



**ONLINE TRAINING COURSE ON
“SUSTAINABLE TOURISM INDICATORS”
12-14 September 2022**

SDG 8.9.1 Indicator: Tourism direct GDP as a proportion of total GDP and in growth rate

Rifa Rufiadi, rifa@bps.go.id

Senior Statistician. BPS-Statistic Indonesia

SDG 8.9.1 Indicator:

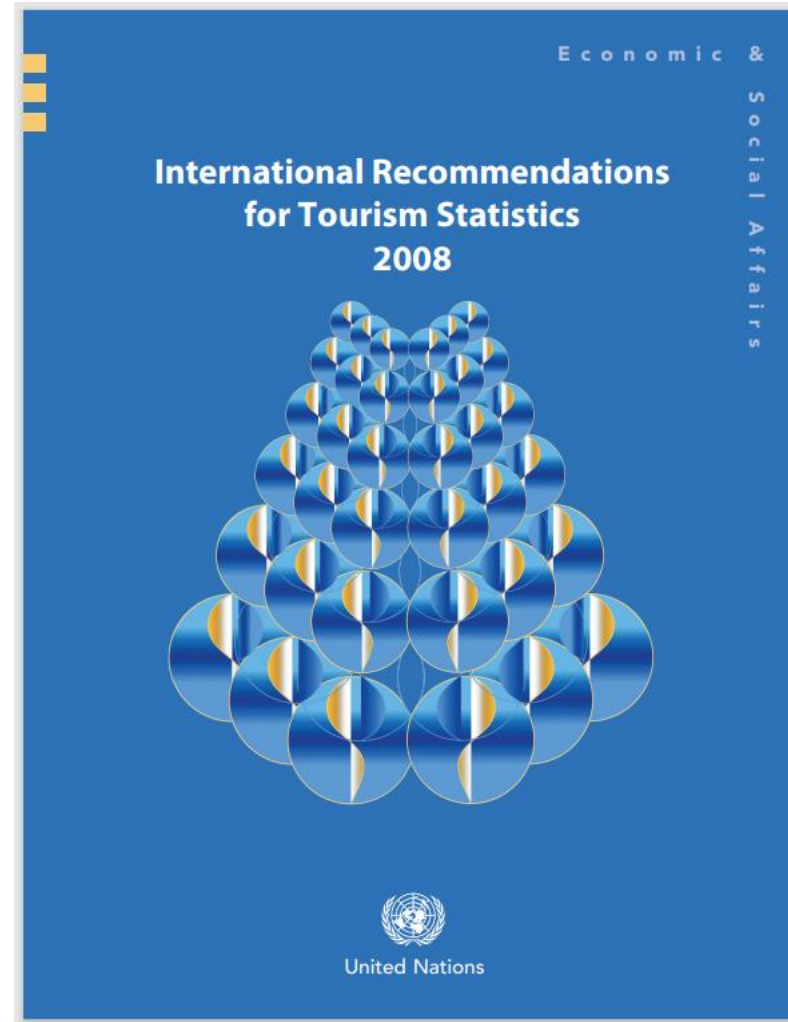
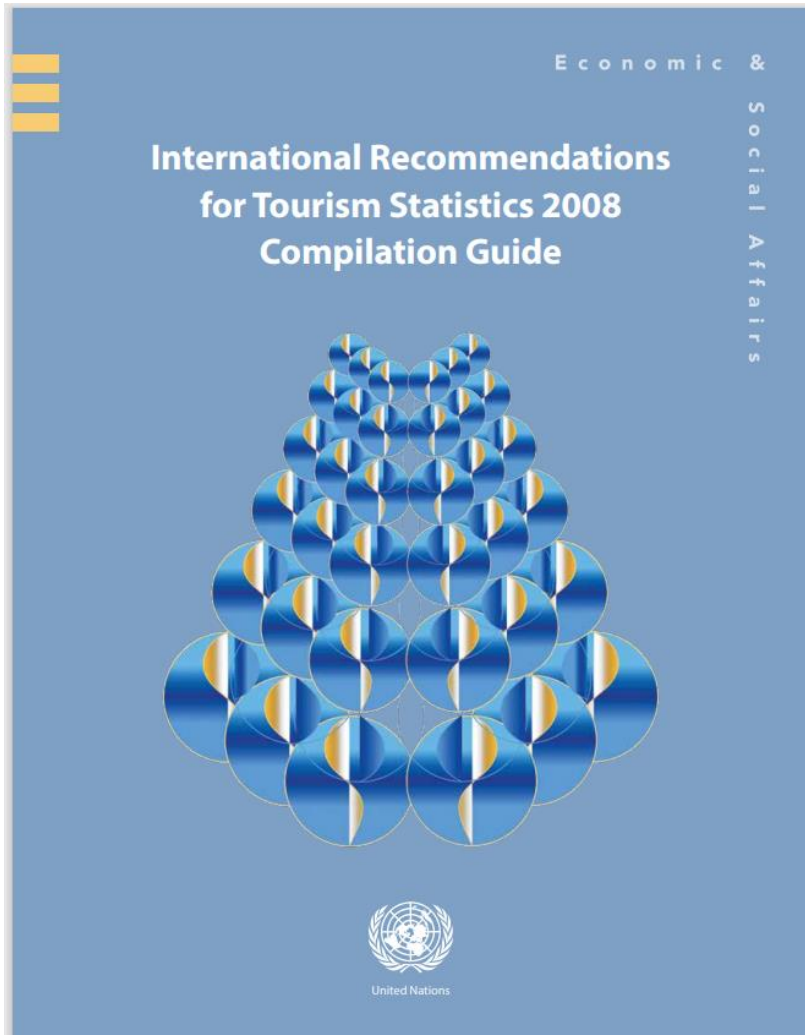
Tourism direct GDP as a proportion of total GDP and in growth rate

- **Definition:** Tourism Direct GDP (TDGDP) is defined as the sum of the part of **gross value added** (at basic prices) generated by all industries in response to internal **tourism consumption** plus the amount of net taxes on products and imports included within the value of this expenditure at purchasers' prices.

The indicator relies on the Tourism Satellite Account:

Recommended Methodological Framework 2008, an international standard adopted by the UN Statistical Commission and led by UNWTO, Organisation for Economic Co-operation and Development (OECD) and EUROSTAT.

REFERENCES





SISTEM TOURISM STATISTICS

DATA SOURCES:

- Household Survey
- Industry Tourism Survey
- Administration Data
- BIG Data



Tourism Supply &
Demand Data



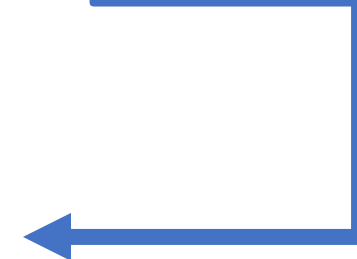
TOURISM SATELLITE
ACCOUNT (TSA)

GDP

SITS

BOP

SDGS



STS should be
part of NSS

Policy Planning

Business

Marketing

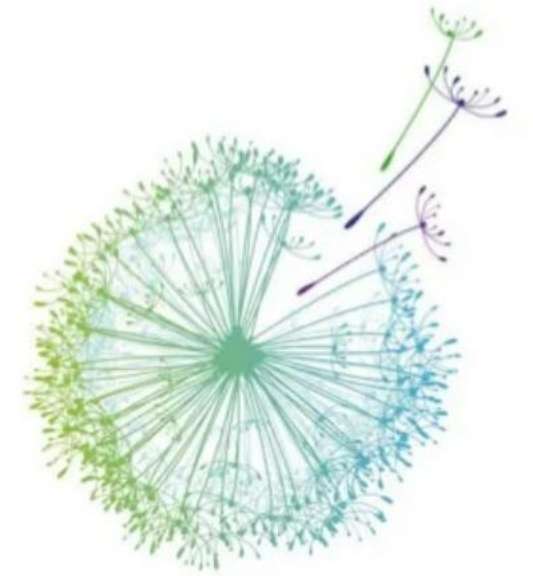
Demand Perspective

Basic Concept

- Inbound → arriving & leaving
- Domestics → leaving & returning
- Outbound → leaving & returning

- Visitor is a traveler taking a trip to main destination outside his/her **usual environment**, for less than a year, for any purpose other than to be employed by a resident entity in the country or placed visited.

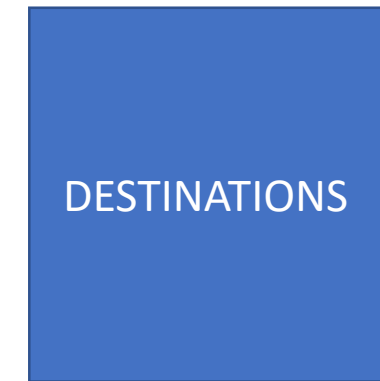
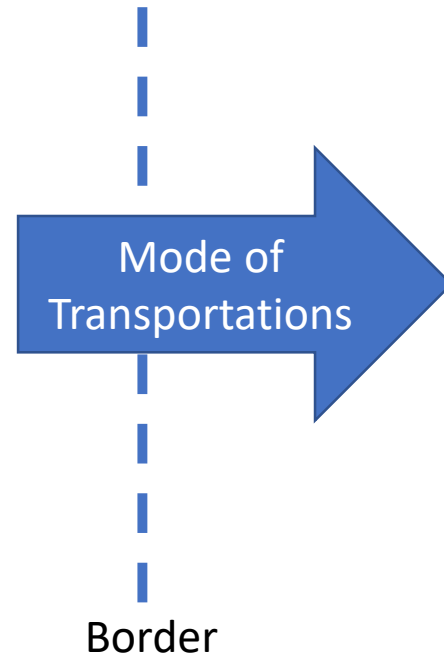
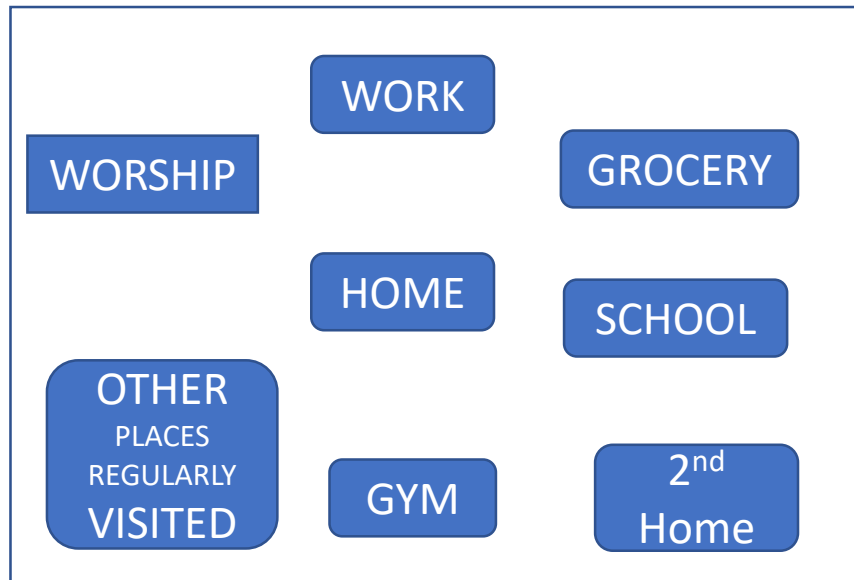
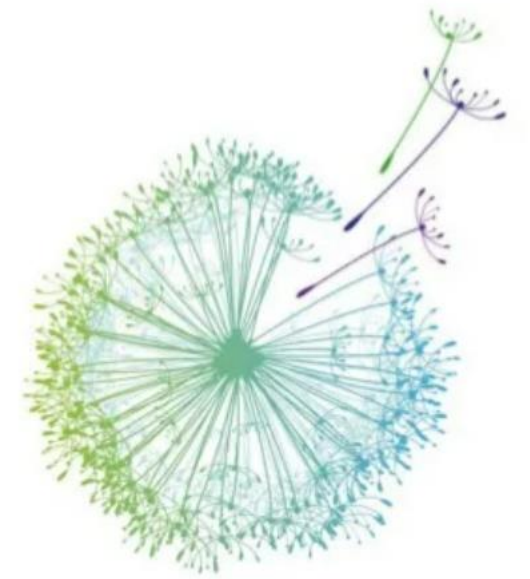
- Tourism subset travel
- Visitor subset traveler



IRTS 2008

USUAL ENVIRONMENT

- Economic territory → geographical reference → resident
- Frequency, Duration, Distance, Border



Length of Stay < 12 Months
Purpose
Type of Accommodation
Expenditure

Criteria for usual environment in selected countries

SOURCE:
International Recommendations for
Tourism Statistics 2008
Compilation Guide

Criterion/Country	Distance (km)	Administrative Borders	Respondents' self-evaluation	Frequency of visit	Duration (hours)
Austria		√	√	Twice per month	
Chile	30			Once a week	
Finland	30-50			Once a week	
France	100		√		
Indonesia	100	√	√		
Ireland			√	Once a week	
Israel			√		5
Latvia		√	√	Daily	
Netherlands	10				2
Saudi Arabia	80			Once a month	
Switzerland			√		4
United States	80-120				
Cyprus	50			Daily	
Czech Republic		√	√	Once a week	3
Netherlands	10				
Sweden	50				
Slovenia	50			10 visits in three months	
United Kingdom					3
South Africa	50				
Spain			√		
Portugal			√		
Germany		√	√		

DATA SOURCES

- HOUSEHOLD SURVEY
- TOURISM INDUSTRY SURVEY
- ADMINISTRATION RECORD
- BIG DATA

INBOUND TOURISM

Arrival and Leaving

Entry & Departure Card (E/D Card)

Microsoft Bing

Thai Arrival Card



rifa

15



ALL

IMAGES

VIDEOS

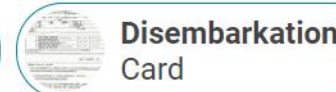
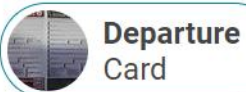
MAPS

NEWS

SafeSearch: **Strict**

Page titles: **Auto**

Filter



How to fill out Thailand's arrival card (2018 latest version) | The ...

Thai immigration card: What is it and how to fill it properly | Bangkok ...

Arrival and Departure Cards for Thailand

How to fill Thai immigration form? Thai immigration card ...

Data Source: Administration Data

Fit for Inbound & Outbound

- Immigration Data

- MOU with Data Owner
- Data Transmission
- Data Processing

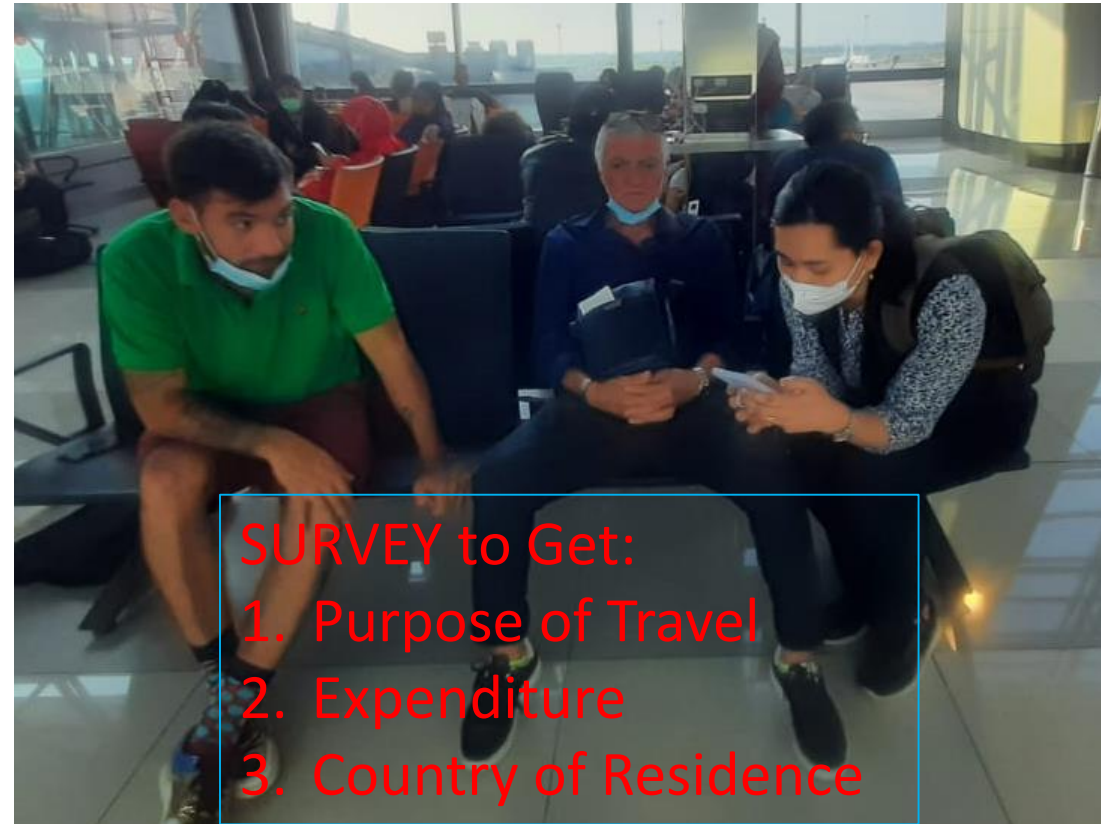
- Data Captured

- Gender
- Nationality
- Age
- Time of Entry & Exit
- Type of Visa
- Entry Gate
- ID (Hashed)

NOTE:

COUNTRY OF RESIDENCE VS NATIONALITY

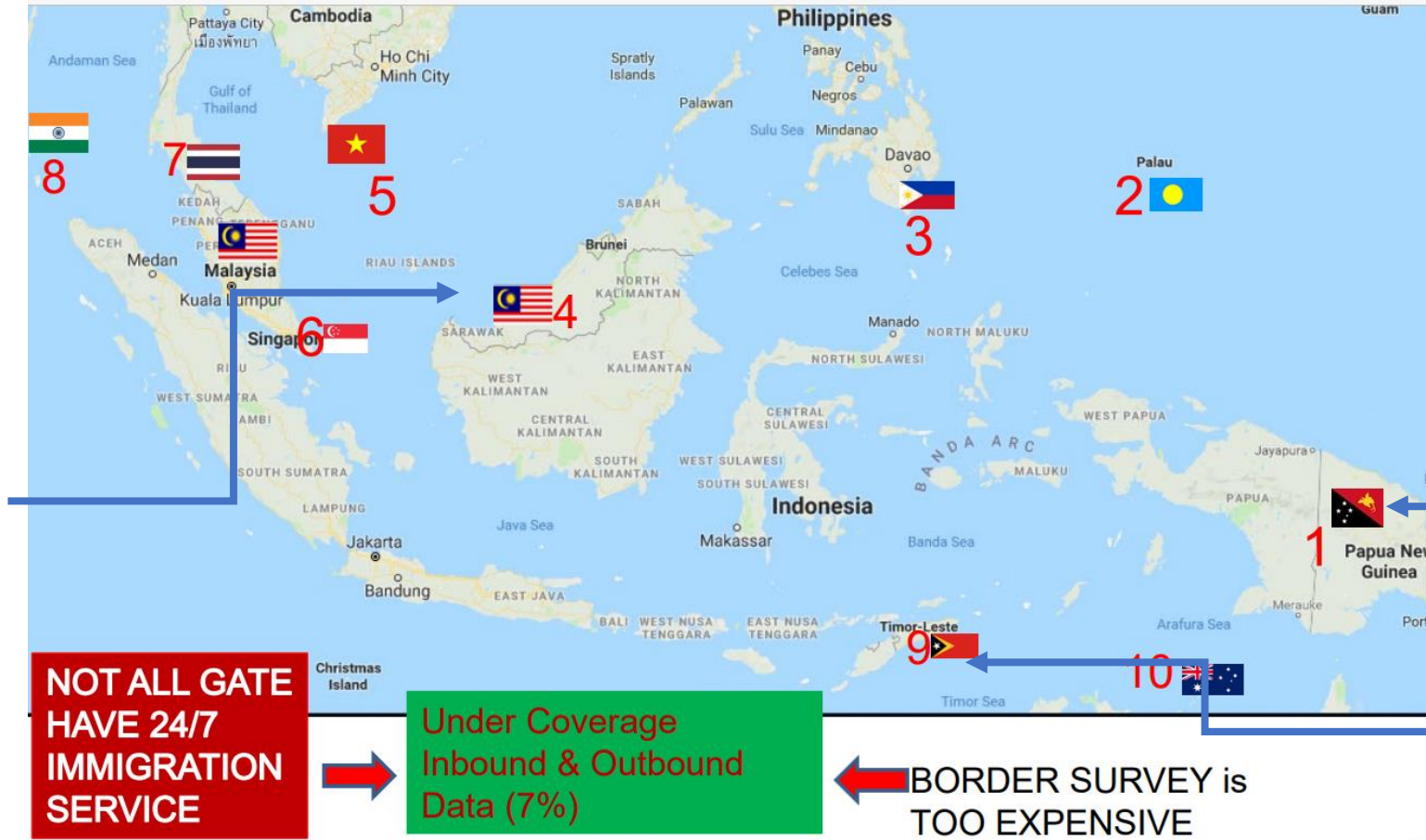
+



*Appendix 2. Distribution of International Visitors by Nationality and Country of Residence,
2021 (percent)*

KEBANGSAAN / NATIONALITY	Negara Tempat Tinggal/ Country of Residence							
	Afrika Selatan	Albania	Amerika Serikat	Andorra	Arab Saudi	Argentina	Australia	Austria
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Afrika Selatan	100,00	-	-	-	-	-	-	-
Albania	-	25,00	-	-	-	-	-	-
Amerika Serikat	-	-	82,98	-	-	-	2,13	-
Arab Saudi	-	-	-	-	97,80	-	-	-
Argentina	-	-	-	-	-	14,29	3,57	-
Australia	-	-	-	-	-	-	90,51	-
Austria	-	-	-	-	-	-	5,56	86,11
Bangladesh	-	-	-	-	11,11	-	-	-
Belanda	-	-	0,54	-	-	-	-	-
Belarus	-	-	-	-	-	-	-	-
Belgia	-	-	-	-	-	-	-	4,35
Brasil	-	-	-	-	-	-	5,56	-
Brunei Darussalam	-	-	-	-	-	-	-	-
Ceko	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	4,55	-
Ethiopia	-	-	-	-	-	-	-	-
Federasi Rusia	-	-	-	-	-	-	-	-
Filipina	-	-	-	-	-	-	-	-
Hong Kong	-	-	-	-	-	-	-	-
Hongaria	-	-	-	-	-	-	-	-
India	-	-	4,00	-	-	-	-	-
Inggris	-	-	-	-	-	-	0,68	-
Irlandia	-	-	-	-	-	-	-	-
Italia	-	-	-	-	-	-	-	-
Jepang	-	-	-	-	-	-	-	-
Jerman	-	-	1,65	-	-	-	0,83	-
Kanada	-	-	-	-	-	-	2,38	-

ADDITIONAL TO IMMIGRATION DATA: MOBILE PHONE DATA



- ✓ BPS rely on the Immigration Record and Border Survey for Inbound & Outbound Tourism Data
- ✓ Visits from neighbour countries only 7% of tourism

CALIBRATION

BORDER AREA SURVEY FORM 2017





**PENDATAAN WISMAN BERBASIS MOBILE POSITIONING DATA
DI WILAYAH PERBATASAN INDONESIA 2017**
KEMENTERIAN PARIWISATA DAN BADAN PUSAT STATISTIK

Lingkari atau isilah jawaban yang sesuai

Nama Pos Lintas Batas:

No. Kuesioner :

- Nama :
 Umur : tahun
 Jenis Kelamin :
- Pekerjaan utama:

Profesional	-1	Ibu Rumah tangga	-6
Bisnis manager/Eksekutif	-2	Pelajar/Mahasiswa	-7
Pegawai Pemerintah	-3	Pensiunan	-8
Militer	-4	Lainnya, sebutkan	-9
Karyawan Swasta	-5	(.....)	
- a. Jumlah HP yang anda gunakan saat ini buah
 b. Jumlah Sim Card yang anda gunakan dan aktif saat ini buah
 Sebutkan nama providernya:
 Sim card 1 : Sim card 3 :
 Sim card 2 : Sim card 4 :
- Apa yang anda lakukan ketika di Indonesia?

Menggunakan SIM Card asal (roaming)	-1
Mengganti dengan Sim Card Lokal	-2
Mematikan Mode Roaming	-3
Mematikan HP	-4
- a. Maksud utama mengunjungi Indonesia:

Bekerja mendapat gaji/sekolah	-1	→ STOP
Berlibur/rekreasi	-2	Keagamaan/ziarah
Bisnis/usaha	-3	Kesehatan & kecantikan
Dinas	-4	Pendidikan/Pelatihan
Mengunjungi teman/keluarga	-5	Misi OR/budaya
MICE/rapat	-6	Lainnya, sebutkan:
		(.....)

 b. Rencana lama tinggal di Indonesia hari
- Frekuensi mengunjungi Indonesia dalam satu bulan terakhir:

Setiap hari	-1	Sebulan sekali	-3
Seminggu sekali	-2	Tidak tentu	-4
- Negara tempat tinggal
- Kewarganegaraan
- Berapa uang yang akan dibelanjakan di Indonesia?
 Mata uang :
 Nilai :
- Dalam perjalanan ini, dari pintu mana anda masuk ke Indonesia

MPD is not 100 % Inbound Data:

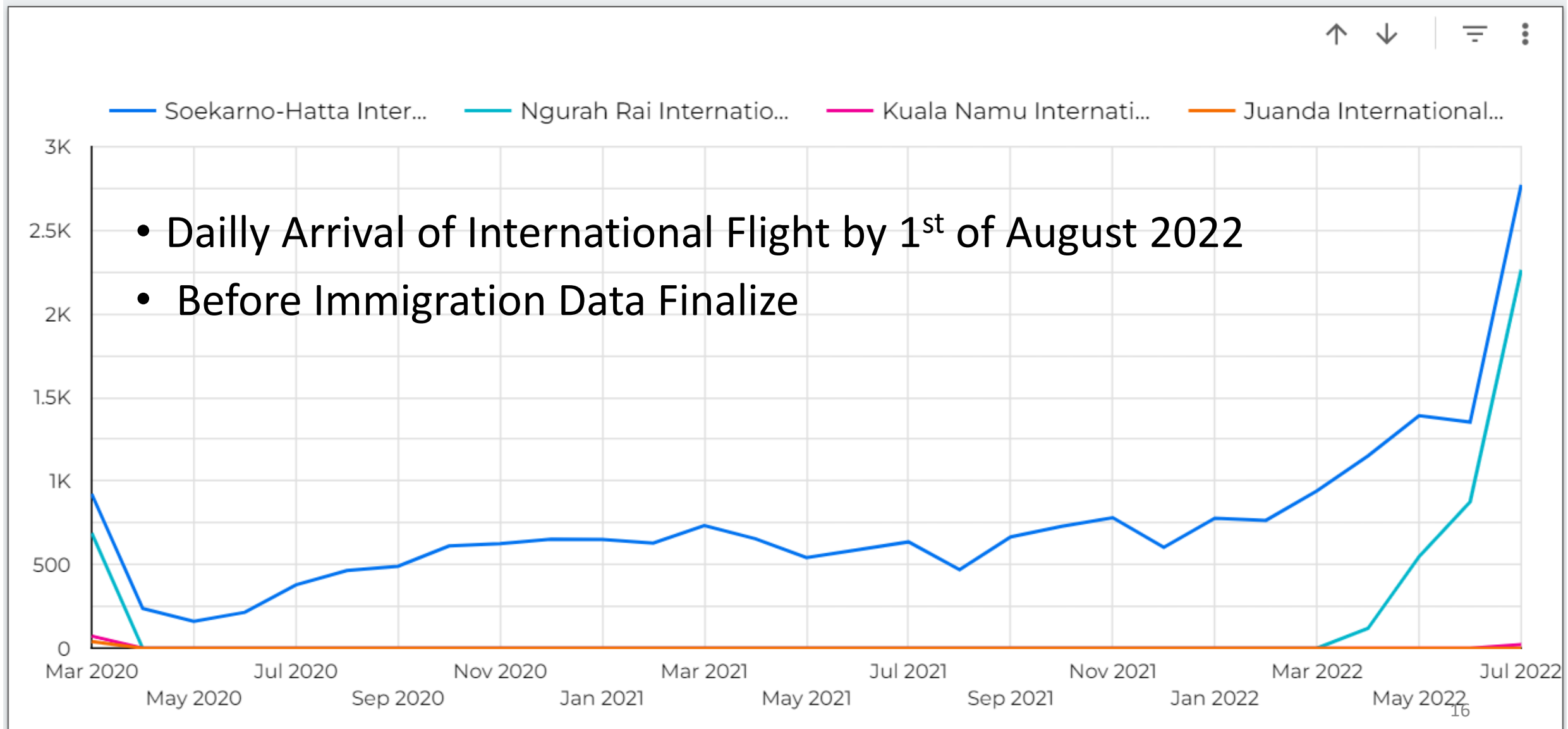
1. It comes from one MNO
2. Not all border crosser Using Mobile Phone (non-roamer)
3. Not all Mobile Phone User are Tourism
4. Some Using more than one Sim Card

$$AT = \frac{MPD}{X_{roam}} * \frac{1}{1 - P_{NR}} * \frac{1}{MS} - WCI$$

Where:

- AT = Additional Tourism
- MPD= Number of SIM cards detected by MNO in the border area
- X_{roam} =Average number of cell phones actively used by tourist
- P_{NR} = Proportion of non-roamers
- MS = Market Share of roaming to the MNO
- WCI= Number of tourist entering trough Immigration Post

BIG DATA as Supporting for Adm Data



OUTBOUND TOURISM

LEAVING & RETURNING

IMMIGRATION, MPD + Digital Survey



- IMMIGRATION RECORD AT INTERNASIONAL GATES
 - UNKNOWN DESTINATION CONTRY
 - LENGTH OF TRAVEL
 - SEX
 - AGE
 - TIME OF LEAVING & RETURNING

- MOBILE PHONE DATA RECORD:
- DESTINATION COUNTRIES OF TRAVELER :
- LENGTH OF STAY



DIGITAL SURVEY :

- TO MEASURE EXPENDITURE WHILE OVERSEAS

DIGITAL SURVEY:

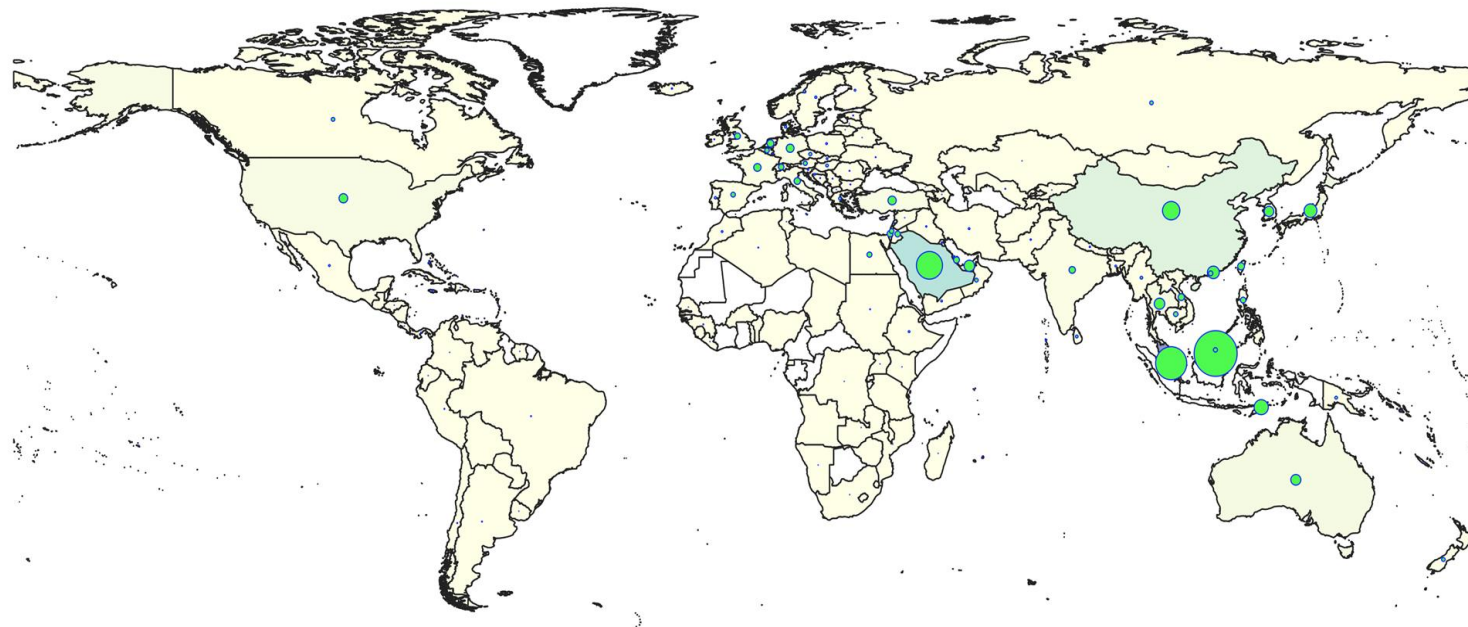
1. MOU WITH MOBILE NETWORK OPERATOR
2. SEND LINK OF QUESTIONNAIRE TO IDENTIFIED TRAVELER
3. FILL THE CAWI QUESTIONNARE



ROAMING Mobile Phone Log Dataset Example

ROAMING DATA

date	time	mcc_destination	mnc_destination	hashed imsi/msisdn
21/09/2018	23:59:21	420	01	439114f7a28d2f4eef896c38e7f70321
21/09/2018	23:59:22	208	09	7f859e31d44a1012275306aa01925de1
21/09/2018	23:59:22	302	610	d865eab7ccf0ff0727adb75db2960e6a
21/09/2018	23:59:22	310	30	cee4f08b61a6f60012e2437b77dced75
21/09/2018	23:59:22	404		
21/09/2018	23:59:22	404		
21/09/2018	23:59:22	418		
21/09/2018	23:59:23	310		



DOMESTIC TOURISM

Leaving & Returning

Data Source: Household Survey

Need Survey Frame : Household has member as traveler

Activities:

- Sampling Design
- Designing of Questionnaire
- Survey Hand Book/Manual
- Training for Trainer
- Enumerator Training
- Collecting data
- Data Processing

FUTURE:

- Expensive
- Respondent Memory Laps
- Respondent Burden
- Field Work Load
- Impossible to get monthly data

Could Get Traveler &
Expenditure data in one step

Data Source: BIG Data & Digital Survey

Fit to collect travelers precisely

- Mobile Positioning Data

Frequency, Duration, Border,
Distance, Usual environment Could
be Measured accurately

- More Granular
- Timelines
- Lower Cost
- Reduced Workload
- Capacity Building (experiences)
- Provide OD Matrix
- Tracing trip

To be Considered:

- IT Infrastructure
- Availability of Data Scientist
- Regulation
- Side bar data for supporting MPD:
 - Sim card Used by Traveller
 - Digital Survey to get
 - Purpose of trip
 - expenditure



Mobile Phone Log Dataset Example

DOMESTIC MPD DATA

msisdn PHONE NUMBER	datetime timestamp	source char	bts_lat char	bts_lon char	prov PROVINCE	kab SUB PROV	kec DISTRIC	desa VILLAGE	node char	trx_date date
6281 ...	2018-02-08 13:33:03	LBA_ALL	-4.54691	120.35833	SULAWESI SELATAN	BONE	TANETTE	CELLU	3G	2018-02-08
6281 ...	2018-02-08 13:51:39	CHG_POST	-4.54051	120.30777	SULAWESI SELATAN	BONE	TANETTE	MACANANG	3G	2018-02-08
6281 ...	2018-02-08 14:00:39	CHG_POST	-4.53591	120.30377	SULAWESI SELATAN	BONE	TANETTE	MACANANG	3G	2018-02-08

ID

Hashed MSISDN

Datetime

Transaction
timestamp

Source

Type of data
stored (CDR,
signalling)

Lat & Lon

BTS coordinates

Change Criteria for usual environment in Indonesia after using MPD

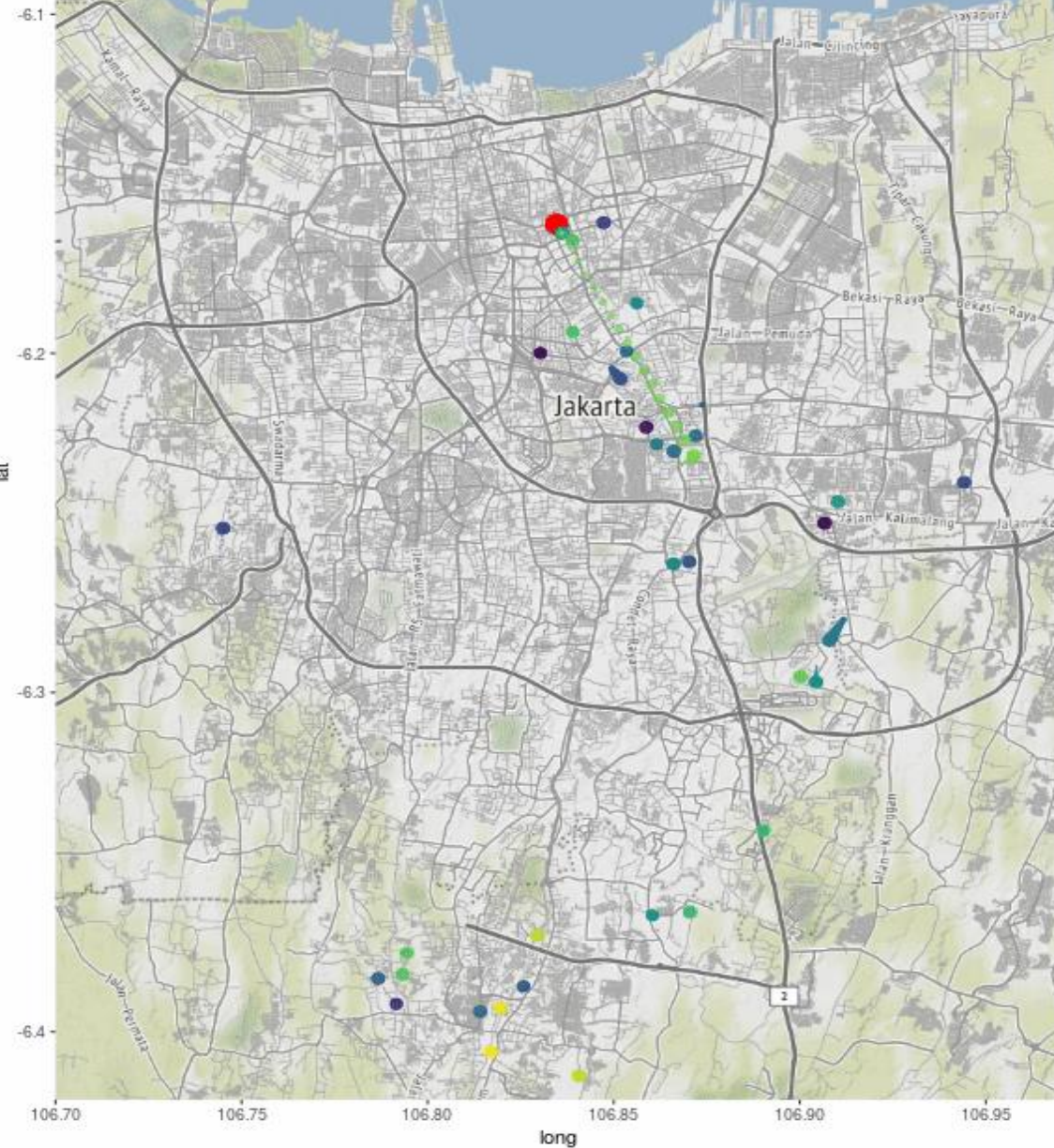
HOUSE HOLD SURVEY

Criterion/Country	Distance (km)	Administrative Borders	Respondents' self-evaluation	Frequency of	Duration (hours)
				visit	
Indonesia	100	√	√		

MOBILE PHONE/POSISTIONING DATA

Criterion/Country	Distance (km)	Administrative Borders	Respondents' self-evaluation	Frequency of	Duration (hours)
				visit	
Indonesia		√			6

Examples of Subscriber Mobilities

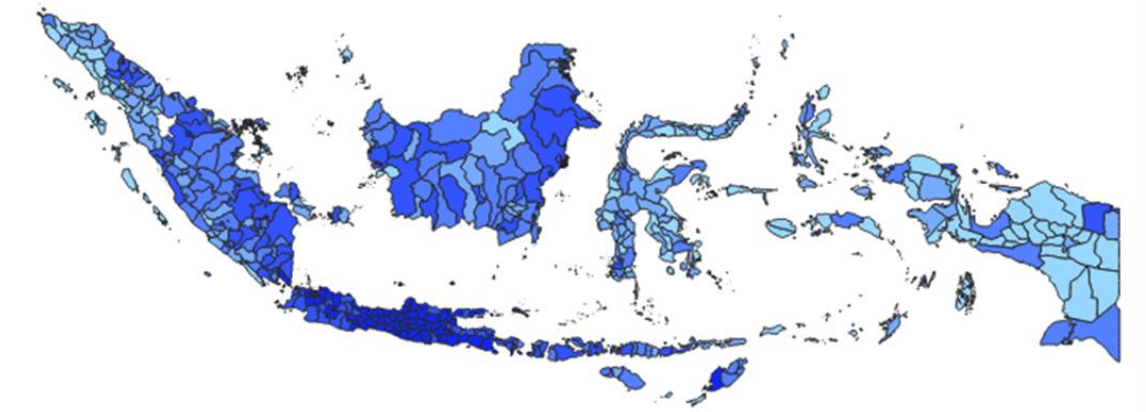


➤ DESTINATION OF DOMESTICS TOURISM

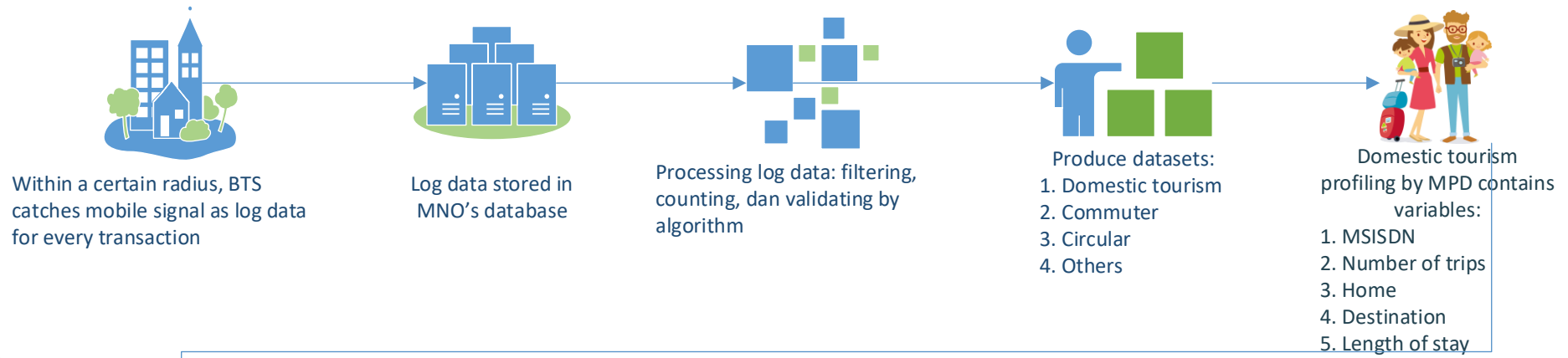
Based on Household Survey



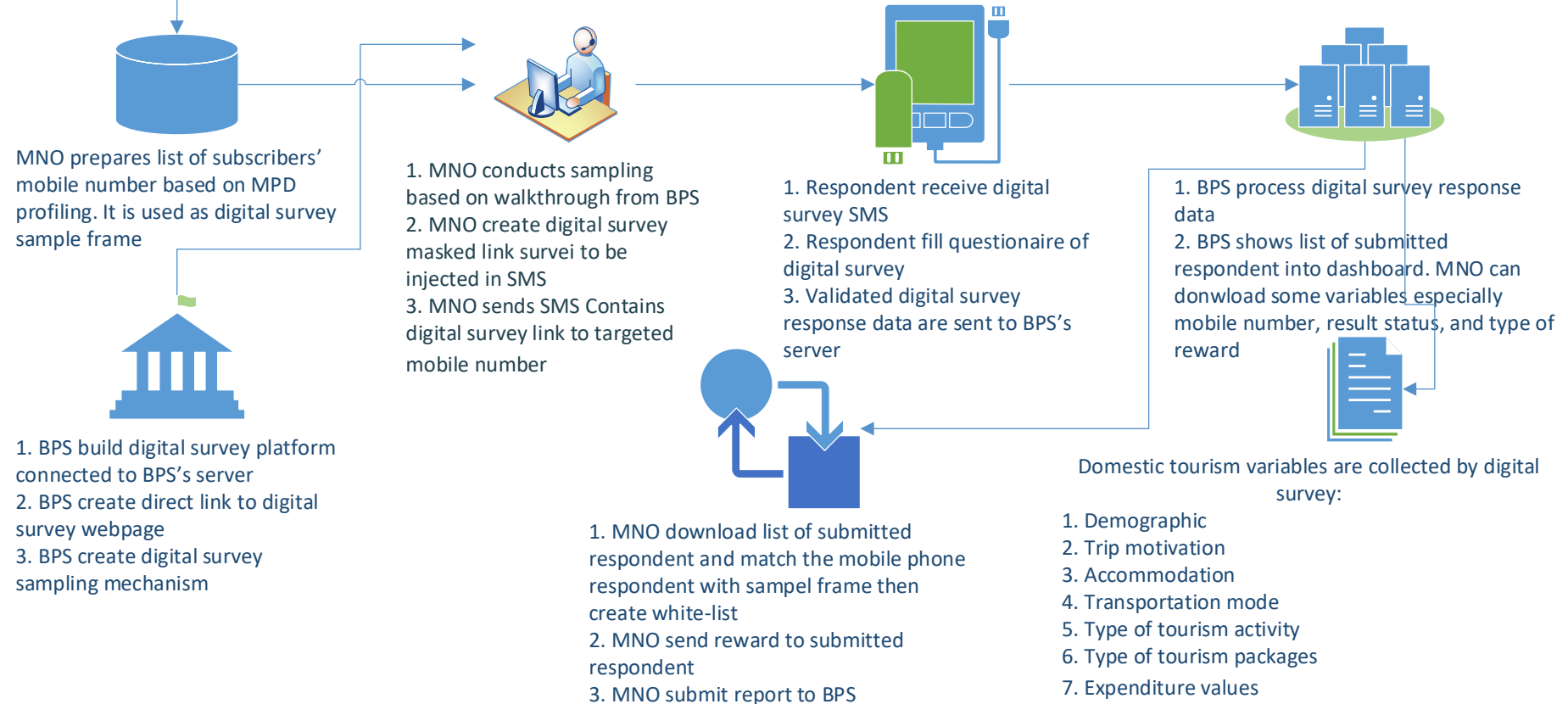
Based on MPD



MPD



Digital Survey



Tourism Expenditure

Amount paid for the acquisition of consumption good & service for and during tourism trips paid directly by visitor or reimbursed by others

Purchased on the trips + before & after

Recorded when it is consumed or acquired

- Include

- Transportation
- Accommodation
- Food & beverage
- Valuables
- Durable
- Education
- Health
- Museums
- Performing art
- Sport
- Travel agency service

- Not Include

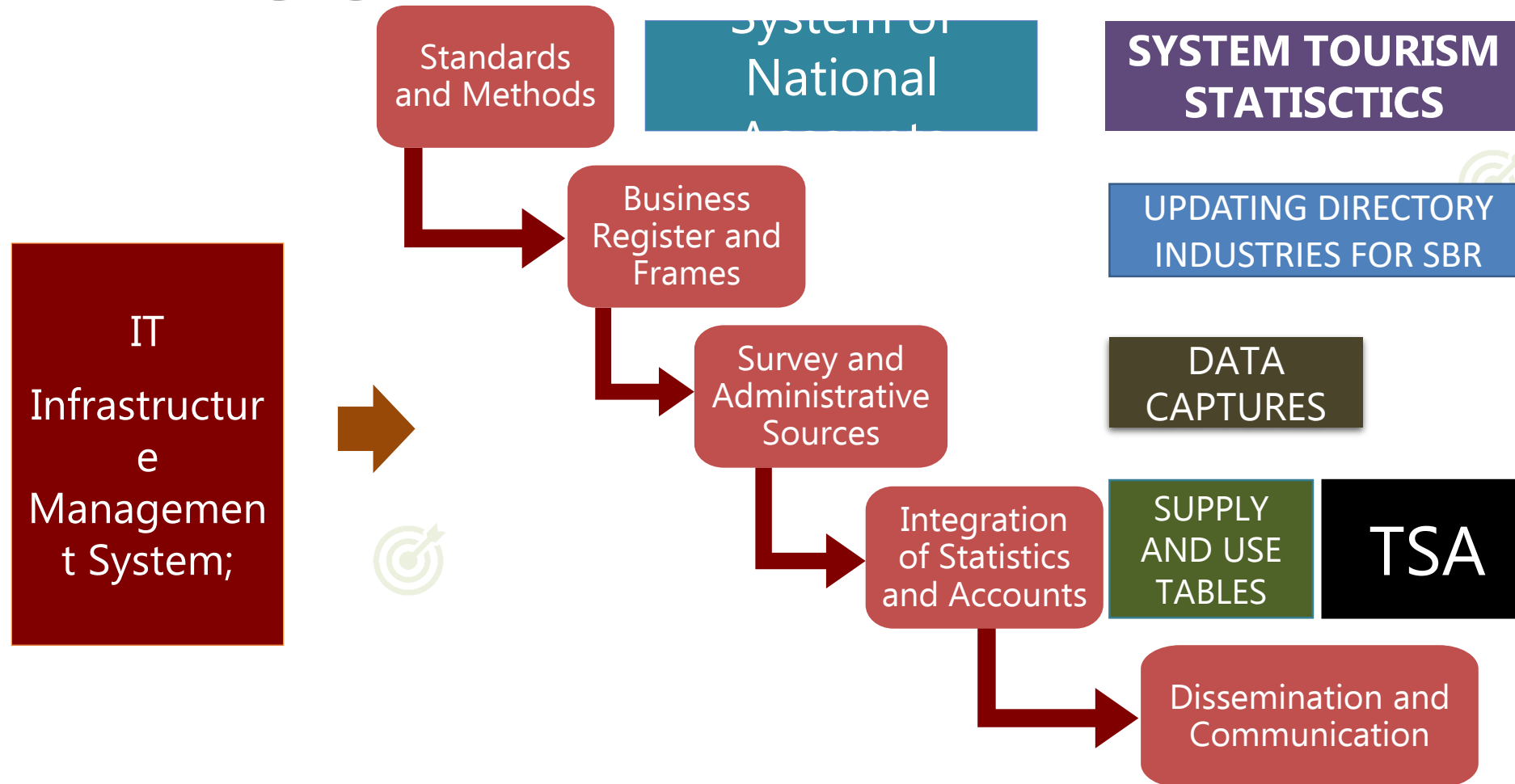
- Social transfer
- Purchase of Assets (except valuables)
- Good for resale
- Housing, real estate, major repair
- Imputation of vacation home
- Taxes not part of acquired product
- Interest

TOURISM SERVICES TRANSACTION

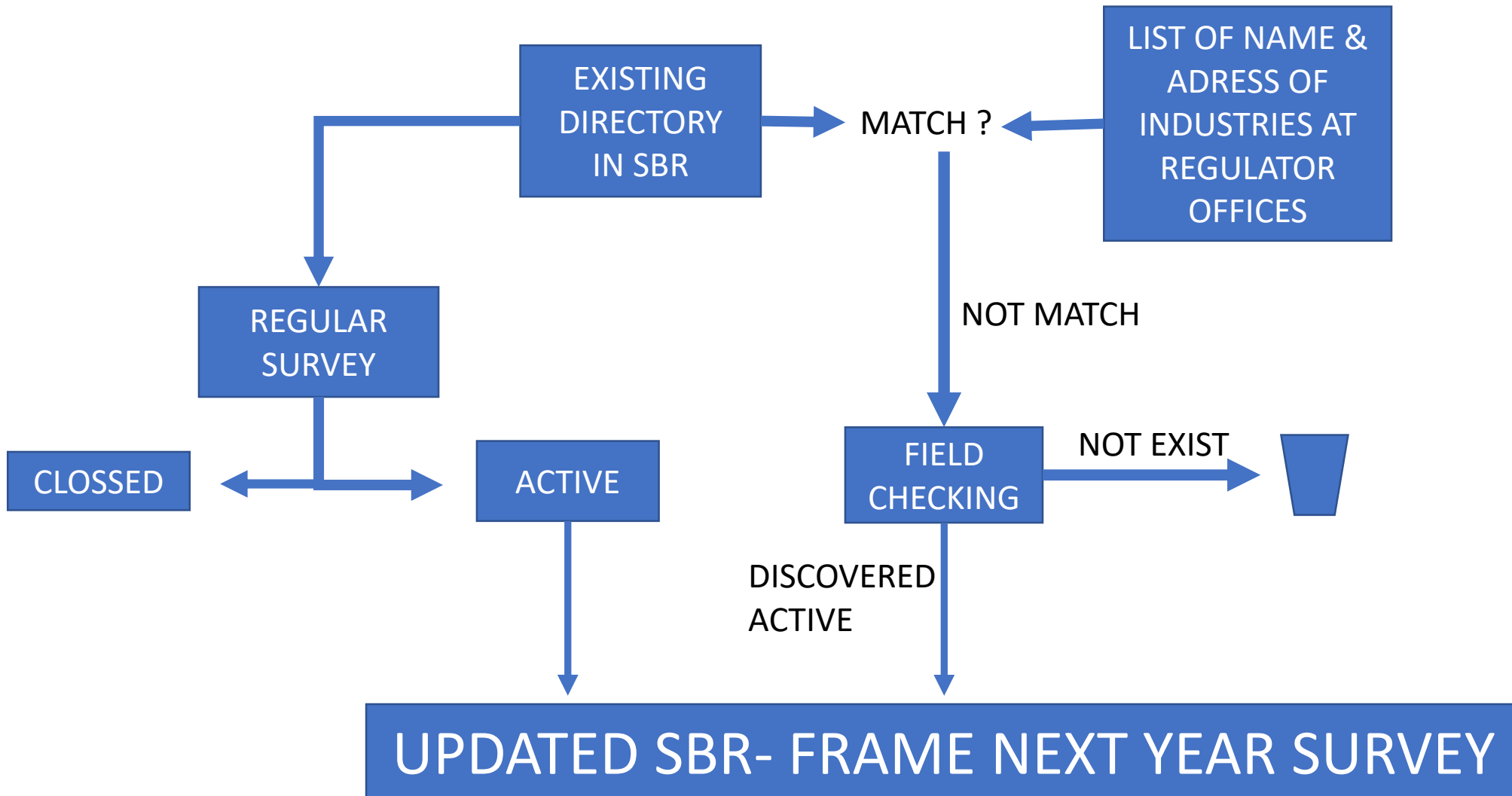
TYPE OF TRIP	GOOD & SERVICE PROVIDER	EXPENDITURE OF
DOMESTIC	NON-RESIDENT	OUTBOUND IF ON LEG TRIP
	RESIDENT	DOMESTIC
OUTBOUND	NON RESIDENT	OUTBOUND
	RESIDENT	DOMESTIC
INBOUND	NON RESIDENT	
	RESIDENT	INBOUND

SUPPLY PERSPECTIVE

MAINTAIN STATISTICAL BUSINESS REGISTER



UPDATING DIRECTORY TOURISM INDUSTRIES



FIELD CHECKING

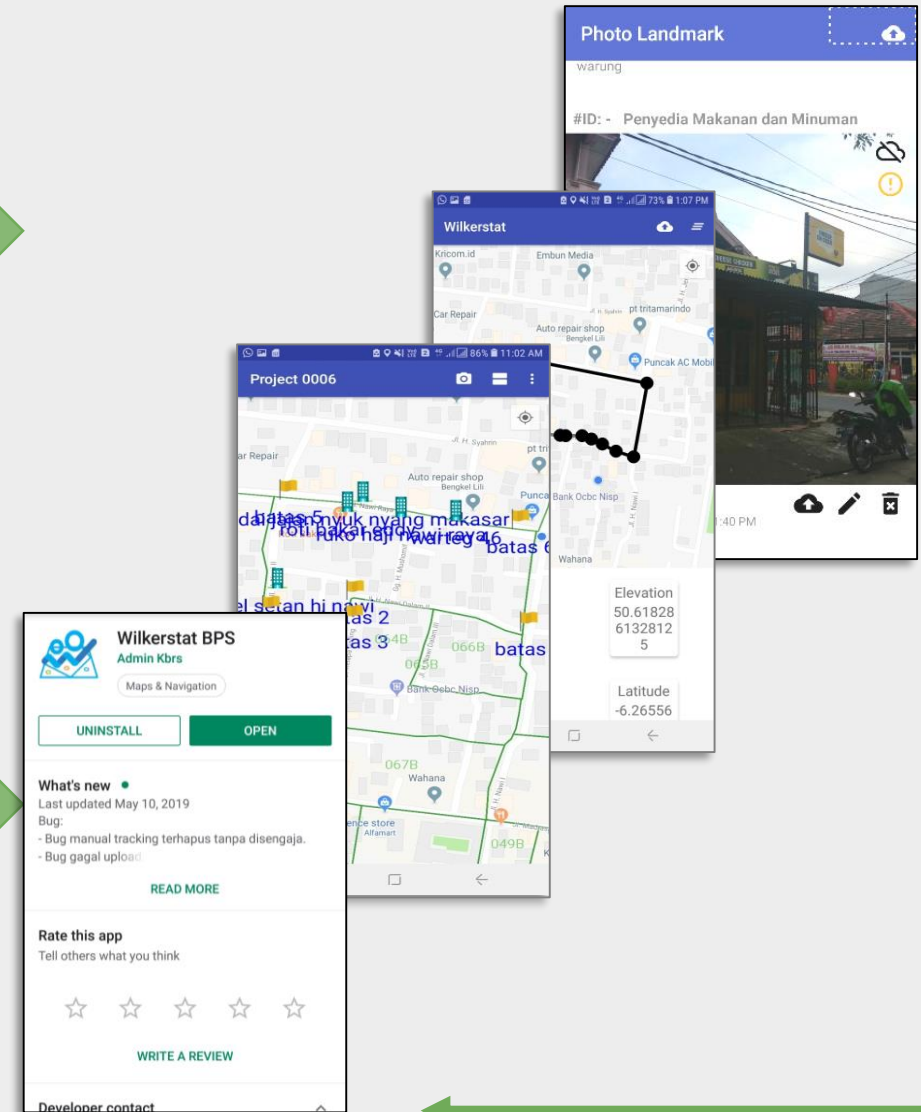
Field Checking candidate of new establishment using application named WILKERSTAT.



WILKERSTAT Application is designed to handy field work such as identification working area, Geotagging dan Tracking



Data FIELD



TOURISM INDUSTRY CATAGORY

Source: IRTS 2008



Consumption Product

- Accommodation services for visitors
- Food and beverage serving services
- Railway passenger transport services
- Road passenger transport services
- Water passenger transport services
- Air passenger transport services
- Transport equipment rental services
- Travel agencies and other reservation services
- Cultural services
- Sport and recreational services
- Country-specific tourism characteristic goods
- Country-specific tourism characteristic services

158 ISIC CODE (5 digit)



Activities

- Accommodation for visitors
- Food and beverage serving activities
- Railway passenger transport
- Road passenger transport
- Water passenger transport
- Air passenger transport
- Transport equipment rental
- Travel agencies and other reservation services activities
- Cultural activities
- Sport and recreational activities
- Retail trade of country-specific tourism characteristic goods
- Other country-specific tourism characteristic activities

STATISTICAL UNIT AND SURVEY DESIGN

- Statistical UNIT
 - Establishment
 - Enterprise
- SAMPLING
 - Complete
 - Sample
- MONTHLY → HOTEL OCUPANCY
- ANUAL

SURVEY

- MONTHLY → HOTEL OCUPANCY
- ANUAL
 - COMPANY PROFILE
 - EMPLOYMENT
 - COMPENSATION OF EMPLOYEES
 - INTERMEDIATE INPUT
 - OUTPUT
 - CAPITAL FORMATION

COMPANY PROFILE

- Formal Name
- Commercial Name
- Administrative Location
- Address
- Phone Number,
- e-mail
- Web site, face book, Instagram, other social media
- Specific to the particular tourism industry
 - Rooms, bed places (room or bed), occupancy rates, etc.,

EMPLOYMENT

- According to 2008 SNA, (para.19.20): Employees are persons who, by agreement, work for a resident institutional unit and receive remuneration for their labour.
- **The relationship of employer to employee exists** when there is an agreement, which may be formal or informal, between the employer and a person, normally entered into voluntarily by both parties, whereby the person works for the employer in return for remuneration in cash or in kind.

DATA COLECTED:

1. Education, Professional Certificate
2. Worker Status: Permanent, Temporary, Training
3. Gender
4. Occupation: Manager, Clerk, Security, Driver, ect
5. Compensation of Employee

VALUE ADDED

- OUTPUT
- INTERMEDIATE INPUT
- CAPITAL FORMATION

COLLECTING DATA

- SELF FILLED
 - CAWI→SEND LINK TO RESPONDENTS
 - PAPI

DASHBOARD MONITORING SURVEY

- MONITORING PROGRESS
- INTERACTIVE SUPERVISING

BIG DATA AS INSIGHT

DASHBOARD DATA PERHOTELAN NASIONAL

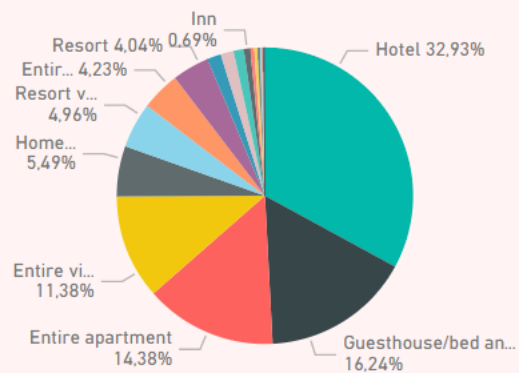
Klasifikasi Hotel

All

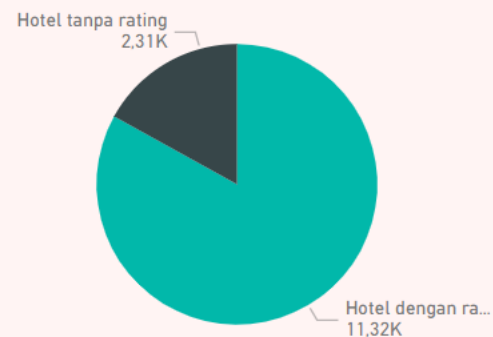
Tanggal

01/01/2020 31/05/2022

Jumlah Akomodasi Menurut Tipe



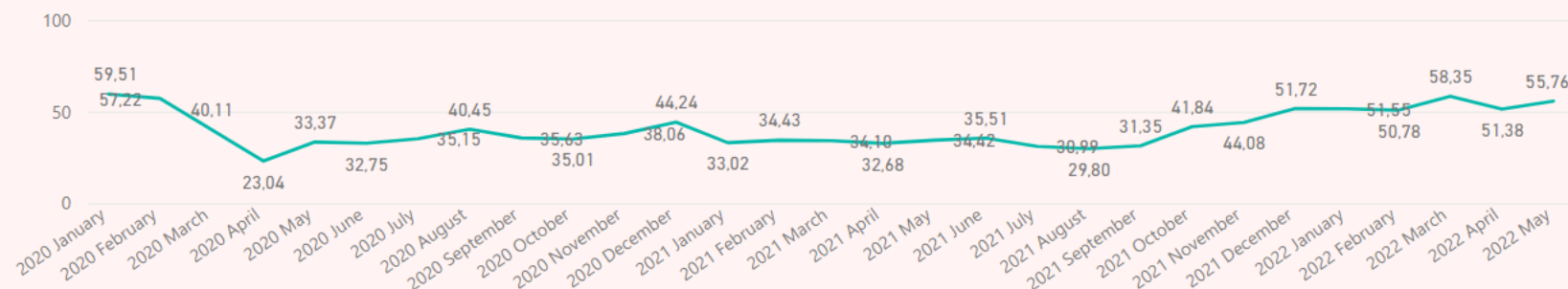
Jumlah Hotel Menurut Klasifikasi



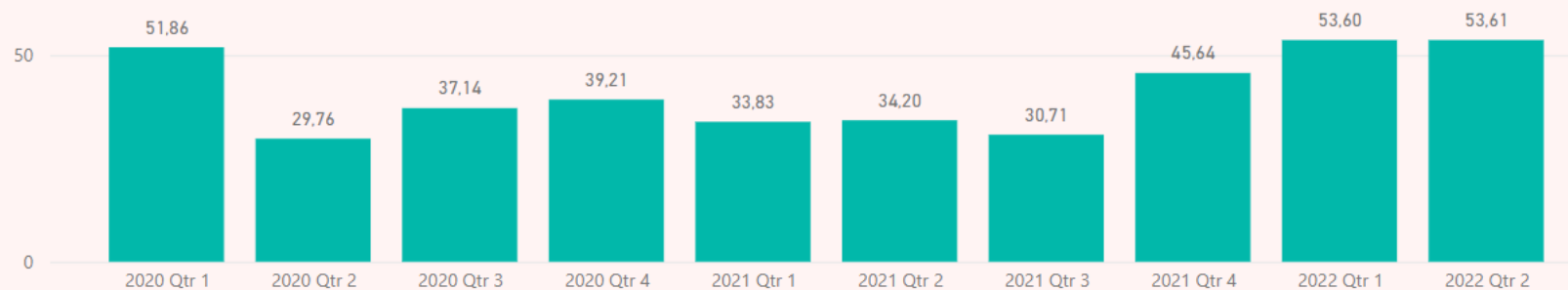
Tingkat Penghunian Kamar (TPK) Hotel Harian



Tingkat Penghunian Kamar (TPK) Hotel Bulanan



Tingkat Penghunian Kamar (TPK) Hotel Triwulanan

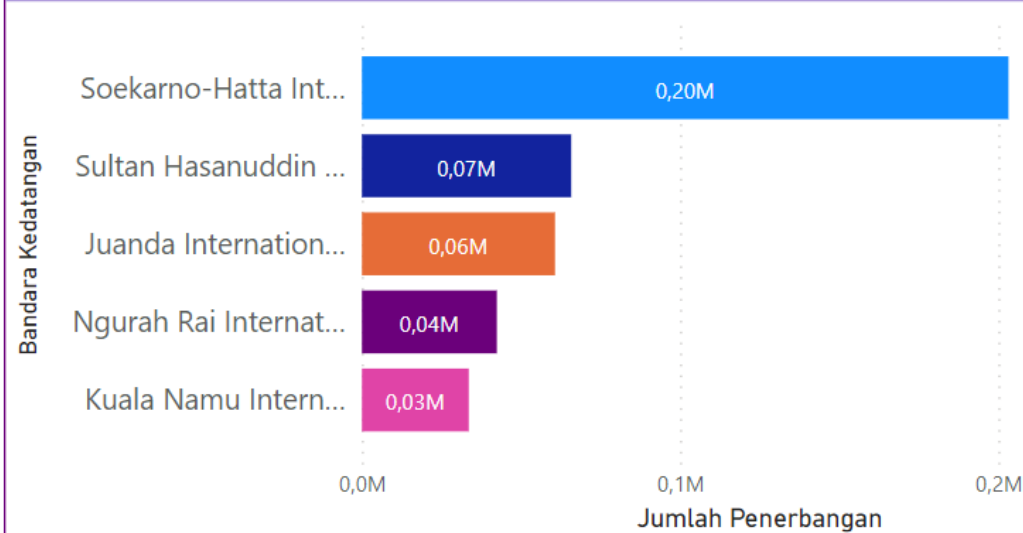


ARRIVAL INTERNATIONAL FLIGHT

Dashboard Kedatangan

405481
Penerbangan

Jumlah Penerbangan Menurut Kota Asal Pesawat



Bandara Kedatangan

All

Tipe Penerbangan

All

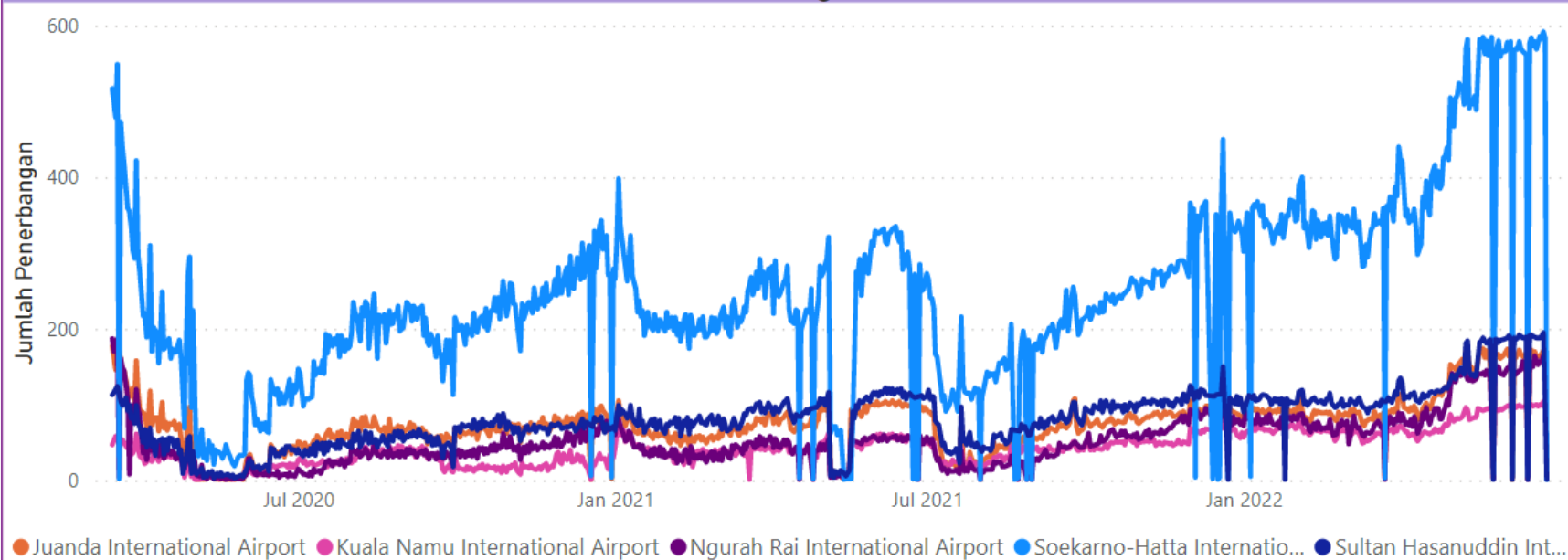
Tanggal Kedatangan

All

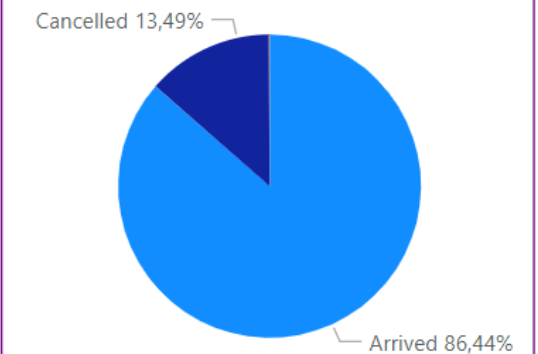
Status Penerbangan

All

Jumlah Keberangkatan Harian

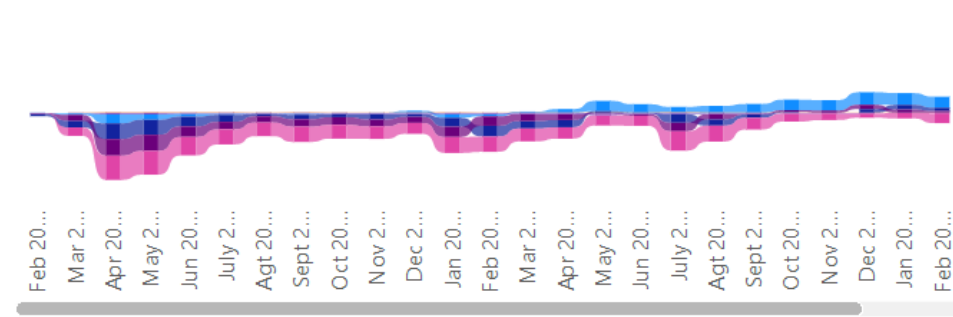


Jumlah Penerbangan menurut Status



GOOGLE MOBILITY DASHBOARD

● Groceries & Phar...
 ● Parks
 ● Residential
 ● Retail & Recreat...
 ● Transit Station
 ● Workplaces



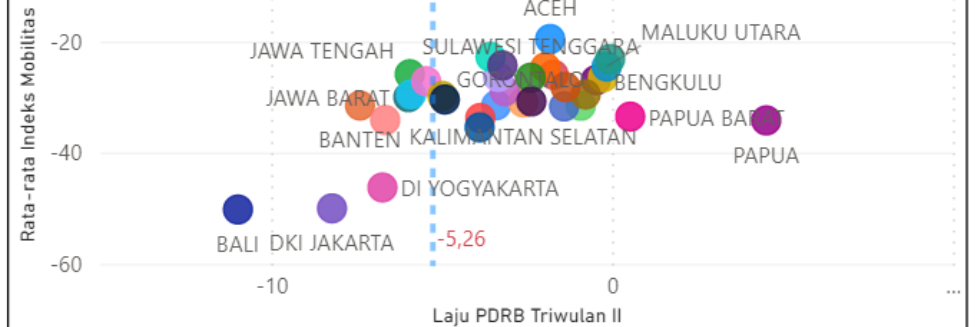
DATE

15/02/2020

31/05/2022

REGION

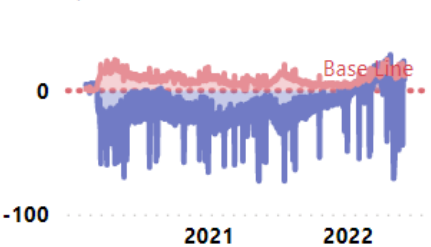
Nasional



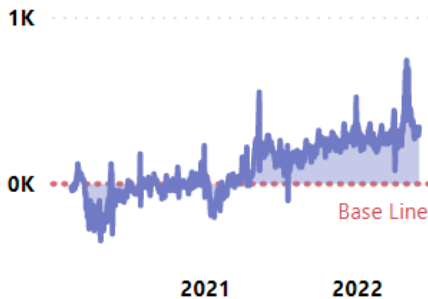
RESIDENTIAL VS WORKPLACES



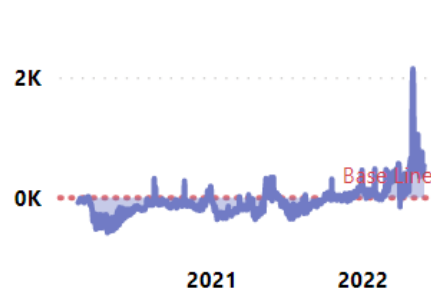
● Workplaces
 ● Residential



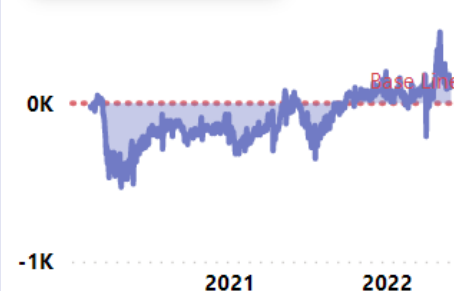
GROCERIES & PHARMACY



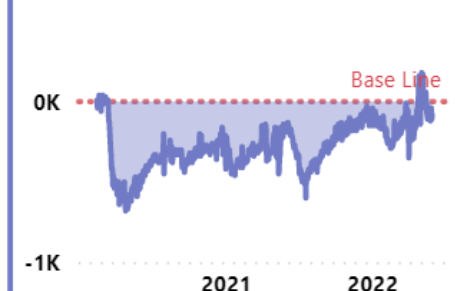
PARKS



RETAIL & RECREATION

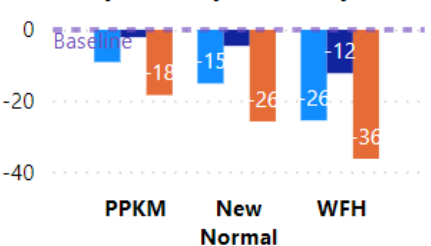


TRANSIT STATION



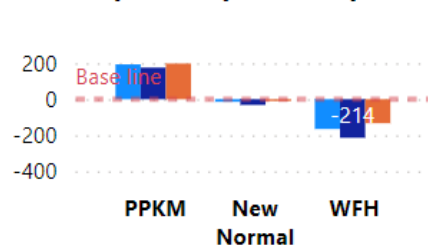
Workplaces

● Saturday
 ● Sunday
 ● Weekdays



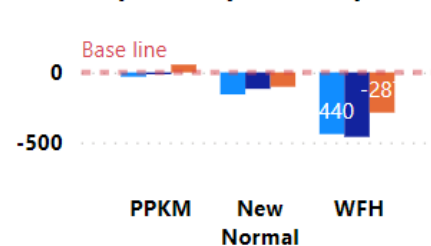
Groceries & Pharmacy

● Saturday
 ● Sunday
 ● Weekdays



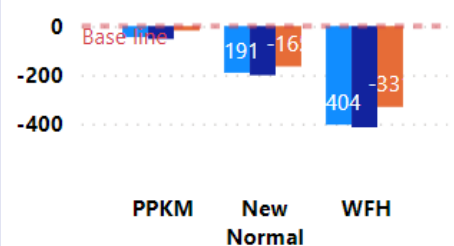
Parks

● Saturday
 ● Sunday
 ● Weekdays



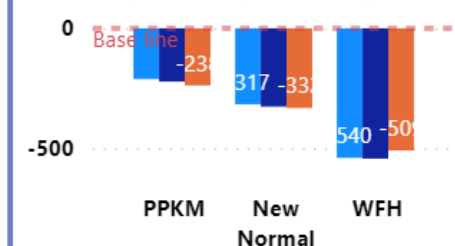
Retail & Recreation

● Saturday
 ● Sunday
 ● Weekdays



Transit Station

● Saturday
 ● Sunday
 ● Weekdays





BADAN PUSAT STATISTIK

ST2023
SENSUS PERTANIAN

Terima Kasih!

