究部局名が記載されている。附則 3 には、センサス実施最高責任者（Superintendent of Census）がセンサス法（Census Act(Chapter 35)）に基づいて収集した情報、中央積立基金が中央積立基金法（Central Provident Fund Act(Chapter 26)）に基づ

指揮する権限が与えられた。

このような統計立法と並行し、1990年代には情報通信技術の急速な発展及びインターネットの普及が進行し、その活用による統計調査の実施・分析・公表の効率化が図られた。統計部による全国住所データベース (National Dwellings Database, Department of Statistics) や住民登録データベース (Household Registration Database) 等の大規模行政情報データベースの開発(改良)、世帯・人口調査における CATI (Computer Assisted Telephone Interview) の活用、インターネット調査 (や 2000 年人口センサス調査票の電子的な返却) といった例が挙げられる<sup>12</sup>。また、経済活動の様々な側面での情報通信技術の応用により、電子決済についての統計等、新たな需要が拡大している。

## 2. 統計制度調査会答申

冒頭で述べたとおり、統計制度調査会は、建国からさほど時を経ない 1968 年 5 月 23 日、急速な経済発展とさらなる発展に資す (経済) 政策運営のための統計に対する需要が興隆しつつも、統計制度については統計部がほとんどの統計作成を一手に担うという一極集中型であった時期に、大統領の招集により 8 項目の諮問について発足した。諮問内容は、当時の政府統計のレビューとシンガポール経済の工業化推進にかなう統計制度及びそれを実現するための具体的な施策の提案を求めるもので、具体的には、統計調査の実施・作成・分析に利用可能な行政情報、実施しうる実地調査 (領域、方法)、政府の統計関連部局 (組織体系や役割)・設備・人員 (必要な予算・リクルーティング・教育訓練の方法) のレビュー、そして、常設統計委員会の設置と、これらを実現する統計整備のための法制というように、実現可能性を重視した包括的な内容になっている。

統計制度調査会のメンバーの所属 (発足当時) を表 2 に示す。統計制度調査会は、You Poh

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いて収集した中央積立基金メンバーの雇用者、被用者と賃金率に関する情報、通商開発局 (Trade Development Board) が輸出入管理法 (Registration of Imports and Exports Act(Chapter 270)) 第 3 条に基づいて収集した情報、のそれぞれの提供を受けることができることが記載されていた。

<sup>12</sup> Singapore Department of Statistics (1999)、Leow Bee Geok (2002)等を参照。NDD と HRD の開発と統合は登録ベース人口センサスを実施するための柱である。シンガポールのように変化が著しいと社会経済の実態を把握する需要は大きい、一方で回答者負担を軽減すること (標本設計の改善、実査の効率化、IT 技術の活用、統合された行政データベースの活用) が課題であり、IT 技術の活用による重複の除去 (行政記録からデータが得られるような不要な実地調査の削除) を進めることはもちろん、実地調査のデータ収集においても IT 技術の活用が図られているほか、テーラーメイド集計表の作成をインターネットで提供するなどデータ利用の推進も図られている。

Seng シンガポール大学教授を議長とし、公共・民間双方の部門から6名と、統計部を所管する財務省から秘書官を加えた8名（発足当時）で構成された。1968年からの12ヶ月間に42回の会合を行って、1969年7月29日に大統領に報告書を提出した。

表2. 統計制度調査会 委員一覧（1968年5月発足当時<sup>注1</sup>）

氏名	所属
議長 You Poh Seng, Dr.	Director, Economic Research Centre, <u>University of Singapore</u>
Wu Ta-yeh, Mr.	Economic Development Adviser (U.N.), <u>Economic Development Board</u>
Ngiam Tong Dow, Mr.	Deputy Secretary (Economics), Economic Development Division, <u>Ministry of Finance</u>
Richard Lau, Mr.	Principal Assistant Secretary, Establishment Branch, <u>Ministry of Finance</u>
Harry Tatsumi Oshima, Prof.	Consultant, Economic Research Centre, <u>University of Singapore</u> , jointly appointed as Fellow in Economic Research Center at the University of Hawaii and East-West Center
Tye Cho Yook, Mr.	Senior Lecturer in Social Medicine and Public Health, <u>University of Singapore</u>
Lee Wai Mun, Mr.	Planning and Operations, Research Analyst, <u>Shell Company, Singapore</u>
秘書官 Goh Chok Tong, Mr.	Principal Assistant, Secretary (Economics), Economic Development Division, <u>Ministry of Finance</u>

出典：Appendix 1. A. Press Statement Issued on 10<sup>th</sup> June, 1968 in CISAS(1969: p.112).

注1. CISAS(1969: 1.2, p.1)によれば、Harry Tatsumi Oshima教授は帰米にともない1968年7月24日に辞任しており、代わりに Peter Tan Cheow Khoo(Mr.)(Chief Statistician, Statistics Department)が加わった。また、集中討議の委員への負担軽減のため、1968年8月14日から Chia Siow Yue(Mrs.)(Economics Department, University of Singapore)が委員に加えられた。

表3. 「シンガポールにおける統計的活動に関する調査委員会答申（1969年）」の構成

目次 .....	CONTENTS	項
委員一覧 .....	Membership of Commission	I
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大統領への提言 .....	Commission's Letter to the President	v
報告 .....	REPORT	
1章 運営状況 .....	Administrative Report	1
2章 答申の基本的考え方 .....	Commission's Guidelines	4
3章 勧告の要旨 .....	Summary of Recommendations	9
4章 統計部 .....	The Department of Statistics	15
5章 労働省 .....	The Ministry of Labour	35
6章 国家開発省 .....	The Ministry of National Development	47
7章 教育省 .....	The Ministry of Education	58
8章 保健省 .....	The Ministry of Health	66
9章 その他の省・庁 .....	Other Ministries and Statutory Bodies	74
10章 データ処理 .....	Data Processing	85
11章 統計的人員 .....	Statistical Manpower	89
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参考資料 .....	Appendices	
資料1 行政資料 .....	Administrative Appendix	111
資料2 統計資料：経済、人口 社会統計の開発 .....	Statistical Appendix: The Development of Economic, Demographic and Social Statistics in Singapore	124
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D. 貿易統計 .....	External Trade Statistics	145
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H. 人口社会統計 .....	Demographic and Social Statistics	170
資料3 主要政府統計系列 .....	List of Major Statistical Series of Ministries, Departments and Statutory Boards	177

統計制度調査会の報告書である「統計制度調査会答申」は、表3に示すとおり13章の本文(110ページ)と3つの参考資料(86ページ)を含む201ページからなる。先出の表2によれば、統計制度調査会委員の所属をみる限り、1名(Tye Cho Yook)を除く全員が経済系で、シンガポール大学経済研究所長、6名の経済官僚及び石油会社のアナリストで構成されている。また、勧告にしたがって統計制度及び統計部と各省庁の担う統計を見直したときに統計部が所管すべき統計領域が表3のなかで「資料2. 統計資料」として添付されているのであるが、表3によれば、統計資料の約9割にあたる52ページ中45ページが経済統計によって占められている。(一面では、後述の通り統計部は他の省庁が所管しないものを取り扱うためという側面もあるが、)当時のシンガポールにとって(おそらくシンガポールのみならず全世界的に)政府の役割(や政策目標)がいかに工業化や経済開発に偏重している(実際、この頃収集されていた統計データはほとんどがマクロ経済データであった)ことがうかがわれる。

約110ページからなる「統計制度調査会答申」の本文は、おおむね(分散型)統計制度を実施するための具体的な政府組織編成について取り扱った第4~10章と、(分散型)統計制度を実現するための政府組織・各省庁及び公的機関全体に関わる(人員(予算)・統計的委員会・法制を扱う)第11~13章に分かれる。第4~10章(及び資料2)では各省庁・公的機関においてどのような統計が収集されているか、個別統計の今後の課題及び方向性についても勧告されており、勧告は具体的でありかつ(政策的)実現可能性の観点から検討されたものになっている。「統計制度調査会答申」第2章基本的な考え方の2.3節には以下のようにある。

<2.3 各省庁・公的機関にそれぞれの(統計データ)への要求がある。それぞれが統計データ収集・作成に特定のアプローチで取り組んでおり、これらデータはそれぞれの組織にとって有用である。論理的には、一般化を避け、個別領域のニーズ・問題・改善策を検討すべきだろう。> (CISAS 1969: p.4)

なお、以下、本稿では「統計制度調査会答申」からの引用及び要約をとくに区別せず同様の形式で示す(山括弧<>で括り、冒頭に節番号を含める)。また、「統計制度調査会答申」は1960年代の法的な行政文章ということもあって日本語表現になじまない面があり、また広く利用可能ではないように思われるため、主要部分(冒頭の「大統領への提言」、第2~3章、資料2.H)の抜粋を、本稿末に付録として添付する。

しかしながら、「統計制度調査会答申」の基本的な考え方は個別領域の調査の実施・作成のあり方について検討するのではなく、あくまで全体として統計制度をニーズに合いかつ効率的なものに改善していくことにある(2.4節)。その際、統計制度の改革にあたり「統計制度調査会答申」が重視するのは、(公的機関の統計作成者としての機能ではなく(2.4節))

(統計) 研究機能、すなわち政策提言のためのデータ利用・分析の重要性である (2.9 節)。その上で、各省庁によって、政策・統計・研究の関わりの現状、統計研究の重要性や必要性は異なっていることを指摘している (2.10 節) (したがって、省庁ごとの検討が必要になる)。

<2.4 シンガポールにおける統計情報に関連した我々の立場は、…データ自体は行政記録から取り出せば存在するが…システムに欠陥があるというものである。…行政録は種々の統計の新しい原料であり、緊急に必要なのは制度構築と(政府省庁・公的機関の)組織構造である。…> (CISAS 1969: p.4)

<2.9 公的機関でのデータ利用は、政策立案・評価に関わるはずである。政府は社会・経済発展のための政策立案・評価及びそのためのインフラストラクチャーの整備に対しより大きな責任を負うようになっており、そこでは公的機関同士(や公的機関と民間企業の間)により複雑な相互関係が生じている。そのような場での統計の利用とは、単に数字を一見し、表面的な結論を導くようなものでない。したがって、公的機関における統計活動の拡大・正当化は、様々な領域において研究活動の拡大をとまなうはずである。また、調査研究が意味のあるものであるためには、担当者は大臣と政策立案・政策決定の責任者にアクセス(直接面会する手段)があつて然る。> (CISAS 1969: p.5)

<2.10 政策と研究、研究と統計の結びつきや研究調査部門の必要性の程度は省庁によって異なる。経済財政統計を最も必要とし利用している財務省には、大臣及びその政策立案者、当省統計部のための研究班がすでにある。他には、統計処理を中心的にこなす仕組みがあつて、政策立案研究の必要のために相当量の統計を供給している(もしくは供給する必要がある)省もある。この場合には当外相の研究機能の強化開発が望ましい方向性だろう。また、そういった統計的仕組みがなく、あるいは多量のデータ生産を必要とせず、むしろ非常に限定的な領域における情報を関連したデータとあわせて政策目的に利用するような省もあり、換言すれば必要なのは統計の開発ではなく研究の開発である。データの必要がない省では小数の研究職員がいれば足りるし、データ生産やその他必要なデータは統計部に手配すればよい。小規模統計室の増殖は避けることが基本である。> (CISAS 1969: p.5-6)

また、このように統計研究機能を重視する立場から、各省庁に特有である必要なデータ(分析)がどのようなものかについては実際の政策立案現場でのデータ利用を通してしか知り得ない(2.8 節)とした上で、統計研究スタッフは行政職員のなかから統計研究部門で政策志向研究のキャリアを積む人材を育成すべきことを指摘している(2.11 節、2.12 節)。そして、公的機関だけでなく民間機関でデータ利用として、起業家と公的教育機関の研究者を例に、公的機関の統計研究スタッフとのデータ利用(研究)視点の違いと起業家や公的研究機関の視点が公共政策にとっても重要である場合があることを指摘した上で、このような視点の違いで必要になるデータが異なること、常設統計委員会がこのようなニー

ズや必要性をつなぐことができるとしている（2.13～2.15節）。

<2.8 …どのような統計が必要とされているのかというと…現場での利用を通してし  
かわからないということで委員会は一致した。…>（CISAS 1969: p.5）

<2.11 研究職員の開発については、昇進が制約されるという問題があるため、研究職  
という別カテゴリーを作ることに賛成しない。同時に重要なのは、行政職員の人事異動  
の過程で研究経験が得られる優位性である。もちろん、すべての行政職員に研究経験を  
させようとするのではなく、熱意と才能のある職員が1～2年政策志向研究を行う機会  
があってよい。現代の制作現場では、開発計画が日常の行政的職務と同等以上に重要で  
あり、上級職員の中には応用研究の成果に気を配り、政策の実施を迫るような研究論文  
を批判的に評価することができる職員が必要である。キャリアのなかで研究活動に従  
事した職員はこのような研究成果に気を配り、問題に対し日常の行政的業務とは異な  
った取り組みをすることが期待される。>（CISAS 1969: p.6）

<2.12 研究者と政策担当者の相互関係が成立・継続するため、研究の継続性は上級職員  
の終身雇用制によって維持される。かつ、応用統計の素養があり、データへのアクセ  
スがあることが上級職員に必要である。…研究のための研究でなく、（ここで勧告する  
統計部局が行うのは）政策志向研究であるべきである。>（CISAS 1969: p.6）

<2.13 公的機関だけでなく、民間でのデータ利用も考える必要。一般に企業は、民間  
のデータ利用は狭い範囲で政府統計機関の機能外であるような特化した情報を必要と  
しているものに、起業家の計画と判断のための調査研究のためには、企業は公的機関か  
ら利用できる大量のマクロ・データとセクター情報に必ず依拠しなければならない。こ  
のようなつながりで、起業家の研究によって生み出される統計は潜在的に意味があり、  
有用であることが予見される。まったく同じように、別のつながりではデータの必要性  
が予測されておらず、加重的な努力なしに必要性に叶うような主要領域があるかもしれ  
ない。この点は、常設統計委員会といった調整機関を通し、ニーズをつなぐことで対処  
できる。>（CISAS 1969: p.6）

<2.14 最後に重要なのは、委員会は高等教育機関の研究者には、国益に資する大きな  
潜在性（能力）がある。…統計研究部門が政策判断のために即時客観的な基礎を提供す  
るようなタイムリーな研究をおもに行うのに対し、高等教育機関の研究者は経済構造  
変化をとともなう政策立案に不可欠基礎的なマクロ研究に取り組んでいる。…役人には  
実施に時間がかかりすぎてしまうが、高等研究機関の研究者が（データさえあれば）実施  
できる国のために重要な領域もある。>（CISAS 1969: p.7）

<2.15 高等教育機関の研究者(企業)のために、統計的に必要なものをはっきりさせる  
必要がある。適切に設置された常設統計委員会はこのようなニーズにかなう。>（CISAS  
1969: p.7）

このような基本的な考え方にたってまとめられた「統計制度調査会答申」の勧告要旨を、語弊を恐れずまとめると、(1)分散型統計制度のもとで統計部の機能を強化する(3.2節、3.10節)、(2)労働、国家開発、教育、保健の4省に統計研究部門を設け所管統計の解析を専門的に担当する(3.3節、3.5～3.9節)、(3)統計部はこれら4省が扱わない経済財政統計、人口学的統計、人口動態統計、その他社会統計を担当するとともに(4省の所管統計については作成・分析・利用業務を完全に移管することで人材等資源を新たな統計活動に配置することが可能になり)、センサスと実地調査を実施する部門を設け、調査研究部門を持たない省に(データ解析結果について)専門的助言を行う(3.3節、3.4節、3.10節)、(4)その他の公的機関についても国全体の利益となる統計データの収集や統計の作成・分析を行っており、これら公的機関のデータを有効に活用するため政府機関と連携を図る(3.12節)、(5)これらの拡張を行った場合に必要になる1969～1975年の統計局及び4省における増員(括弧内は1969年実績)は、統計部と4省で合計して第1種研究職員が14名(3名)、第1種統計学者が15名(15名)、第2種職員が40名(21名)、第3種職員が105名(126名)、電子データ処理班については第1種職員が5名(5名)、第2種職員が6名(7名)、第3種職員が30名(80名)となる(3.16節、表3-1)<sup>13</sup>、(6)統計職員のための予算は146万ドル(1969年)から1975年に276万ドルに増加することが見込まれるが政府予算全体の0.18%(1969年)から0.21%(1975年)にすぎない(3.18節)。要旨詳細は以下の通りである(CISAS 1969: p.9-12)。

- ・ <3.2 分散型統制制度の開発を勧告する。この制度の下で、統計部を拡張し、(十分な規模で、複雑、国家的に重要と考えられる統計活動がある)労働、国家開発、教育、保健の4省に統計研究部を設置する。>
- ・ <3.3 統計部は、(第4章で特定する)様々な統計的ギャップ<sup>14</sup>を埋めるだけでなく、

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<sup>13</sup> 職員の階級については、第1種が管理職、第2種が上級職、第3種が行政職、第4種は労務職と考えられる。電子データ処理班の場合には、第1種は長官(Head)、副長官(Deputy Head)、上席プログラマー(Senior Programmer)が含まれる。第2種には上級管理職(Higher Executive Officer)、会計機械設備監督者(Supervisor Accounting Machinery)、プログラマー(Programmer/Supervisor)が含まれる。第3種には、監督補佐(Assistant Supervisor)、コンピューターオペレーター(Computer Console Operator)、機械操作員(Machine Operator)、一般事務職(General Clerical Officer)、一般事務補佐(General Clerical Assistant)、速記者(Stereographer)が含まれる。

<sup>14</sup> 統計部が所管すべき統計のそれぞれについて、今後整備されることが望ましいものが第4章で説明されている。たとえば、国民経済計算については、国民経済計算等全国集計料について、の産業別(付加価値生産)内訳、要素所得支払項目別国民所得、粗国内資本形成の内訳、国際収支(資本)統計の受取側・支払側それぞれの内訳があげられている

蓄積されたデータを分析し解釈するという不可欠な研究を実施できるように拡張する。拡張した統計部は、統計の人員や設備のない省のための経済財政統計と人口学的統計、人口動態統計、その他の統計（おもに社会統計）を取り扱う。したがって、統計部はその他の省に対する助言やコンサルティングサービスを提供する。>

- ・ <3.4 また、統計部にセンサスと大規模調査を計画し実施するための部門を設置することを勧告する。>
- ・ <3.5 労働省内に、統計研究部門を設置すべきである。その部門には、現在中心的に統計を取り扱っている職員を充て、統計家ではなく（労働分野の）研究者（たとえば労働経済学者）に指揮されるべきである。1972年までに、その部門は(1)強固な基盤に基づく半年毎勤労統計<sup>15</sup>、(2)失業登録制度データの改善<sup>16</sup>、(3)労働時間・所得に関する毎

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(CISAS 1969: 4.12, p.16)。人口統計についても、人口移動要因の推計精度を向上することで、現在人口推計を男女年齢民族別に拡張すべことが必要としている（CISAS 1969: 4.39, p.21）。

<sup>15</sup> 半年毎勤労統計の作成に関して、人口センサスの最大の短所は実施間隔が長いことにあることを指摘し、民間部門の雇用に関して、労働省が半年毎にデータ収集を行っていることを説明する（CISAS 1969: 5.14, p.38）。それによれば、このデータ収集は、1956～1968年の間、労働法令(Labour Ordinance 1955)、店員雇用令法令(Shop Assistants Employment Ordinance 1957)、事務員雇用法令(Clerks Employment Ordinance 1957)という法令に基づく登録記録から二次的に得られた。ただし、これには少なくとも2つの問題があり、(1)包括的かつ最新の事業所フレームを築く、もしくは事業所フレームにリストされている事業所からの回答提出の整合性を確保するために設備・組織が十分でない、(2)(雇用関連法令に基づく人民の)捕捉が十分でないことがあげられている。これに対し、1969年からは雇用法(Employment Act 1968)のもとでデータ収集が収集されるようになり、(1)捕捉範囲をすべての雇用者を含むものに広げており、(2)事業所に対し、労働省への情報提供についての遅れや失敗に厳格になっている。加えて、数年に及ぶ事業所リスト統合作業の結果、(リスト構築や最新化は緩めるべきでないが)リストは今や適度に包括的になったと評価している。

<sup>16</sup> 雇用に関するデータソースは数個あるが、失業については十分でないとし、以下のように論じている（CISAS 1969: 5.17, p.39）。まず、センサスによるデータ収集は(雇用の場合と同様)、定期的でなく、古くなってしまふ。そして、雇用データ収集に用いる事業所調査は、その性質から、失業者を含まない。一方、雇用交換制度(the Employment Exchange)が失業者登録を整備・管理・維持しているが、(1)登録が義務でないこと、(2)失業給付のような現金給付による誘因がないため、失業者の(どの程度かはわからないが)一定割合を含まない。一方、働いているにも関わらずよりより仕事を探して雇用交換制度に登録する人もいるし、仕事を見つけたにもかかわらず、登録を削除しない人もいる。これらを差し引きした結果は不明であり、時系列でみてそれぞれのバイアスがどのように変化している

年大規模調査のデザインと実施方法の改定、(4)1972年からの定期的な労働力調査を計画すること、を集中して行う。その他の労働統計研究部門の機能としては、統合された事業所登録の整備・管理・維持、様々な分類システム、所得・賃金研究、労働力人口研究、中央積立基金との協調とデータ改善がある。>

- ・ <3.6 国家開発省については、小規模の統計研究部門を設けることを勧告する。この部門は、(1)建設活動の報告制度をデザインし実施する、(2)建設開始・完了数を定期的に推計する、(3)主要建設についての価格統計を収集する、(4)建設に関する指標を定期的に作成する、(5)5年に一回の農業センサスを実施する。この部門はデータそのものを収集するのではなく、可能な限りデータ収集は実施部局に委譲される。>
- ・ <3.7 さらに、(国連プロジェクトのため国家開発省に設置された)都市国家計画事務所(State and City Planning Office)が1972年にその役目を終えたときには、そのデータ収集・更新活動は国家開発省統計研究部門に統合されることを勧告する。>
- ・ <3.8 教育省にはすでに統計研究課が備わっている。検討の結果、統計研究課は(1)経済統計の迅速な収集、(2)現下の教育問題及び施策の評価を狙った調査研究の実施、には人員が十分でない。したがって、統計研究課は、研究班と統計班を率いる研究班長によって統括され、多少の人員増加を勧告する。>
- ・ <3.9 3.9 保健省については、統計研究部門を設置し、強固な基盤に基づく保険統計の収集を行わせ、(政策の)計画・評価研究に必要な統計情報が利用可能なようにする。同部門には、医療記録からの情報処理を抜本的に再編することが必要になる。このため、情報処理と登録処理の両方の必要性にかなうよう、パンチカード装置の常設を勧告する。必要な情報がパンチカードに変換されるよう準備ができ次第すぐに、通常の医療・健康統計系列の作成については電子データ処理班(Electronic Data Processing Unit)が引き受ける。>
- ・ <3.10 一般に、統計の開発は、政府内の問題指向・政策志向研究の開発と結びつくべきであると我々は信ずる。したがって、ある程度分散されたシステムを勧告した。そのシステムの下では、統計部は解説研究(interpretative research)を行うよう拡張され、統計研究部門が4省(労働、国家開発、教育、保健)に設けられることになる。財務省には、既に研究部門(その定期研究グループ会合には統計長官が出席)があるので、統計部については、我々は主に統計面の開発を勧告する。>
- ・ <3.11 その他の(個別統計システムを準備しない)省については、その統計ニーズ(が満たされない場合に)は大部分統計部への手配によって満たされることを勧告する。これらの省における必要は、データ収集よりも、より研究的で行政記録から抽出されたデータの解釈にある。研究を通し、これらの省が(統計部が取り扱うには特化しすぎてい

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のかも不明である。したがって、登録(された失業)の変化が失業(行動)の変化を示すと取ることが可能か疑わしい。

るか（金銭的・人材的・時間的に）高すぎるような）統計的なニーズを生み出し特定できた際には、省内に独自の統計研究部門を設置すればよい。これらの省の統計研究活動は（他の日常業務・職責を抱えた）専門職員によって、当面の間は、実施し続けることが期待される。したがって、これらの省については、省を超えて重要で利益がある少数の統計系列の改善を勧告する。>

- ・ <3.12 公的機関についても、委任事項外なので、確たる勧告はしていない。しかし、この国の経済に重要な役割を果たすとともに、公的機関の多くが重要な統計的研究を行っており、我々が委員会の責務を果たすにはこれらの活動を考慮しなければならないだろう。そこで、これらの有用な統計データが利用可能になるような方法と手段について様々な提案を行った<sup>17</sup>。>
- ・ <3.13 内務国防省は、人員についてのデータ資産を隠匿しているものの、理解可能な国防上の機密であり、この報告には含めない。>
- ・ <3.14 電子データ処理班(Electronic Data Processing Unit)については、既に政府委員会がデータ処理のニーズと 2 台目のコンピュータを入手するかについて検討しているので、当委員会は装置の拡張については触れていない。2 台目のコンピュータが承認されればスタッフ増員を伴うだろうから、この増員についてのみ勧告した<sup>18</sup>。>
- ・ <3.15 統計部と（統計研究部門の開発について勧告した）4 省の統計的ニーズ・アクティビティ、及びそのアクティビティを効果的に遂行するのに必要な人員について注意深く検討した。我々の勧告は必要とされる増員のみを考慮している。たとえば、実地調査(survey work)はこのような統計的アクティビティの一部を成すがこの段階ではこのような要求を試算できないので除外しているというように、必要な研究補助の増員もある程度あるだろう。しかしながら、研究補助が大きくなるとは期待していない。>
- ・ <3.16 拡大された分散型統計制度において 1970~1975 年に必要な人員についての

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<sup>17</sup> たとえば、CISAS (1969: 9.56, p.84)では以下のように論じている。<9.56 中央積立基金は雇用と失業統計の収集に適している。(基金にとっては必要ないものでも) 基本フォーム (Form C. P. F. 31) は、被用者の経済その他属性についての情報を含むよう拡張されるべきである。この提案が合理的なのは、要求されたデータを処理する機械装置は既に存在するため、情報を追加する限界費用はさしたものでない。>なお、CPF フォーム 31 については 9.36-9.37 (pp.80-81) で解説されている。

<sup>18</sup> CISAS (1969: 10.11, p.86)によれば、コンピュータのような高価な装置の導入において中心的課題は、その利用をいかに最大化するかであり、そのためには導入・職員トレーニング・プロジェクト実施のスケジューリングを注意深く行う必要がある。2 台目のコンピュータを導入する際に、必要な増員は合計 51 人であり、1970 年センサスの処理に 2 台目の計算機を使うなら 1969 年末までに増員が必要であると試算されている CISAS (1969: 10.9, p.86)。

勧告は表 3-1 に要約した。表は（統計）技術的人員のみをカバーしており、行政職員と IV 種職員は除外されている（これら職員の募集には問題はないため）。>

- ・ <3.17 表 3-2 は 1970～1975 年に必要な予算を示す。統計研究部門を設置しない省では追加的な支出があるかもしれないが、（統計的活動が限られ、統計研究機能は 4 省の職員の職責であることから）大きくはないだろう。>
- ・ <3.18 統計職員のための 146 万ドルの 1969 年予算は、1969 年予算全体の 0.18% を占める。シンガポールの粗国内支出（物価調整なし）の年率 7% という緩やかな増加率<sup>19</sup>、政府通常予算の増加は 1970 年以後粗国内支出の 20%<sup>20</sup> を仮定すると、1970 年の統計的人員に対する 276 万ドルの支出は政府予算全体の 0.21% を占めるにすぎない。>
- ・ <3.19 訓練された統計職員は全般的に不足しており、訓練には時間がかかるので、人員補充は 1970～1975 年の間の 6 年間をかけて徐々に行うことを勧告した。必要な統計的人材の供給には高等教育機関との連携を要する。>
- ・ <3.20 リクルートしたスタッフをつなぎ止めておくためには統計サービス全体が統合サービスであるべき。言い換えれば、統計部と（独立した）統計部門を設置する省の間では統計人員の交換が可能だが、統計的サービスの外には出さない。昇進もこの統計的サービス内で行われる。>
- ・ <3.21 統計専門の人事コースを作るのではなく、統計調査部門の研究者ポストには行政職員を充てる。研究の継続は（終身）部門長によって維持される。>
- ・ <3.22 分散型統計制度では調整役の期間が必要になる。公的機関のすべての統計的活動の発展と調整、統計アーカイブの開発、統計の作成と利用に関連したあらゆる懸案についての助言を担う統計委員会を勧告する。統計委員会は、特定領域の統計的関心についての常設専門委員会を設置できる。>
- ・ <3.23 統計委員会が効果的に機能するには政府機関・公的機関が勧告に従う強制力が与えられるべきである。しかし最終的な控訴権限は大臣にある。>
- ・ <3.24 統計法(the Statistics Ordinance)の改正については、以下 3 点を勧告する。(1) 個人情報保護規定の改正。これにより、個別品目ごとの生産高や産業別雇用者数を(産業別企業数に関わらず個別企業に紐付けず)公表できるようにする。(2) 大臣の許可のもと、(a)個人を特定できない、(b)情報の性質と大臣の判断に応じて一定の時間が経過したものについて、研究機関は個人情報にアクセス出来るようにする。(3) 統計法は基本法であり、その条項は他の統計立法にも適用される。>

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<sup>19</sup> 1965～1968 年平均成長率は 8.1%、1968 年は 7.8% である。

<sup>20</sup> 1966～1968 年平均は 16.0%、1968 年は 17.2% である。

### 3. 結語

以上のように「統計制度調査会答申」は、国家統計委員会の設置に直結しており、国家統計委員会が1970年代に実施した改革、すなわち1973年統計法の制定を通じた統計部改革と（労働、国家開発、教育、保健）4省等の統計研究部門設置を柱とした政府省庁・公的機関の組織改革を通じた分散型統計システムの構築、行政記録を利用した統計の作成・分析・利用、新しい実地調査の企画・実施による統計の作成・分析・利用、これらの統計調査の実施・分析・利用における政府省庁及び公的機関間の調整、そのほとんどが（少なくとも基本的な方針については、すべてが）「統計制度調査会答申」に含まれるものであることがわかる。国家統計委員会は1970年代半ばまでに分散型統計制度実現のための基本的な取組を終え、したがって「統計制度調査会答申」に課された5カ年計画の統計部の機能強化と常設統計委員会としての役割を終え、1983年に解体されたことがこれをしめす。

1980年代以後国家当家委員会の役割を統計部が担い、とくに1990年改正統計法以後は統計部の主導により統計制度の整備・発展を統合型に導いていくことになるが、行政記録データの整備や実地調査の企画・実施の効率化に関する具体的な示唆は「統計制度調査会答申」の随所にあらわれている。シンガポールにおける人口（動態）統計（制度）、とくに行政記録データベースの整備・管理・維持活用が1980年代以後（とくに1990年以後IT技術の発展を活用し）どのように発展してきたのかについては、来年度の課題としたい。

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付録 「シンガポールにおける統計的活動に関する委員会報告書（1969 年）」

抜粋

(Commission's Letter to the President)

COMMISSION OF INQUIRY ON STATISTICAL ACTIVITIES

REPORT

To

The President of the Republic of Singapore,  
Singapore,

Sir,

We have the honour to submit to you the following Report of the Commission of Inquiry on Statistical Activities in Singapore appointed by you on 23rd May, 1968 with the following Terms of Reference:

- (a) to review the existing Government machinery for the collection and compilation of statistics, and to consider and recommend improvements required to meet the needs of the expanding and industrialising economy of Singapore;
- (b) to examine the types of statistical data which can be extracted from the administrative records of Government and to make recommendations for their improvement and for their maximum utilisation;
- (c) to review the existing legislation for the collection of statistical information and to recommend amendments, where necessary;
- (d) to assess the need and scope for conducting censuses and surveys and to make recommendations regarding the organisation and resources needed to carry them out;
- (e) to examine the statistical publications issued by the Government and to recommend ways and means for expanding and expediting the publication of

statistical data and studies by Government departments;

(f) to review the existing organisation of the Department of Statistics and other statistical units of the Government and to make recommendations on their staffing, training requirements and terms and conditions of service to enable them to cope with the increase and development of statistical services;

(g) to estimate what additional staff and requirements will be needed to implement the recommendations made and to suggest sources for technical assistance in particular fields of specialisation;

and

(h) to consider the desirability of setting up a Permanent Statistical Commission and, if so, to suggest its terms of reference.

Our Report has two main parts - the main body which contains our recommendations on the statistical system, scheme of service, statistical manpower and organization, statistical legislation and publication, and the Appendices which include a technical Statistical Appendix wherein we identify the major statistical gaps and make various recommendations and suggestions for the development and improvement of statistics.

We have the honour  
to remain,

Most respectfully yours,

YOU POH SENG  
*(Chairman)*

WU TA-YEH  
NGIAM TONG DOW  
RICHARD LAU  
TYE CHO YOOK  
LEE WAI MUN  
PETER TAN CHEOW KHOO  
CHIA SIOW YUE  
*(Commissioners)*

GOH CHOK TONG

(Secretary)

29th July, 1969.

## CHAPTER II COMMISSION'S GUIDELINES

2.1 The Commission is entrusted with a list of terms of reference which defines its area of work. In the course of its deliberations the Commission developed a set of principles which serve as guidelines in its proposals and recommendations. These principles need to be stated at the outset, for a full appreciation of, and in assessing the results of the work of the Commission.

2.2 In a country that is developing as rapidly as Singapore, the need for statistics is great. This need relates to overall planning for development, and to the study of specific sectors, parts, groups, or problem areas for policy implications or recommendations, for action implementation and evaluation. The need also relates to industry, banking and commerce for objective information to serve as the basis in their decision to invest, to expand or to diversify their activities. Finally, for the individuals and for households, objective information is useful as a basis for decisions regarding consumption, education for their children, and health of the family, in general, for rational living patterns from the welfare point of view.

2.3 Individual ministries, departments and organisations have their specific requirements. They are generally involved with specific approaches in the collection and production of statistical data and these data are useful in different ways to these organisations. It would therefore be logical to avoid generalities and to consider individual subject areas with regard to needs, problems and recommendations.

2.4 The position in connection with statistical information in Singapore is not so much the dearth of data as the lack of a system whereby the data are extracted and made available. The rapid and vast expansion in government administrative machinery in the present decade has resulted in a large amount of administrative records. These records are the raw material for a range of statistics; what is urgently required is the development of a system and an organisational structure to facilitate the extraction of useful statistical series from the raw material, and of a programme to provide regular basic statistics of importance to the country. (Some of these statistics and the nature of the problems that have to be solved in developing them are discussed in detail in the Statistical Appendix).

2.5 It is not to be expected that in all areas needs can be satisfied from administrative

records alone. In the course of the Commissions's deliberations and consultations with government and other bodies, it was clear that consideration has to be given to either regular or *ad hoc* surveys for the collection of much needed data not available from administrative records. Where this is the case, strict criteria of usefulness must be applied because in general surveys tend to be expensive, and, especially in respect of *ad hoc* surveys, are disruptive of established administrative routine of departments.

2.6 Where regular surveys are already being carried out (for example, surveys on prices and on wages and earnings), the Commission studied the organisation and the procedures involved with the view of improving the quality of data wherever needed or possible, economising and streamlining the resources. In the case of *ad hoc* enquiries which may be needed (for example, consumer expenditure surveys), it may be possible for a research organisation, such as the Economic Research Centre of the University of Singapore, to provide the expertise and some of the resources to initiate the work.

2.7 Throughout, the basic guideline along which the Commission makes its recommendations is that statistical data should not be produced for the sake of the data, or because we wish to compete with other countries in the amount of statistical tables. Also, although it may be desirable to provide plentiful statistics to international bodies, this *per se* is not regarded as of top priority, especially where it may involve additional expenditure. Needs are established primarily from the national angle, and must be related to planning and policy requirements and to the timely provision of objective information so that the pulse of the economy and of social changes can be constantly charted, evaluated and studied.

2.8 One major point that has been considered at length by the Commission is: How in practice are the needs to be known and established? The Commission is of the consensus that only through actual involvement with the statistics and through utilisation of statistics can needs be identified. Merely producing and supplying data is likely to lead to rather mechanical uncritical repetition of the same series over a long period of time, with little or no incentive to expand into new areas to meet current demands.

2.9 In the public sector the utilisation of statistics must in general be related to planning and policy decision, and evaluation of policy implementation. Increasingly, with Government assuring greater responsibility for planning for economic and social development, for the provision of the infrastructure for this development, and where more and more complex interrelations are continuously being established among the different parts of the public sector, and between the public sector and the private sector, the utilisation of statistics involves much more than the mere scanning of sets of figures and drawing of superficial conclusions. It involves research, analysis of the data, trend comparison, projection where necessary, and so on. And research must in turn involve interaction with planning. It therefore

follows that the rationalisation and expansion of the statistical activities in the public sector must be accompanied by some expansion of the research activities in the various fields. It also follows that, for the research to be meaningful, the officer in charge of research should have access to the Minister as well as to those responsible for planning and for policy decision.

2.10 The organisation in respect of the link between planning and research and between research and statistics, and the consequent requirements for the development of research and statistical activities must differ from ministry to ministry. The Ministry of Finance, the largest ministry with the most need for, and use of, economic and financial statistics already has a research group that works to the Minister and his planners on the one hand and with the Department of Statistics in the Ministry on the other. The next category covers those ministries that have the nucleus for a statistical setup and that produce or need to produce a substantial amount of statistics to meet their planning research requirements. In these cases the desirable trend may be towards developing and strengthening research and statistics in the respective ministries. The final category comprises ministries where there is no corresponding nucleus or where the statistical needs are not so much the production of large amounts of data rather than for judicious application of their rather restricted fields of information combined with derivation of other related data, geared towards planning and policy purposes. In other words, their need is more for development of research than of statistics. Accordingly the Commission recommends that these ministries ought to think along the lines of having a small number of research staff and of arranging with the Department of Statistics with regard to their data production as well as other data needs. The principle in such cases is to avoid proliferation of small statistical units and to avoid duplication of work.

2.11 In connection with the development of research staff, the Commission is not in favour of the creation of a separate category of what might be designated research officers because of the problems of restriction of promotion prospects; but also important is the advantage to be gained in having the acquirement of research experience as part of the ingredients of a rounded Administrative Officer. It is of course not recommended that all Administrative Officers be exposed to the experience, but those that have the aptitude should be given the opportunity to spend a year or two doing research with planning and policy application. In the modern government setting where planning for development is just as important as, if not more important than, routine administration, there is undoubtedly a need for officers at the top echelon who are aware of the potential of the contribution of applied research and who are able to assess critically research papers that come to them for action. A person who has participated in such research in the course of his career would be expected to have this awareness and to adopt a perspective rather than a routine approach to problems.

2.12 Continuity of research in individual ministries is maintained through the

director of research who should be appointed on a more or less permanent basis and who should be a fairly senior officer ( of Deputy Secretary grade) in order that close interrelations can be set up and sustained between researchers and planners at the appropriate level. An additional desirable qualification is that the director of research should have an adequate appreciation of applied statistics. In those ministries with a research and statistics section he would have one or more statisticians attached in his section, and in those ministries with a research section, he would need to obtain access to the central statistical organisation for direct or indirect production of the statistical data required for his work. For precisely the same reason that statistics should be produced not for their own sake but for the sake of planning research needs, it is recommended that statisticians in the various proposed statistical units should be research-oriented.

2.13 The Commission's work would be incomplete if it did not take into account how the needs for data from outside the public sector are to be met. While it is true that corporations are generally in need of rather specialised statistical information that is narrow in scope and that falls outside the functions of government statistical bodies, for the purpose of their research for planning and for entrepreneurial decisions they would invariably have to rely on a large amount of the macro-data and sector information available from the government bodies. In this connection it is anticipated that the statistics that the latter would be producing on the basis of research potential should turn out to be meaningful and useful. All the same it is felt that there may be major areas or needs that may not be foreseen in other connections and that may be met without excessive efforts. This point can be dealt with by the provision of some means of articulation of needs through a co-ordinating organisation such as a permanent Statistics Commission.

2.14 Last but not least, the Commission takes into account the fact that there is a large potential of research that exists in the institutions of higher learning and that can be harnessed towards work of national interest. It is perhaps true that statistics provide the material for applied research for the academic people; if the available data are meagre, and since data collection is expensive, it would not be surprising that research output is small. Basically, academic people are dedicated not only to teaching but also to research. Also, research at present is no longer confined exclusively to armchair, ivory-tower research. Basic empirical research has now assumed a status which it did not have before the last war. Moreover there is a distinction between such research and the work proposed for the research and statistics section in the public sector. The latter is mainly concerned with rather quick, timely research that would provide immediate objective basis for policy decisions, while the former is concerned with more basic macro-studies that are time consuming but that are essential for planning involving structural change. This is the type of research that is usefully

carried out by researchers in universities. (The Statistical Appendix to the Report explains the kind of research and related statistical needs for a range of economic topics that would be necessary for an integrated programme of accelerated growth in the seventies. Many of these are certainly areas of national importance that would be time-consuming for civil servants to undertake and that would be undertaken by university research workers if their efforts are harnessed in this direction particularly through the provision of the requisite data.)

2.15 For research workers in institutions of higher education as well as in business enterprises there is the need to articulate their statistical requirements, and the proposed establishment of a permanent Statistics Commission with appropriate representations would go some way towards meeting this need.

2.16 This is not all. Basic research into growth and the concomitant structural changes generally calls for more information than available or likely to be available. This information exists in the administrative records or in the relevant survey questionnaires, but is difficult or expensive to extract, and is normally allowed to go into oblivion. There is a case first for the setting up of a statistical archive, and second, for the records or questionnaires to be available to research workers, subject to the conditions that sufficient time has lapsed (say one year or so), that all identifications of the respondents are erased, and that this is approved by the Minister. The chapter on "Statistical Legislation" deals with this matter in some detail.

2.17 With regard to the programme of research and statistics development in the public sector itself, the Commission makes its recommendations in the full awareness of the following facts: that for 1970 and part of 1971 at least, a very large portion of the statistical resources in the country will be involved with the population census, that in any case it will take time to develop the requisite statistical manpower, and that expansion of the necessary budget will need to be at a realistic pace. The Commission therefore plans out a six-year programme up to 1975 for realisation of the proposed target of development.

2.18 It should be noted that the budget as set out by the Commission relates only to personal emoluments. Other annually recurrent expenditure and special expenditure to support the research and statistics staff have not been included.

2.19 The target and the phased development, together with the related budgets should be regarded in the spirit of flexible guides and as providing orders of magnitude. The Commission would consider its basic task to have been fulfilled if the general principles set out in this chapter are accepted or mostly accepted, and if steps are taken to build the foundation of the proposed statistical infrastructures. In the process of development it may well be found necessary to deviate to some extent from the proposed programme. The wisdom of the experience gained in working with the problem, coupled with the wisdom of hind-sight, should not be stultified by any inflexibility that may be introduced at this stage.

2.20 Finally, the Commission is aware of the shortage of trained statisticians and statistical technicians in the country. As well as the fact that the 1970 population census is likely to can on all the available resources, this is the reason why the Commission's recommendations advocate a very gradual increase particularly of professional and technical personnel. Concomitant with this is the need for the institutions of higher education to develop programmes of training to help increase the supply of the necessary skilled and efficient manpower. Some improvements in the appointment and promotion prospects of such professional and technical officers in the government service is also needed in order to ensure that the right kind of persons get into the service, and, having entered it, stay in it.

### CHAPTER III SUMMARY OF RECOMMENDATIONS

3.1 At the end of each substantive chapter in this Report a summary of conclusions and recommendations is generally given for easy reference. For even easier reference, the major recommendations of the Commission are assembled in this chapter.

3.2 We recommend the development of a decentralised statistical system under which the present Department of Statistics will be expanded, and a research and statistics section set up in each of the four Ministries of Labour, National Development, Education and Health which have statistical activities that are sufficiently complex, plentiful, specialised, and nationally important as to warrant the establishment of a separate statistical system within each of them.

3.3 We recommend that the present Statistics Department be expanded so that it will not only be able to bridge the various statistical gaps which we have identified but will also be in a position to undertake essential research, to interpret and analyse the data amassed. The expanded Department of Statistics will deal with economic and financial statistics, demographic and vital statistics as well as other (mainly social) statistics for those ministries not provided with statistical staff and facilities. It will, therefore, also provide advisory and consulting services to other ministries.

3.4 We also recommend the establishment of a census and survey section within the Department to plan and undertake censuses and surveys.

3.5 A research and statistics section should be set up in the Ministry of Labour. It will incorporate the present nucleus of statistical personnel and should be headed by a research man (e.g., labour economist) rather than a statistician. It is recommended that for the period before 1972, the proposed section devotes its effort to putting the half-yearly

employment returns from establishments on a firm footing, improving the employment exchange records, revamping the designs and procedures of the annual surveys into hours of work and earnings of workmen, and planning for a regular labour force survey from 1972. Other functions of the Labour Research and Statistics Section will include the maintenance of a unified establishment register and the various classificatory systems in use in the country, pay research and wage studies, manpower studies and the co-ordination and improvement of data from the Central Provident Fund.

3.6 For the Ministry of National Development, we recommend that a small research and statistics section be set up. This section will design and implement a reporting system on construction activities in Singapore, estimate regularly the value of construction starts and completions, collect price statistics on key building materials, compile an index of construction on a regular basis, and conduct an agricultural census quinquennially. It is not proposed that the section should collect the data itself; this function will, wherever possible, devolve on the executive departments concerned.

3.7 We further recommend that when the State and City Planning Office completes its programme in 1972, its statistics collection and updating activities should be integrated with the research and statistics section of the Ministry.

3.8 The Ministry of Education already has a Research and Statistics Division. From our deliberations, we conclude that the Division is inadequately staffed for the speedy compilation of education statistics, and the undertaking of surveys and research aimed at evaluating existing educational problems, policies and practices. We, therefore, recommend a modest increase in staff for the Division which should be headed by a director of research responsible for the twin units of research and statistics. The Division will need to expand the scope and coverage of its present education data to include tertiary and adult education and to improve the timeliness of the data it collects.

3.9 For the Ministry of Health, we recommend the establishment of a research and statistics section to put the collection of health statistics on a firm footing so that the necessary statistical information is available for planning and evaluational research. The section will need to substantially reorganise its processing and compilation of information from medical records. Towards this end, we recommend a permanent installation of punch card equipment to meet both processing and administrative requirements. As soon as arrangements can be made for the required information to be transferred to punch cards, we recommend that the compilation of routine medical and health statistical series should be assumed by the Electronic Data Processing Unit.

3.10 In general we believe that the development of statistics should be tied to the development of problem- and policy-oriented research in Government. We have, therefore,

recommended a somewhat decentralised system under which the Department of Statistics will be expanded to include interpretative research and a research and statistics section set up in each of the four Ministries of Labour, National Development, Education and Health. Since the Ministry of Finance already has a research section which includes the Chief Statistician in its regular research group meetings, our recommendations for the Department of Statistics, therefore, refer mainly to statistical development.

3.11 In respect of ministries not provided with separate statistical systems we recommend that their statistical requirements, if limited, be met largely by arrangements with the Department of Statistics. The need of these ministries is more for research and interpretation of data extracted from administrative records than for raw data collection. When these ministries, through research, can identify and develop statistical needs that are either too specialised or too expensive to be handled by the Department of Statistics, they may then make a case for setting up their own statistical research and statistics sections. In the meantime, it is expected that the research and statistical activities of these ministries will continue to be undertaken by their professional officers who probably will have other routine and administrative duties as well. Our recommendations for these ministries, therefore, relate only to the improvement of a few statistical series which have importance and interest beyond the Ministries.

3.12 We are also not making any firm recommendations in respect of statutory bodies since they fall outside our terms of reference. But as these boards play an important part in the economy of the country and as many of them have significant statistical and research activities, we would be failing in our duty if we do not take cognizance of these activities. We have accordingly set out various suggestions regarding the ways and means by which this useful store of statistical data can be made available.

3.13 Although the Ministry of Interior and Defence harbours a wealth of data on manpower, we are not including it in our Report because of the understandable secrecy that must shroud the security aspect of its operations.

3.14 For the development of the Electronic Data Processing Unit our recommendation does not cover the proposed expansion of equipment because there already exists a Government Committee to look into the data processing needs of the Government and the question of acquiring a second computer. The acquisition of a second computer, if approved, would entail an expansion of staff and our recommendation is limited to this expansion of personnel.

3.15 The Commission has carefully examined the statistical needs and activities of the Department of Statistics and those Ministries recommended for development of research

and statistics, and the staff required to effectively carry out these activities. Our recommendation takes into account only the required staff expansion. There would be a certain extent of expansion of the necessary research support, where for example, survey work forms part of the statistical activities, but we have excluded this because it is not possible to estimate these requirements at this stage. We do not, however, expect the research support to be large.

3.16 Our recommendation in respect of the manpower requirements of the expanded decentralised statistical system for the period 1970-1975 is summarised in Table III-1. The table covers only technical manpower; purely administrative and Division IV staff are excluded because there is no problem in the recruitment of these staff.

3.17 Table III-2 indicates the budget requirements over the same period. It is possible that there may be additional expenditure in those ministries not provided with a separate research and statistics section. However, it is not expected to be large because of the limited statistical activities involved and the fact that the research and statistics function will only be part of the duties of the officers who were concerned in these ministries.

3.18 The budget of \$1.46 million for statistical staff in 1969 (estimated on a calendar basis) constitutes only 0.18 per cent of the estimated total Government current expenditure of \$849 million for the year. Assuming that Singapore's gross domestic expenditure at market price grows at a modest average rate of 7 per cent per annum<sup>21</sup> and that the Government's ordinary budget increases to 20 per cent of gross domestic expenditure from 1970<sup>22</sup>, the projected expenditure of \$2.76 million on statistical manpower in 1970 would have risen marginally to only 0.21 per cent of the Government's total budget.

3.19 Since there is a general shortage of trained statistical personnel and since training takes time, we have recommended a gradual build-up in the recruitment of statistical manpower over the six-year period 1970 - 1975. The needed increase in the supply of statistical manpower calls for co-ordination with the institutions of higher learning.

3.20 To cater to the rather specialised requirements of the enlarged statistical service, and to retain the staff recruited, we recommend that the entire statistical service from the top level of statisticians to the bottom grade of clerical assistants should be a closed, but unified service. In other words, the statistical staff can be transferred between the Department of Statistics and those Ministries with a separate statistical section, but not outside the statistical service. Promotion will be within the closed service.

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<sup>21</sup> Average annual growth rate for 1965-1968 is 8.1 per cent, and the rate for 1968, 7.8 per cent.

<sup>22</sup> Average for 1966-1968 is 16.0 per cent and the proportion for 1968, 17.2 per cent.

3.21 However, we do not recommend that the recruitment of a separate category of research officers, but that the research posts in the proposed research and statistics sections should be filled by administrative officers or officers from other common user service, as part of their service experience. Continuity of research will be maintained in the person of the director in charge of each section.

3.22 In the decentralised statistical system as proposed, there needs to be a central agency to co-ordinate and promote statistical activities. We, therefore, recommend the setting up of a Statistics Commission charged with the responsibilities of co-ordinating and the advancement of all statistical activities in the public sector, the development of a statistical archive, and the giving of expert advice on all matters relating to statistical compilation and utilisation. The Statistics Commission may form permanent Expert Committees to consider specific fields of interest relating to statistics.

3.23 We recommend that for the Statistics Commission to function effectively it should be given mandatory powers for ensuring that Government departments and statutory bodies comply with its recommendations. We further recommend, however, that the final appellate authority should be the Minister.

3.24 In respect of revisions to the Statistics Ordinance, we recommend that (1) the secrecy provisions in the Ordinance be amended so that data on output by individual commodity or commodity groups and employment by industry could be published without reference to individual firms, irrespective of the number of firms in the industry, unless otherwise exempted by the Minister, the Statistics Ordinance be amended so that, subject to the approval of the Minister, research institutions can be allowed access to particulars of individuals, provided that the disclosure would be so arranged that it would be impossible to identify the individuals and further provided that an appropriate time lag, depending on the nature of the information and at the discretion of the Minister, has elapsed, the Statistics Ordinance will be the overall ordinance to which clauses pertaining to statistical activities in other legislations, e.g. Employment Act, 1968, are subservient.

Appendix II

## STATISTICAL APPENDIX

### THE DEVELOPMENT OF ECONOMIC, DEMOGRAPHIC AND SOCIAL STATISTICS IN SINGAPORE

#### CHAPTER H

#### DEMOGRAPHIC AND SOCIAL STATISTICS

## INTRODUCTION

Although demographic and social statistics cover a wide and varied field of statistical data the scope of this chapter is confined to the main areas of statistics currently compiled by the Department of Statistics, and the administrative statistics of government departments which provide for the social, cultural and community development of the population.

2. Except for demographic statistics and some general social data with economic bearing on the population at large, the Department of Statistics has not been involved in the compilation of social statistics. Social statistics pertaining to the welfare of the community have not been a major field of work of the Department. Most of the statistics available for Singapore are largely compiled from the administrative records of government departments. The existing system and the development of education, health and housing statistics have been discussed in the main chapter of the Commission's Report.

3. The Department of Statistics has been associated with the compilation of vital statistics and the estimates of population for a considerable period, and presently the taking of the censuses of population has also become one of its principal responsibilities. In addition to demographic statistics, the Department has also been directly or indirectly involved with the maintenance of records relating to major segments of the population such as the registration of persons for identity cards, the preparation and revision of electoral rolls, and the compilation of tourist and immigration statistics. This is because of the siting of the punch-card machines and later the computer in the Department and the experience it has gained in handling records of large volume and the use of classification and coding schemes.

4. The aim of this chapter is to examine the existing statistical series and to indicate the areas which require further development. For convenience, demographic and social statistics are discussed separately. In regard to social statistics, one aspect of the work would lie in improving the system of reporting and the maintenance of records. Similar to other economic statistics, this would require streamlining the system with the dual purpose of providing the flow of essential information to the administration and at the same time facilitating the preparation of statistics for planning and research.

5. It will be appreciated that social statistics compiled from administrative records would only apply to segments of population who make use of the services of government ministries and departments. Thus there is the need for surveys which will provide information on a representative cross-section of the community in the context of household and family units rather than of individuals.

## NEEDS FOR DEMOGRAPHIC AND SOCIAL STATISTICS

6. Demographic statistics are commonly divided into two broad fields. The first type aims at measuring the size of the population, its spatial distribution and the components or structure of the population. The second type measures the dynamics of population, such as fertility, mortality, nuptiality, divorce and migration<sup>23</sup>.

7. The first type of demographic statistics, which requires a total count of the population is generally collected by taking a population census. The population census provides data on the total number of persons living in a country by geographic distribution and classified into demographic, social and economic characteristics. From such a census, data are also derived on household and family units and their distribution and composition. The census is therefore the main comprehensive source of information on the sex, age and ethnic classification of the population and labour force, and provides the basic background information to which all economic and social data are related. Data on the population and segments of population are essential for the computation of many direct indicators which are on a per capita basis. The census is the only comprehensive source of data on economic activity of the labour force classified by industry and occupation. The census also provides the most complete source of data on literacy, educational characteristics, country of birth and citizenship status of the population.

8. Censuses of population are normally conducted decennially, but recently a number of countries are moving to quinquennial population censuses. In a section of the main Report, it has been suggested that Singapore, with the rapid changes expected from accelerated economic development, should proceed to a mid-decade population census after the 1970 Census of Population. .

9. In order to trace the dynamics of population changes, data are required annually and at more frequent intervals to ascertain the net increase of the population each year or semi-annually, sub-divided by natural increase (i.e. the excess of births over deaths) and net migration, (or the excess of immigrants over emigration or vice versa). These estimates are generally prepared from administrative records of birth and death registration and from migration statistics showing immigrants from abroad and residents settling overseas. In Singapore, comprehensive statistics are available for birth and death registration but there is some weakness in immigration statistics for accurate estimation of the net migration factor. The lack of detailed statistics of emigration has prevented the estimation of the population by age distribution. The estimates of population by sex, age and ethnic group are basic data for

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<sup>23</sup> *A Handbook of Household Surveys, A Practical Guide for Inquiries on levels of living (Provisional Addition)* United Nations, 1964 series F. no. 10.

more precise calculation of fertility rates, age-specific death rates and certain age segments of the population such as school-going age or working age.

10. Statistics of births are needed to measure the trend in births and are necessary to evaluate the current rate of, and the potential of population growth, and for studying the implications of population development in terms of age structure and the effects of economic and social changes. Death statistics, on the other hand, are necessary benchmark for the planning and execution of health programmes besides the wider role of assessing demographic changes with respect to economic and social environments. When related to the population and birth statistics they provide indicators of the level of health such as the expectation of life at birth, the annual infant mortality rate and the crude death rate. Birth and death statistics when related to other demographic statistics therefore provide the general indicators of the levels of living.

11. Unlike economic statistics, where the demand for data has been conditioned by the concentrated effort to improve the economic well-being of the nation and the population the development of social statistics has remained in the background. Recently the need for an integrated system for the reporting and presentation of social statistics of the country has been stressed internationally and regionally. For developed economies it has been felt that a body of statistics is required to measure the stresses and strains of an expanding economy on the levels of living of the various segments of the population. In regard to developing economies, the difficulty of attaining a statistical system to show the inter-relationship of demographic, economic and social statistics in the short run, has directed attention towards household surveys to provide quick and detailed information for policy formulation. It is not expected that Singapore should adopt such systems for its own use without consideration of local needs. However, there is an immediate requirement to examine the range of social statistics in an integrated whole and to assess the applicability of statistical series which are necessary for Singapore's social development.

12. At present information on households, family composition and levels of living is fragmentary. Studies are needed to ascertain the total food consumption in terms of caloric intake and nutritive content; the health condition and educational background; housing and housing condition; fertility and the practice and attitude towards family planning and family limitation within the framework of the income and expenditure patterns of households. Such studies will generally have to be supplemented by household surveys, the scale of enquiry depending on the type of study in view. To some extent the data collected from households such as household composition, ethnic group type of housing and total household income and expenditure are often similar, and there is room for a co-ordinated approach to surveys of this nature. There is therefore scope for a combined approach towards household surveys, which

not only cater for data requirement of the Department of Statistics and government ministries interested in social, cultural and community statistics but also the ministries with statistical units of their own such as Labour, Health, Education and National Development.

## THE EXISTING STATISTICAL SYSTEM

13. This section is largely confined to a short description of the statistical system of the Department of Statistics in the compilation of demographic statistics and the administrative statistics of the Social Welfare Department. Marriage statistics of Singapore are compiled from the records of the Registry of Muslim Marriages and the Registry of Civil Marriages.

### *Demographic and Related Statistics.*

#### *The Registration of Births, Deaths and Marriages*

14. Vital statistics are compiled by the Department of Statistics because of its close link with the Registry of Births and Deaths. In the past, the Registry of Births and Deaths was within the administrative control of the Department, and even though this function has been transferred out of the Department, the Chief Statistician officiates as the Registrar-General of Births and Deaths in Singapore and has the responsibility of preparing the Annual Report on the Registration of Births and Deaths in Singapore.

15. The registration of births and deaths is virtually complete, and birth and death statistics are compiled and published regularly each month. The annual statistics show cross-classification by a number of characteristics such as ethnic group, sex, age of mother, and deaths by causes of death. These statistics are compiled from a compulsory system of registration of a birth or a death within specified periods as prescribed in the Ordinance. The forms used in the registration of a birth, a death or a still-birth have been revised during 1967 and 1968. This revision has increased the content of information for statistical compilation. For example, in the preliminary report of a birth, additional information is now collected on the type of birth, birth order of child, weight of child, period of gestation and the occupation of the mother. Similarly, an attempt has been made to distinguish the direct causes of death, the antecedent causes and significant conditions with information on the approximate interval between onset and death in the reporting of a death.

16. In order to complete the registration of vital events, marriage statistics are compiled from the records of Civil marriages and Muslim marriages. The former relate to marriages registered under the Christian and Civil Marriage Ordinance which was later repealed with the enactment of the Women's Charter, 1961. With the coming into force of the Charter, the registration of marriages is now complete and full coverage of marriage

statistics for Singapore is achieved.

#### *Estimates of Population*

17. In addition to preparing statistics on the registration of births and deaths, it is also the responsibility of the Registrar-General of Births and Deaths to prepare estimates of the population of Singapore. These estimates are prepared half-yearly by the Department and show a classification of the estimated population by ethnic group and sex.

18. Currently the estimates are calculated on the basis of the population census count brought forward by the natural increase each year or half year (i.e. the excess of births over deaths) plus the net migration during the period. In the past when immigration control was on a Pan-Malaya basis, the estimate of external migration was calculated from the net passenger movement between Singapore and the Federation of Malaya on the one hand and the rest of the world on the other, and allocated according to the ratio of Singapore's and the Federation of Malaya's population. When the 1957 census of population count was taken it became evident that there were substantial movements of population between the two territories. The smaller figure in the population count compared with the population estimate of the Federation of Malaya was almost matched by the larger figure in the Singapore census count compared with the population estimates. It was then decided that some estimate should be made of the movement of population between Singapore and the Federation of Malaya, and steps were taken to estimate these movements by the net exchange of identity cards. Thus when a Singapore identity card was exchanged for a Federation identity card it was considered as a movement of person out of Singapore, and vice versa. This method of estimation was incomplete because children below the age of 12 years were not issued with identity cards and also because identity cards were not exchanged freely and spontaneously by persons who have moved their residence. It is not anticipated that such permanent change of address would now be at the level of the period 1948-1957, but a method of estimating external migration in the context of Singapore only should be devised to improve the population estimates after the 1970 census of population.

#### *Maintenance of Census Records and Analysis of Census Results*

19. Prior to the 1957 census of population, the censuses of Singapore were taken with the Federation of Malaya, and the tabulation of census results was not undertaken in Singapore. There were therefore no census records available for constructing sampling frames for surveys and reallocation of the distribution of the population of Singapore other than the enumerated districts shown in the census reports. The maintenance of these records can serve a number of useful purposes as was evidenced by their use for surveys and estimates from the

1957 records. Much more use could have been made of these records if there were adequate staff to maintain them and update the frames for sample studies.

20. The Department was also responsible for the calculation of the population projections of Singapore 1957-1982 and the first set of abridged life tables ever to be published for Singapore. Where resources permitted, steps were also taken to provide estimates of certain segments of the population and the updating of the population projections in the light of more current data on fertility and mortality.

#### *Other Related Demographic Data*

21. As mentioned earlier, the other related demographic data compiled by the Department of Statistics are largely on account of the siting of the computer and the experience gained from the coding and classification of massive records such as the 1957 census of population. The assistance of the Department was sought in the initial planning of the National Registration Scheme which involved the exchange of identity cards of more than 1.2 million persons. As the identity card is the basic source information for the compilation of the electoral registers, the Department is also indirectly involved in this work.

22. For the same reason the Department is responsible for the coding and compilation of tourist and immigration statistics from the disembarkation cards collected by the Immigration Department. These statistics are supplied to the Tourist Promotion Board and the Immigration Department respectively. Tourist statistics are also published in the Monthly Digest of Statistics. The other statistics compiled by the department because of its central processing facilities are civil service statistics. They are primarily tabulated for the Establishment Branch of the Ministry of Finance. The Department also provide assistance to the Singapore Family Planning and Population Board and the Deputy Chief Statistician is an ex-officio member on this Board.

#### *Social Statistics*

23. Comprehensive statistics of the social and cultural aspects of the population are mainly restricted to data which are available from the population censuses. In addition, the administrative statistics on education, health and housing give overall information of major segments of the population using the services provided by Government and Statutory Bodies. Ad hoc survey of households, such as the Household Sample Survey, 1966, provide data on the composition, structure and characteristics of households and housing units.

24. Administrative statistics compiled from the records of government sources on social welfare, cultural and community development are largely for the evaluation of such services. A number of these series are also of general interest and are published in the Monthly

Digest of Statistics and the annual reports of the respective government departments. The development of social statistics such as those of the Social Welfare Department is underlined by the need for basic research on the data generated from the existing records, the need for streamlining of the reporting and registration system for more relevant data to be extracted and the present shortage of data-processing facilities for the tabulation of more regular and detailed reports.

## THE DEVELOPMENT OF DEMOGRAPHIC AND RELATED STATISTICS

25. It is expected that the development of demographic statistics will gain its impetus when the 1970 census of population is completed and the results analysed. Arising out of this brief review, however, there are a few series which could be included in the programme for the development of statistics. These are discussed under the same item headings as those adopted for the description of the existing system.

### *The Registration of Births, Deaths and Marriages*

26. With implementation of revised forms for births and deaths registration additional tabulations would be available for more elaborate analysis of vital statistics especially with the more current and detailed demographic data which will be forthcoming from the 1970 census.

27. For the calculation of life tables and survival ratios for population projections it is desirable that more detailed cross-classification of birth and death statistics should be attempted at least for the three years 1969-1971. Data such as birth statistics by weeks and months, births by mother's age by single year's, are required for the calculation of infant deaths and age-specific fertility rates respectively. More elaborate analysis will also be required of death statistics for the calculation of mortality rates and age-specific death rates. These data are also required for the cross-checking of age reporting and coverage of children below the age of five years in the census enumeration.

28. In regard to the registration procedures, the change in the system should enable a more thorough check of birth registration with administrative records of the Health Ministry so that a reconciliation can be made each month between birth registration and the actual births at the maternity and other hospitals and those serviced by the Maternity and Infant Health Clinics. Secondly, the matching of birth registration with infant deaths should be attempted to detect any under-registration of births and infant deaths. The present reporting of the causes of death will have to be streamlined in order that more accurate classification of direct and antecedent causes could be introduced into the tabulations. It is possible that

Singapore would move forward in adopting the Eighth Revision of the International Statistical Classification of Diseases, Injury and Causes of Death.

#### *Estimates of Population*

29. As indicated earlier, one of the weaknesses of the population estimates lies in the estimation of the net migration factor. The Commission has recommended the introduction of an embarkation card for the complete documentation of persons arriving and leaving the country. The possible complication as pointed out in Chapter IX of the main Report on the statistical activities of other Ministries and Statutory Boards, lies in ascertaining the number of persons leaving Singapore for West Malaysia, as it is not possible to distinguish visitor leaving Singapore via West Malaysia from residents of Malaysia returning and Singapore residents travelling to West Malaysia. If these statistics could be supplied by the Malaysian Government or indirectly estimated, the adoption of the embarkation card would pave the way to more accurate data on the net migration factor and the detailed estimates of population by sex, ethnic group and age group required for a number of studies such as those for the planning of education, health and other economic and social development. Population Censuses and Census Records

30. In order that demographic changes and trends could be evaluated and research studies undertaken for future planning of population censuses, it has been proposed that a census unit be established in the Department of Statistics. It is expected that with the experience gained from the forthcoming census, a nucleus of staff would be available to make the necessary analysis of census results and to prepare the groundwork for future censuses. It has been suggested that mid-decade population censuses are valuable in the major updating at five-yearly intervals of input-output tables, in establishing new benchmarks for the national accounts, especially national income by industrial origin, in checking on employment data of the Labour Ministry, and other employment data of economic censuses, demographic and migration statistics. A permanent unit to serve the needs of planning of future censuses, analysis of census results and studies of demographic trends and specific demographic characteristics will therefore be expected to be engaged full-time with such a work schedule in hand.

#### *Other Related Demographic Data*

31. The other related demographic data of the department are closely linked with the development of economic, labour, education, health, housing and other social statistics. The co-ordination of these statistics and the maintenance of statistical series which will give a comprehensive picture of the economic and social inputs of the country in terms of its

population and labour force are more effectively undertaken by a central organisation with computer facilities working to a co-ordinating body such as a permanent Statistics Commission. Even though the basic collection and compilation work may be decentralised this should not prevent joint consultation and technical discussions to present a body of inter-related statistics on a broader scope.

32. Where the compilation of statistics is undertaken by the central data-processing section, close liaison between the research, planning and administration with the statistical counterparts would enhance the improvement and extension of statistical series. Thus it is expected that the Labour Ministry would be working closely with the department in the development of labour and manpower statistics, similarly the research staff of the Tourist Promotion Board would be enlisting the help of the department in the preparation of tourist statistics, and the Establishment and Organisation and Methods Branch of the Treasury in the development of Civil Service Statistics. In regard to Civil Service Statistics, it may be possible that data can be extended to the compilation of statistical data with similar cross-classifications for Statutory Boards to give comprehensive statistics of the public sector as a whole.

#### THE DEVELOPMENT OF SOCIAL STATISTICS

33. The development of social statistics hinges largely on the research and planning requirements of the ministries which are providing the social services of the State. However, it can be foreseen that as their research progresses, it will be necessary for them to conduct field enquiries to evaluate the effects and results of their programmes and to assess the need for changes in the light of information collected from such enquiries. These studies are already being conducted by the Housing and Development Board and the State and City Planning Department of the Ministry of National Development. It is anticipated that similar enquiries involving interviews with households and individuals would be planned by other ministries such as Labour, Health and Education to gather data which require deeper probing into a number of social factors. There is therefore a need to co-ordinate the survey work of government ministries and statutory bodies, and a permanent commission is eminently suited for this role. This would prevent the duplication of efforts and avoid the proliferation of surveys for which basic information to be gathered is similar in content.

34. The idea of a combined approach towards household surveys underlines the need of a central unit which should be responsible for the maintenance of household frames and their updating. This unit established in the Department of Statistics would be of considerable

assistance to government ministries and statutory boards. The department would be able to build a comprehensive household frame after the 1970 census of population, and, with the help of staff with the expertise on sampling techniques and fields enquiries, would be in a position to help with the initial planning of projects. This unit will also be in constant touch with surveys conducted and in progress. As household surveys are likely to be expensive this approach would reduce the cost of initial planning and repetitive visits of households who have already been interviewed at one stage or another. This form of approach if co-ordinated by a permanent commission would provide the machinery by which questionnaires which are inter-related could be studied and the need for data collection and proposed tabulation of results examined on the basis of providing overall information on the socio-economic aspects of the country.

## SUMMARY AND CONCLUSIONS

35. This chapter of the appendix examines the statistical activities of the Department of Statistics and those ministries in government which are producers (if demographic and social statistics. The bulk of the demographic statistics of Singapore is generated by the Department of Statistics, which is responsible for the tabulation of data on the registration of births, deaths and marriages and presently the censuses of population. The department also prepares the population estimates and the tabulation of statistics on immigration, tourists and passenger movements by sea and air. With the siting of punch-card equipment and the computer in the department, it is directly or indirectly involved in the maintenance of massive registration records, which are not entirely statistical in nature. The department is not directly engaged in the preparation of social statistics. Social statistics available for Singapore are largely the by-product of administrative records, and the development of these statistics depends on their requirements for research and planning and for administrative purposes. It is expected that their need will increase when research studies are accelerated and expanded.

36. The need for demographic statistics discussed in this chapter refers to more detailed population estimates such as by ethnic group, sex and age group, more accurate estimates of immigration and emigration, more extensive studies of demographic problems, and the use of census records, and the usefulness of mid-decade census of population. In regard to social statistics it would be useful to provide for an integrated system of data, and to assess the gaps in information required for Singapore. It is anticipated that field enquiries will be necessary to study the social changes of a cross-section of the population and to evaluate their levels of living.

37. In order to service such a statistical system, it is suggested that a census unit

should be established in the department, together with a unit responsible for sampling frames and sampling techniques. The development of demographic and social statistics would have to be strengthened by additional staff, both for the work of the department as well as to assist other ministries without statistical units of their own.

38. A combined approach towards household surveys is also suggested and the coordinating function would be one of the functions of the proposed permanent commission. The centralisation of overall demographic and social data and field enquiries would prevent duplication of efforts and reduce the cost of surveys which are largely similar in basic content.