

ILLICIT CIGARETTES STUDY (ICS) IN MALAYSIA MAY 2021 REPORT

Report Commissioned by CMTM member companies

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ILLEGAL CIGARETTES CRITERIA FOR VERIFICATION

Packs with at least one (1) of the following features:

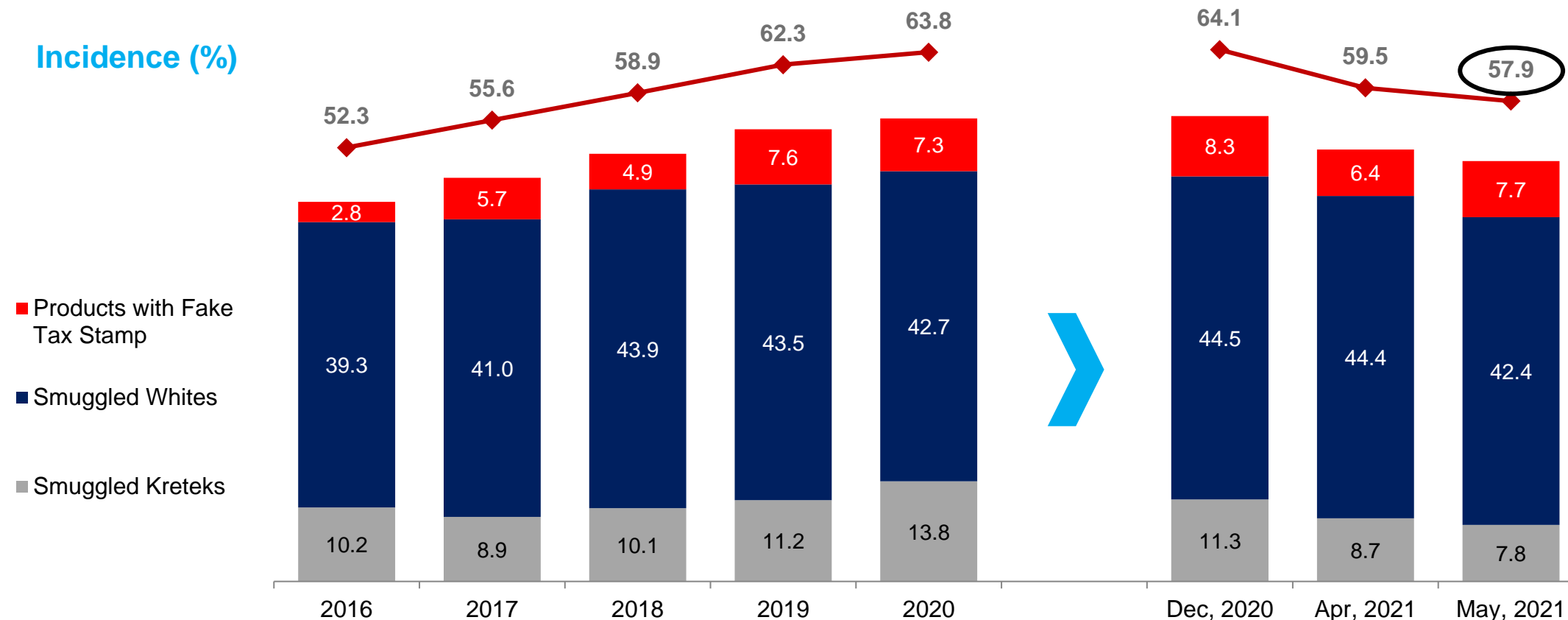
1. Absence of Registered Importers
2. Unregistered Importers*
3. Absence of Registered Manufacturers
4. Unregistered Manufacturers*
5. Packs with counterfeit (fake) Malaysian tax stamp**
6. Packs without Malaysian tax stamp
7. Packs with non-Malaysian tax stamp
8. Unregistered Brand*
9. Non Compliance to Ministry of Health's Control of Tobacco Product Regulations (CTPR) 2004
 - I. Absence or Non Compliance of Pictorial Health Warning Requirements
 - I. Pack Size other than 20 sticks
 - II. Absence or Non Compliance of mandated labeling requirements

* Not registered with the Royal Malaysian Customs

** Verified by Lembah Sari Sdn Bhd (LSSB) – Government appointed sole vendor for tax stamp

ILLEGAL CIGARETTES INCIDENCE AT NATIONAL LEVEL:

Overall decline by 1.6 ppt. vs. Apr, 2021



Volume (Billions sticks)

Illegal Cigarettes	10.1	11.1	12.0	12.2	11.7	1.1	0.9	1.0
Estimated Total industry	19.3	20.0	20.4	19.5	18.4	1.8	1.5	1.8
<i>Incidence</i>	<i>52.3%</i>	<i>55.6%</i>	<i>58.9%</i>	<i>62.3%</i>	<i>63.8%</i>	<i>64.1%</i>	<i>59.5%</i>	<i>57.9%</i>

TOP 10 ILLEGAL CIGARETTES BRANDS*

They account for approximately 78% of illegal cigarettes volume

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	John	11.4	10.7	13.9
2.	Era	10.0	9.4	3.7
3.	U2	6.3	6.4	9.0
4.	Gudang Garam	4.8	4.7	6.4
5.	Canyon	3.5	3.8	4.7
6.	Saat	2.8	5.2	4.0
7.	LA	2.1	2.7	4.8
8.	Parkway	1.4	2.2	0.5
9.	D&J	1.4	1.1	0.4
10.	Luffman	1.4	1.8	2.3
Total 10 Total		45.1	48.0	49.7
Other Illegal		12.8	11.5	14.1
Total Illegal %		57.9	59.5	63.8

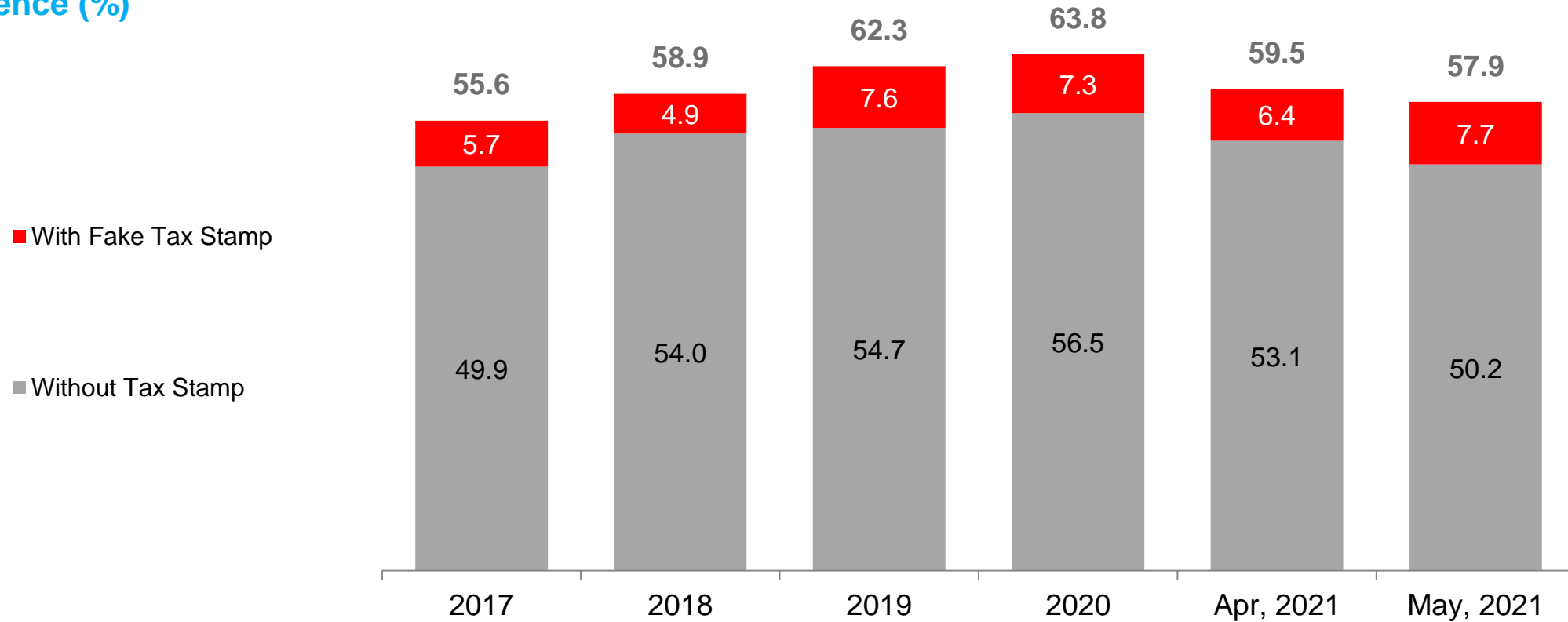


*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TAX STAMP BREAKDOWN OF ILLEGAL CIGARETTES:

87% of illegal cigarettes are without tax stamps while remaining 13% are with fake tax stamps

Incidence (%)



FAKE TAX STAMP BREAKDOWN BY MANUFACTURERS / IMPORTERS:

Illegal cigarettes with fake tax stamp for brands imported by Azion Trade and VTI Marketing have declined in May

Global Tobacco Manufacturer :

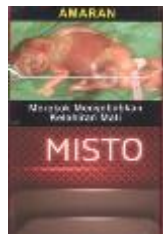


Incidence (%) 0.2 0.8 0.4



Incidence (%) 0.2 0.7 0.1

Azion Trade :

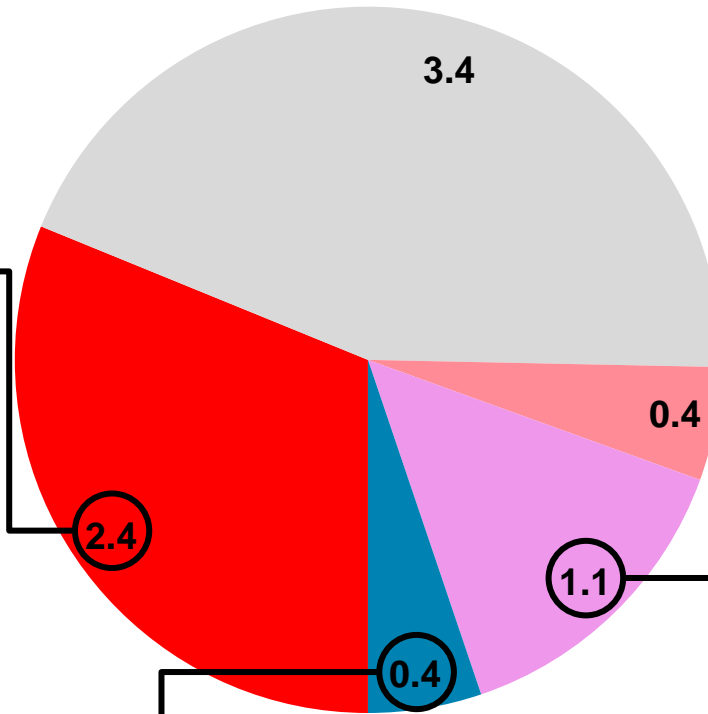


Incidence (%) 0.4

Legasi Jutaan Venture :



Incidence (%) 1.0 0.1



- Global Tobacco Manufacturers
- Five Sun Trading
- VTI Marketing
- Legasi Jutaan Venture
- Azion Trade
- Zeno DFSC
- P.U Gemilang
- Urus Cepat
- Bintang Ori Mkt
- LY Ocean Management

0.0%** Incidence is less than 0.1%; figure is too small to feature.

FAKE TAX STAMP BREAKDOWN BY MANUFACTURERS / IMPORTERS:

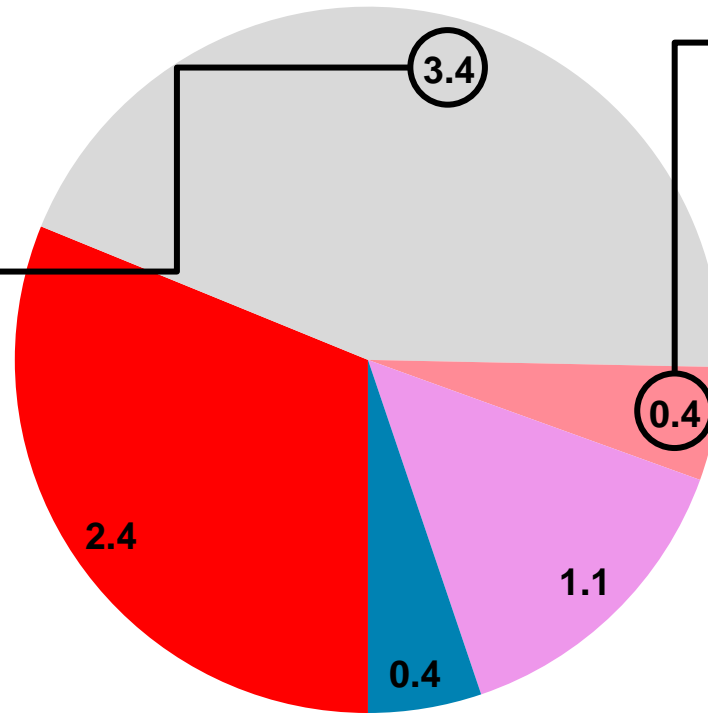
Illegal cigarettes with fake tax stamp for brands imported by Azion Trade and VTI Marketing have declined in May

Zeno DFSC :

Incidence (%)	0.0**	0.9	0.5
Incidence (%)	0.7	0.2	

VTI Marketing :

Incidence (%)	0.4



- Global Tobacco Manufacturers
- Zeno DFSC
- Five Sun Trading
- P.U Gemilang
- VTI Marketing
- Urus Cepat
- Legasi Jutawan Venture
- Bintang Ori Mkt
- Azion Trade
- LY Ocean Management

0.0%** Incidence is less than 0.1%; figure is too small to feature.

ILLEGAL CIGARETTES INCIDENCE BY STATES:

5 States recording an increase vs. Apr 2021

	A				B				A minus B				Volume Contribution
	May, 2021				Apr, 2021				Variance (May'2021 vs. Apr'2021)				%
	Total Illegal	Fake Tax Stamp	Smuggled Whites	Smuggled Kretek	Total Illegal	Fake Tax Stamp	Smuggled Whites	Smuggled Kretek	Total Illegal	Fake Tax Stamp	Smuggled Whites	Smuggled Kretek	
Sabah	87.5	0.0	79.2	8.3	85.4	0.1	84.7	0.6	+2.1	-0.1	-5.5	+7.7	16%
Sarawak	83.4	0.1	76.9	6.4	86.0	0.0	78.7	7.3	-2.6	+0.1	-1.8	-0.9	11%
Pahang	72.7	10.7	54.6	7.4	70.7	7.6	51.1	12.0	+2.0	+3.1	+3.5	-4.6	9%
Terengganu	67.4	11.0	53.4	3.0	71.2	2.9	63.4	4.9	-3.8	+8.1	-10.0	-1.9	3%
Kelantan	66.9	4.9	57.5	4.5	77.7	0.3	73.5	3.9	-10.8	+4.6	-16.0	+0.6	4%
Penang	55.6	11.1	38.6	5.9	52.5	9.2	34.9	8.4	+3.1	+1.9	+3.7	-2.5	7%
Kedah	55.3	5.0	44.5	5.8	57.3	6.9	43.0	7.4	-2.0	-1.9	+1.5	-1.6	4%
Perlis	55.0	2.3	44.7	8.0	49.4	2.4	40.7	6.3	+5.6	-0.1	+4.0	+1.7	1%
Selangor	51.5	6.6	32.4	12.5	52.6	3.9	33.0	15.7	-1.1	+2.7	-0.6	-3.2	21%
WP KL	49.2	4.8	32.3	12.1	54.6	2.5	36.9	15.2	-5.4	+2.3	-4.6	-3.1	7%
Melaka	44.7	20.6	21.7	2.4	52.6	22.8	28.3	1.5	-7.9	-2.2	-6.6	+0.9	2%
Johor	41.7	12.8	23.7	5.2	43.2	13.3	23.7	6.2	-1.5	-0.5	0.0	-1.0	8%
N.Sembilan	35.0	11.7	19.6	3.7	33.4	12.8	16.0	4.6	+1.6	-1.1	+3.6	-0.9	2%
Perak	33.2	18.7	13.3	1.2	35.9	21.0	13.3	1.6	-2.7	-2.3	0.0	-0.4	3%
National Incidence	57.9	7.7	42.4	7.8	59.5	6.4	44.4	8.7	-1.6	+1.3	-2.0	-0.9	100%

ILLEGAL CIGARETTES INCIDENCE BY STATES:

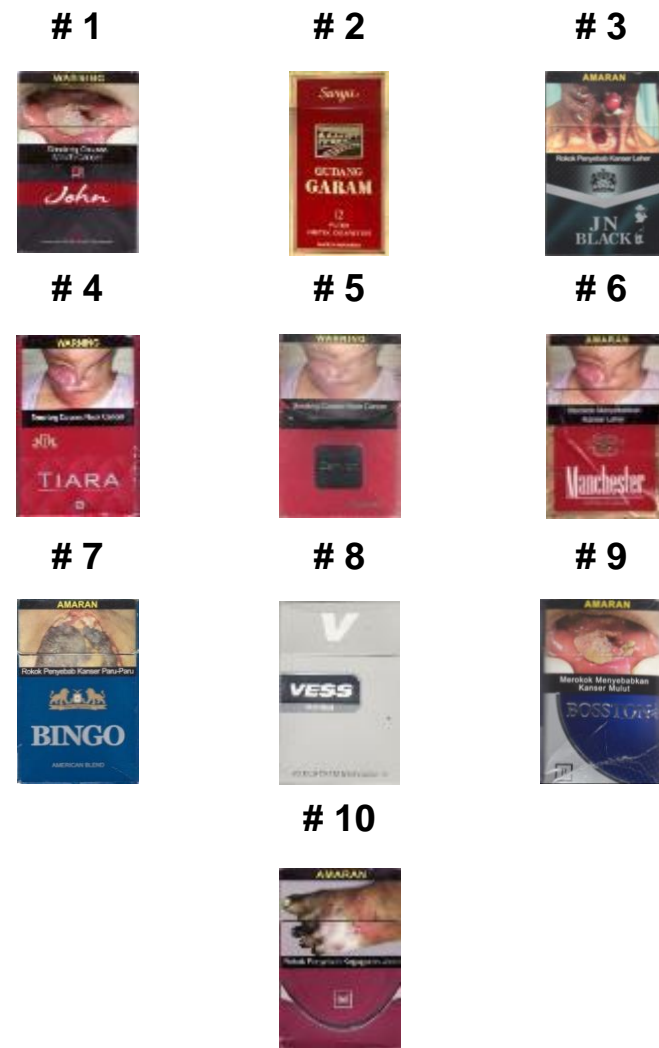
4 States recording an increase vs. 2020

	A				B				A minus B				Volume Contribution
	May, 2021				2020				Variance (May'2021 vs. 2020)				%
	Total Illegal	Fake Tax Stamp	Smuggled Whites	Smuggled Kretek	Total Illegal	Fake Tax Stamp	Smuggled Whites	Smuggled Kretek	Total Illegal	Fake Tax Stamp	Smuggled Whites	Smuggled Kretek	
Sabah	87.5	0.0	79.2	8.3	86.6	0.0	80.8	5.8	+0.9	0.0	-1.6	+2.5	16%
Sarawak	83.4	0.1	76.9	6.4	82.2	0.0	70.8	11.4	+1.2	+0.1	+6.1	-5.0	11%
Pahang	72.7	10.7	54.6	7.4	76.8	4.3	51.9	20.6	-4.1	+6.4	+2.7	-13.2	9%
Terengganu	67.4	11.0	53.4	3.0	78.0	2.4	70.7	4.9	-10.6	+8.6	-17.3	-1.9	3%
Kelantan	66.9	4.9	57.5	4.5	72.9	2.1	67.0	3.8	-6.0	+2.8	-9.5	0.7	4%
Penang	55.6	11.1	38.6	5.9	54.4	12.5	34.5	7.4	+1.2	-1.4	+4.1	-1.5	7%
Kedah	55.3	5.0	44.5	5.8	67.7	14.9	45.2	7.6	-12.4	-9.9	-0.7	-1.8	4%
Perlis	55.0	2.3	44.7	8.0	54.9	4.1	39.8	11.0	+0.1	-1.8	+4.9	-3.0	1%
Selangor	51.5	6.6	32.4	12.5	64.1	5.3	37.9	20.9	-12.6	+1.3	-5.5	-8.4	21%
WP KL	49.2	4.8	32.3	12.1	66.8	3.0	42.1	21.7	-17.6	+1.8	-9.8	-9.6	7%
Melaka	44.7	20.6	21.7	2.4	55.0	20.8	30.4	3.8	-10.3	-0.2	-8.7	-1.4	2%
Johor	41.7	12.8	23.7	5.2	46.0	13.5	27.7	4.8	-4.3	-0.7	-4.0	+0.4	8%
N.Sembilan	35.0	11.7	19.6	3.7	47.2	13.7	25.9	7.6	-12.2	-2.0	-6.3	-3.9	2%
Perak	33.2	18.7	13.3	1.2	39.2	19.0	18.4	1.8	-6.0	-0.3	-5.1	-0.6	3%
National Incidence	57.9	7.7	42.4	7.8	63.8	7.3	42.7	13.8	-5.9	+0.4	-0.3	-6.0	100%

TOP 10 ILLEGAL CIGARETTES BRANDS FOR PERLIS

Volume contribution to National = 1%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	John	38.1	36.4	36.7
2.	Gudang Garam	8.0	6.3	11.0
3.	JN	2.2	-	
4.	Tiara	1.4	1.4	0.2
5.	Canyon	1.1	0.7	0.9
6.	Manchester	1.1	0.2	0.4
7.	Bingo	0.5	-	0.0**
8.	Vess	0.5	1.0	-
9.	Bosston*	0.4	-	-
10.	M*	0.4	0.1	2.5
Total 10 Total		53.7	46.1	51.7
<i>Other Illegal</i>		1.3	3.3	3.2
Total Illegal %		55.0	49.4	54.9

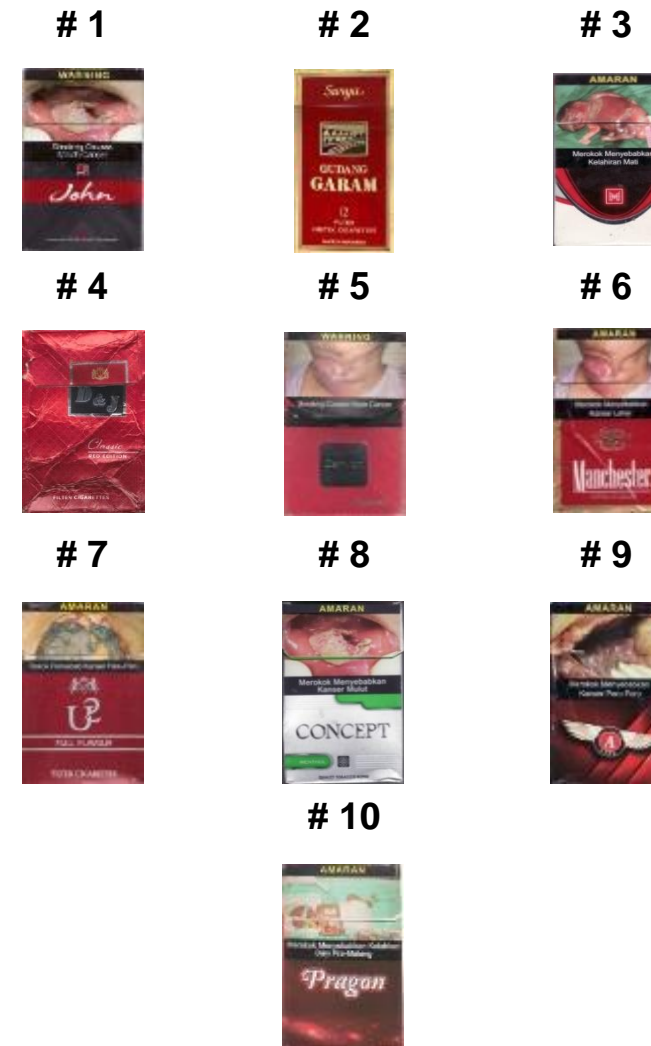


*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise
 0.0%** Incidence is less than 0.1%; figure is too small to feature.

TOP 10 ILLEGAL CIGARETTES BRANDS FOR KEDAH

Volume contribution to National = 4%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	John	40.9	39.3	38.6
2.	Gudang Garam	5.8	7.4	7.2
3.	M*	1.9	3.7	6.8
4.	D&J	1.6	1.8	2.3
5.	Canyon	0.7	0.3	0.7
6.	Manchester*	0.7	0.4	0.7
7.	U2	0.6	0.5	1.0
8.	Concept*	0.6	0.4	0.8
9.	A380*	0.5	1.2	2.3
10.	Pragon*	0.3	0.4	0.7
Total 10 Total		53.6	55.4	61.1
Other Illegal		1.7	1.9	6.6
Total Illegal %		55.3	57.3	67.7



*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TOP 10 ILLEGAL CIGARETTES BRANDS FOR PENANG

Volume contribution to National = 7%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	John	30.1	23.4	22.6
2.	Gudang Garam	5.5	8.0	6.4
3.	D&J	2.6	2.7	0.4
4.	Concept*	2.0	0.9	0.5
5.	Pragon*	1.8	0.9	1.4
6.	Manchester*	1.6	2.7	2.2
7.	A380*	1.4	0.9	3.2
8.	Tex	1.0	1.4	0.8
9.	Promax*	0.8	0.5	0.9
10.	M*	0.8	1.4	2.4
Total 10 Total		47.6	42.8	40.8
<i>Other Illegal</i>		8.0	9.7	13.6
Total Illegal %		55.6	52.5	54.4

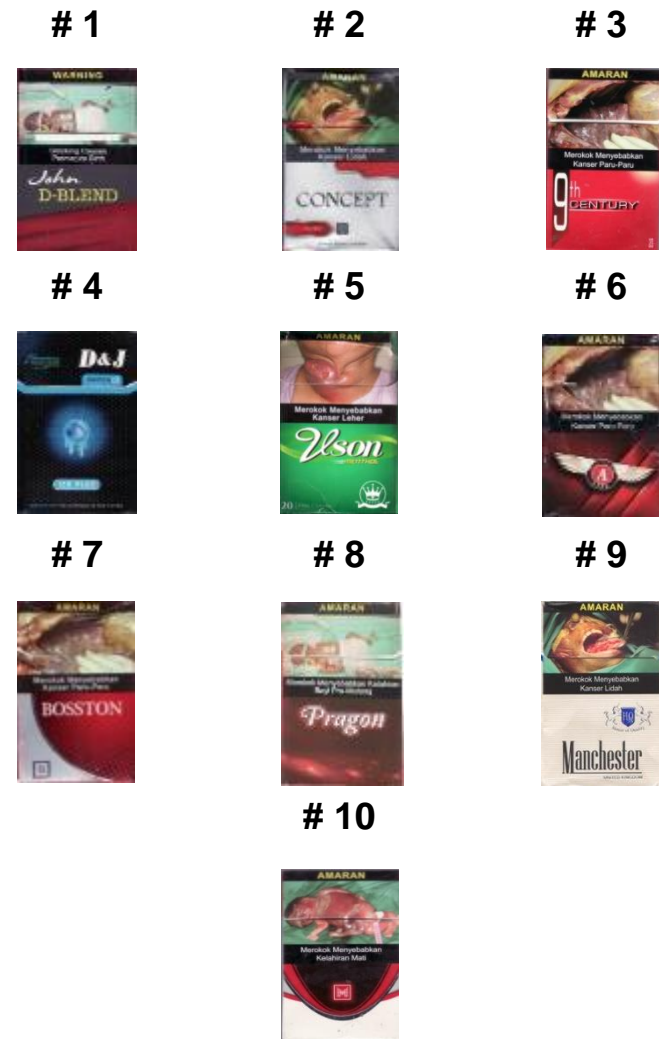


*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TOP 10 ILLEGAL CIGARETTES BRANDS FOR PERAK

Volume contribution to National = 3%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	John	7.8	7.8	8.7
2.	Concept*	4.1	3.3	3.6
3.	9th Century*	3.4	4.7	2.3
4.	D&J	2.8	3.3	2.7
5.	Vson*	1.8	2.4	1.6
6.	A380*	1.6	2.4	2.7
7.	Bosston*	1.5	1.5	1.8
8.	Pragon*	1.3	2.7	2.1
9.	Manchester*	1.2	0.7	1.3
10.	M*	1.2	0.3	0.4
Total 10 Total		26.7	29.1	27.2
<i>Other Illegal</i>		6.5	6.8	12.0
Total Illegal %		33.2	35.9	39.2

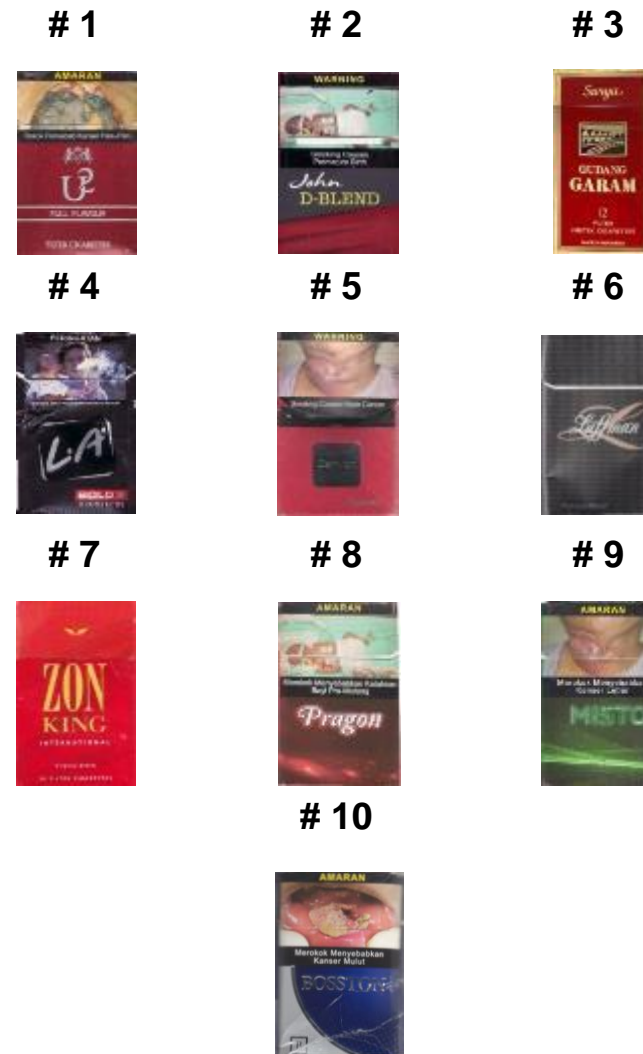


*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TOP 10 ILLEGAL CIGARETTES BRANDS FOR SELANGOR

Volume contribution to National = 21%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	U2	11.6	12.1	12.5
2.	John	9.1	7.9	12.7
3.	Gudang Garam	6.7	7.9	9.2
4.	L.A.	5.0	6.4	8.9
5.	Canyon	3.8	4.8	4.8
6.	Luffman	3.4	4.8	4.0
7.	Zon King	2.2	1.6	1.4
8.	Pragon*	1.9	0.4	0.5
9.	Misto*	1.5	0.5	0.6
10.	Bosston*	1.4	0.7	0.7
Total 10 Total		46.6	47.1	55.3
<i>Other Illegal</i>		<i>4.9</i>	<i>5.5</i>	<i>8.8</i>
Total Illegal %		51.5	52.6	64.1

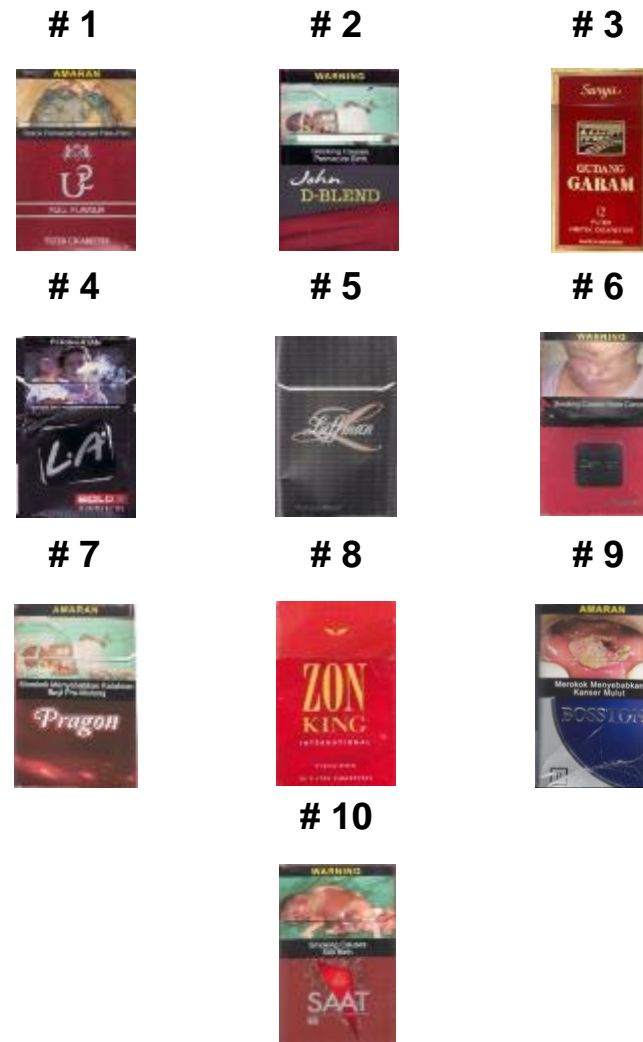


*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TOP 10 ILLEGAL CIGARETTES BRANDS FOR WP KL

Volume contribution to National = 7%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	U2	11.4	13.6	14.8
2.	John	9.6	10.6	14.1
3.	Gudang Garam	6.4	6.4	8.7
4.	L.A.	5.0	7.5	10.3
5.	Luffman	4.6	5.3	4.6
6.	Canyon	3.8	4.9	4.4
7.	Pragon*	1.9	0.3	0.4
8.	Zon King	1.5	1.7	1.7
9.	Bosston*	1.4	0.6	0.6
10.	Saat	0.7	0.3	0.7
Total 10 Total		46.3	51.2	60.3
<i>Other Illegal</i>		2.9	3.4	6.5
Total Illegal %		49.2	54.6	66.8



*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TOP 10 ILLEGAL CIGARETTES BRANDS FOR N.SEMBILAN

Volume contribution to National = 2%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	Canyon	9.4	4.9	6.8
2.	U2	5.2	5.8	7.0
3.	Misto*	5.1	4.6	3.2
4.	Gudang Garam	3.2	3.8	6.4
5.	John	2.4	1.8	8.2
6.	A380*	2.3	1.6	4.3
7.	Concept*	1.2	1.7	0.5
8.	Manchester*	1.1	2.0	0.7
9.	League	1.1	2.1	0.6
10.	D&J	0.8	0.2	0.0**
Total 10 Total		31.8	28.5	37.7
<i>Other Illegal</i>		3.2	4.9	9.5
Total Illegal %		35.0	33.4	47.2



*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

0.0%** Incidence is less than 0.1%; figure is too small to feature.

TOP 10 ILLEGAL CIGARETTES BRANDS FOR MELAKA

Volume contribution to National = 2%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	Canyon	11.6	12.5	9.0
2.	John	8.4	12.6	18.9
3.	Promax*	4.5	4.4	4.2
4.	A380*	3.9	0.4	3.3
5.	Pragon*	2.7	2.9	0.9
6.	Bosston*	2.4	4.0	5.0
7.	Misto*	2.1	5.3	1.7
8.	SOHO*	1.9	0.4	0.5
9.	Gudang Garam	1.6	0.9	2.3
10.	9th Century	1.6	0.8	1.9
Total 10 Total		40.7	44.2	47.7
<i>Other Illegal</i>		<i>4.0</i>	<i>8.4</i>	<i>7.3</i>
Total Illegal %		44.7	52.6	55.0

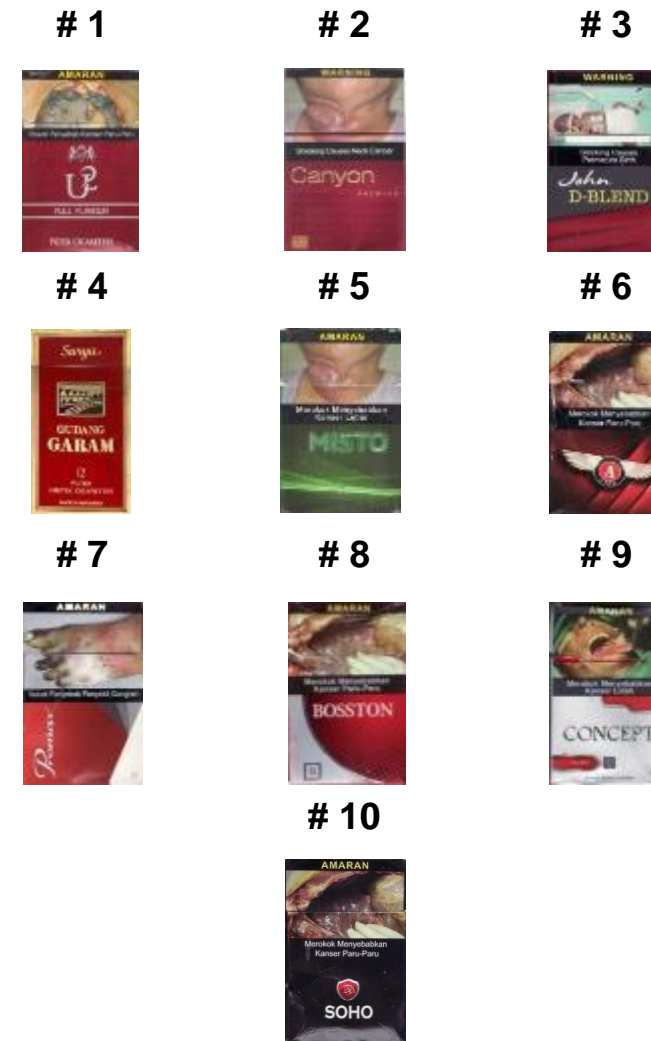


*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TOP 10 ILLEGAL CIGARETTES BRANDS FOR JOHOR

Volume contribution to National = 8%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	U2	7.9	6.8	7.6
2.	Canyon	7.7	11.3	8.9
3.	John	6.9	4.3	9.1
4.	Gudang Garam	3.0	3.7	3.4
5.	Misto*	2.3	3.8	2.3
6.	A380*	2.2	0.5	1.5
7.	Promax*	1.6	1.5	1.6
8.	Bosston*	1.5	2.0	2.6
9.	Concept*	1.2	1.0	1.5
10.	SOHO*	0.9	0.3	0.3
Total 10 Total		35.2	35.2	38.8
<i>Other Illegal</i>		6.5	8.0	7.2
Total Illegal %		41.7	43.2	46.0

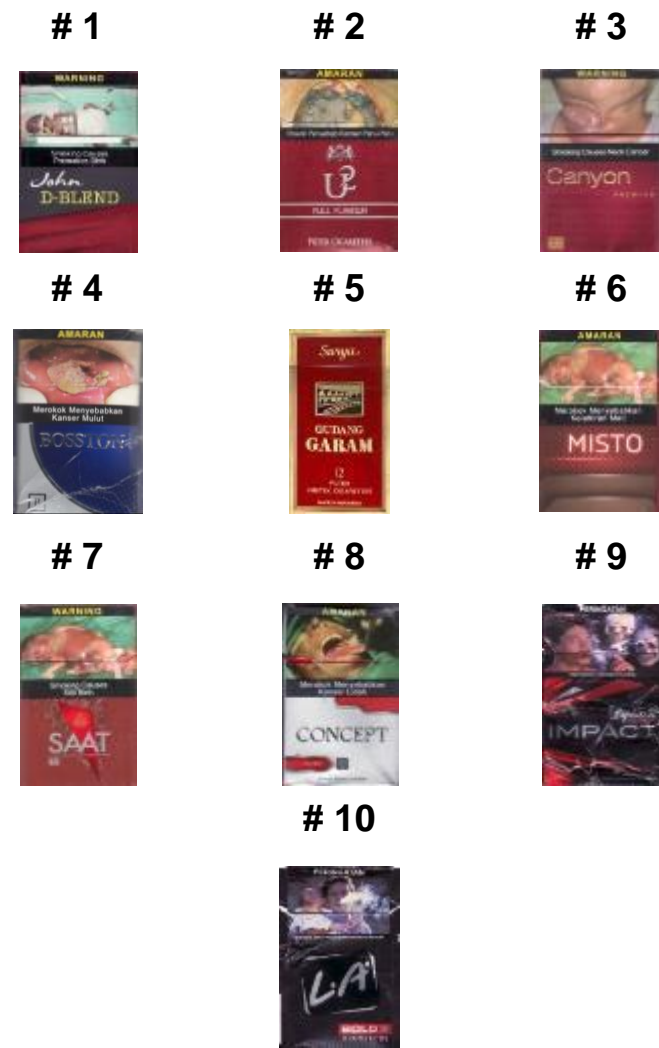


*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TOP 10 ILLEGAL CIGARETTES BRANDS FOR PAHANG

Volume contribution to National = 9%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	John	25.3	25.6	20.9
2.	U2	17.0	16.9	19.7
3.	Canyon	8.8	5.8	8.5
4.	Bosston*	5.4	3.6	2.1
5.	Gudang Garam	4.4	6.2	7.3
6.	Misto*	1.4	0.4	0.3
7.	Saat	1.4	1.2	1.4
8.	Concept*	1.4	1.1	0.3
9.	Diplomat	1.2	4.3	9.2
10.	L.A.	1.1	0.5	0.5
Total 10 Total		67.4	65.6	70.2
<i>Other Illegal</i>		5.3	5.1	6.6
Total Illegal %		72.7	70.7	76.8



*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

TOP 10 ILLEGAL CIGARETTES BRANDS FOR TERENGGANU

Volume contribution to National = 3%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	Saat	23.0	27.3	27.3
2.	John	20.4	25.2	29.7
3.	Promax*	8.1	0.3	0.6
4.	U2	6.8	8.8	9.1
5.	Gudang Garam	2.9	4.5	4.0
6.	League	1.2	0.4	0.6
7.	Concept*	1.0	0.7	0.1
8.	Misto*	0.8	0.4	0.2
9.	A380*	0.4	0.9	0.8
10.	Canyon	0.4	0.4	2.3
Total 10 Total		65.0	68.9	74.7
Other Illegal		2.4	2.3	3.3
Total Illegal %		67.4	71.2	78.0

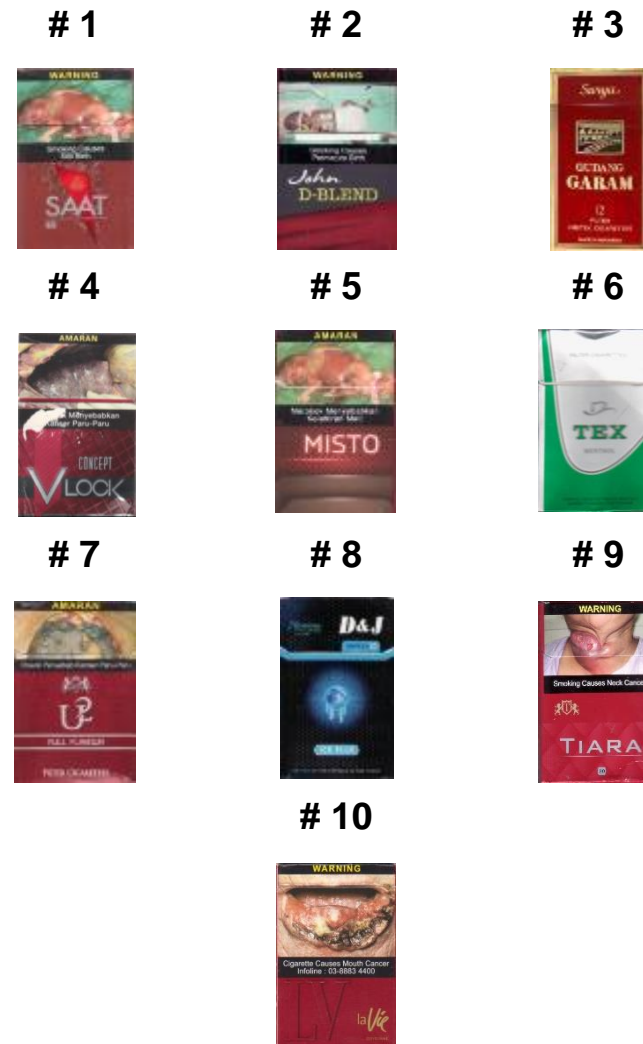


*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise
 0.0%** Incidence is less than 0.1%; figure is too small to feature.

TOP 10 ILLEGAL CIGARETTES BRANDS FOR KELANTAN

Volume contribution to National = 4%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	Saat	50.2	66.9	57.4
2.	John	5.3	4.4	7.1
3.	Gudang Garam	4.2	3.7	3.6
4.	Concept*	2.9	0.1	0.5
5.	Misto*	1.8	0.1	0.0**
6.	Tex	0.8	1.7	1.9
7.	U2	0.5	0.2	0.3
8.	D&J	0.4	-	0.0**
9.	Tiara	0.3	0.1	0.1
10.	L.V.	0.3	-	-
Total 10 Total		66.7	77.2	70.9
Other Illegal		0.2	0.5	2.0
Total Illegal %		66.9	77.7	72.9



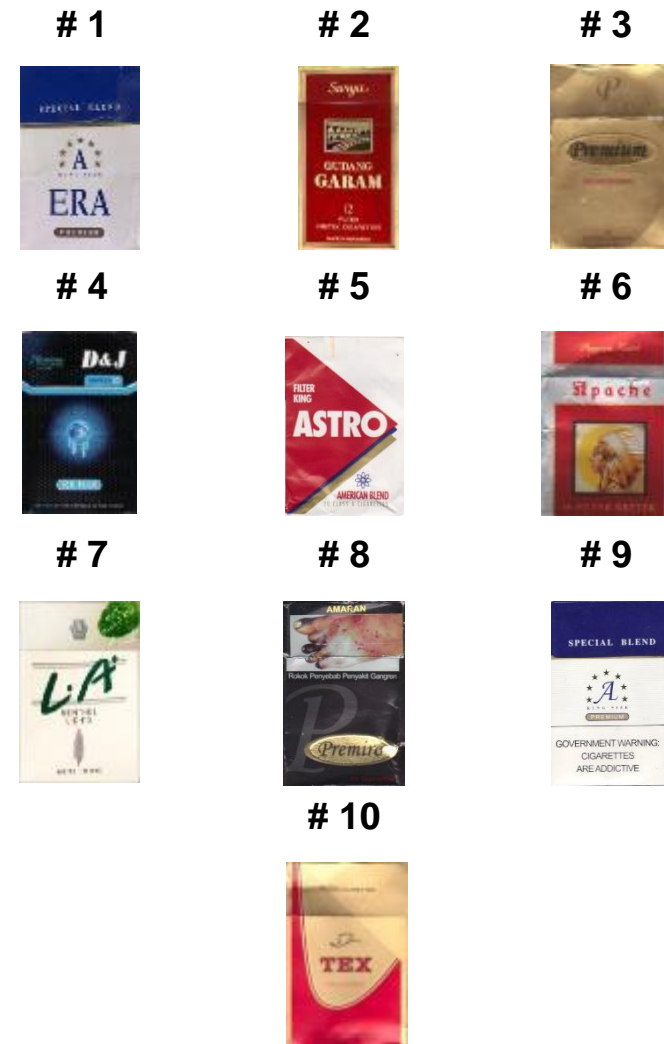
*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

0.0%** Incidence is less than 0.1%; figure is too small to feature.

TOP 10 ILLEGAL CIGARETTES BRANDS FOR SABAH

Volume contribution to National = 16%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	Era	69.7	74.7	52.3
2.	Gudang Garam	7.3	0.1	1.0
3.	Premium	6.1	5.8	24.6
4.	D&J	1.8	2.3	2.2
5.	Astro	0.9	-	0.0**
6.	Apache	0.4	0.3	3.7
7.	L.A.	0.4	0.1	0.9
8.	Premiro	0.4	0.6	-
9.	Ela	0.1	-	-
10.	Tex	0.1	-	0.0**
Total 10 Total		87.2	83.9	84.7
<i>Other Illegal</i>		<i>0.3</i>	<i>1.5</i>	<i>1.9</i>
Total Illegal %		87.5	85.4	86.6



*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise

0.0%** Incidence is less than 0.1%; figure is too small to feature.

TOP 10 ILLEGAL CIGARETTES BRANDS FOR SARAWAK

Volume contribution to National = 11%

	Illegal Brand	May, 2021	Apr, 2021	2020
		SOM (%)	SOM (%)	SOM (%)
1.	Era	30.0	32.7	29.1
2.	Parkway	18.0	24.7	19.2
3.	Rave	9.8	12.4	8.6
4.	D&J	7.6	3.8	4.0
5.	Premium	4.5	1.6	2.4
6.	L.A.	3.7	4.5	6.6
7.	Devon	2.9	0.3	0.6
8.	Gudang Garam	0.9	0.3	1.2
9.	S. Super	0.5	0.8	1.4
10.	Master Mild M2	0.5	1.1	0.8
Total 10 Total		78.4	82.2	73.9
Other Illegal		5.0	3.8	8.3
Total Illegal %		83.4	86.0	82.2



*relates to incidence of empty packs collected that meet any of illegal cigarettes criteria in page 3, regardless whether they are a legal brand or otherwise
 0.0%** Incidence is less than 0.1%; figure is too small to feature.

APPENDIX: NIELSEN'S ICS RESEARCH OBJECTIVE & METHODOLOGY

RESEARCH OBJECTIVES

1 Identify the **incidence & trend** of illegal cigarettes in Malaysia & at State Level

2 Identify the **illegal brands** available in Malaysia and at State Level

3 Identify the level of **compliance vs. non-compliance** on cigarette packs

I. Security features (Tax Stamps)

II. Brands of Local Manufacturers and Importers registered with Royal Malaysian Customs

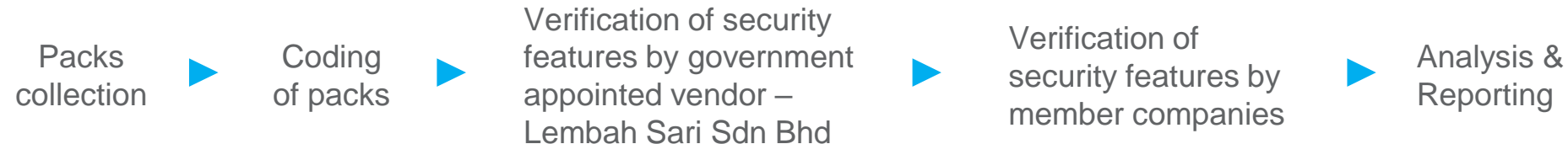
III. Mandated Labeling Requirements (under Control of Tobacco Product Regulations, Trade Description Act, Price Control & Anti Profiteering Act)

OVERVIEW OF STUDY FRAMEWORK

METHODOLOGY

- Method: **Litter collection of cigarette packs.**
- Frequency: **7 waves** in a year.
- Geographical coverage: Nationwide (Pen. M'sia and Sabah & Sarawak)
- Sample size: Nationwide **20,400 packs per wave** (Pen M'sia = A minimum of 1,200 packs per State, Sabah & Sarawak = 1,600 packs each)

PROCESS



SAMPLING ERROR

0.6% at national level and minimum 2.8% at state level

RELIABILITY

Packs
Collection

Compared with

Excise figures from:

- British American Tobacco (M) Berhad
- JT International Berhad
- Philip Morris (M) Sdn Bhd

A correlation of **0.99** consecutively since 1993 to 2020 were achieved indicating that the Litter Survey is reliable.

ICS RESEARCH METHODOLOGY AND DESIGN

- i. ICS Universe, Sample Size**
- ii. Sampling Coverage Of ICS and Fieldwork
- iii. Coding Processes
- iv. Data Processing
- v. Weighting The Survey Data

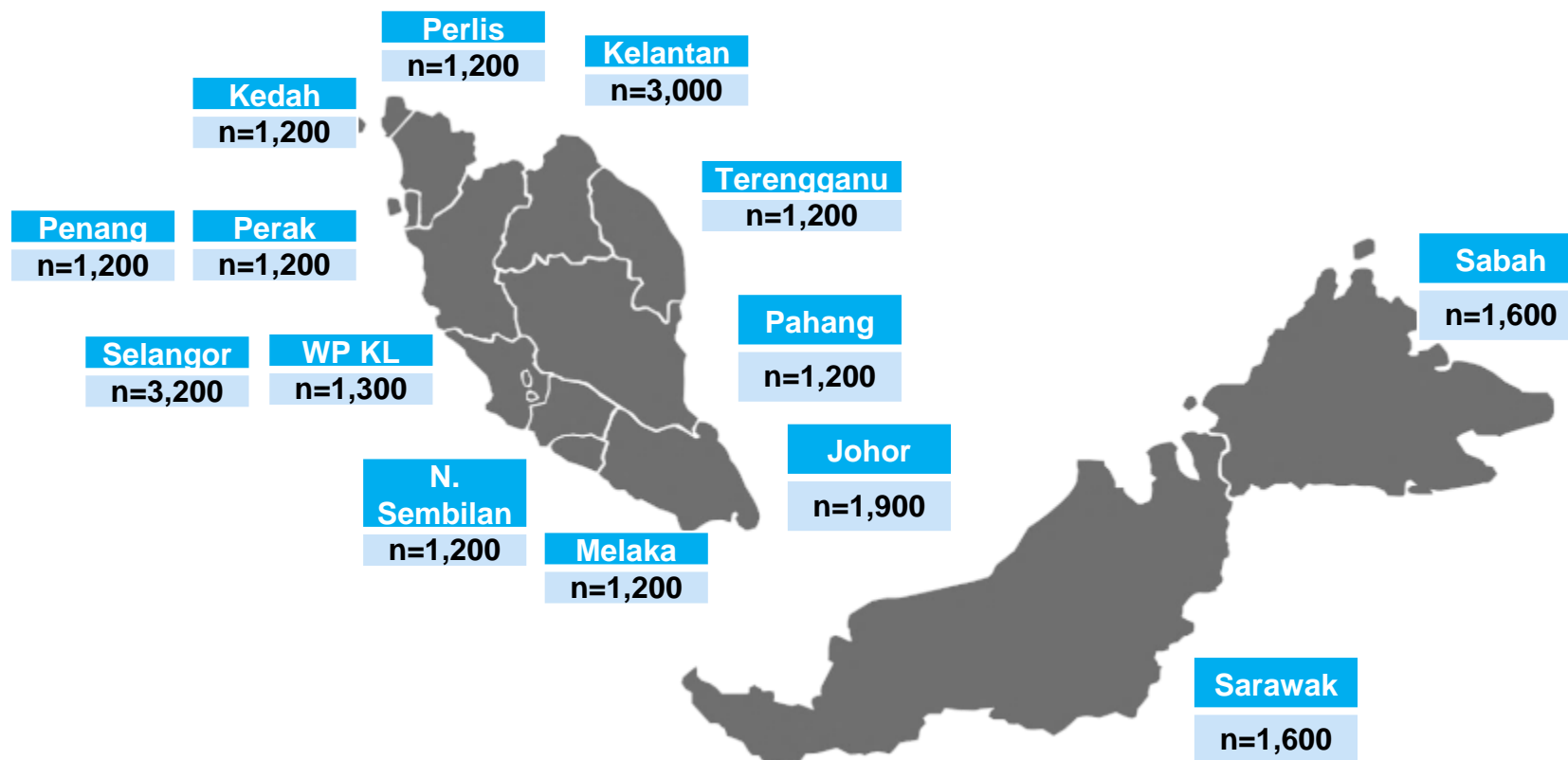
WHY SAMPLE SIZE OF 51,000 PACKS?

Sample Size (n=)	Sampling Error @ 95% Confidence
n=50	14.9%
n=100	9.9%
n=250	5.9%
n=500	4.1%
n=1,000	2.8%
n=2,000	2.0%
n=3,000	1.6%
n=4,000	1.4%
n=10,000	0.8%
n=20,000	0.6%
n=50,000	0.4%

- The data accuracy for a sample size is dependent on the sample size of a study; **Sampling error declines** as **sample size** for a study is **increased**
- To ensure minimal sampling error at **National level**, **sample size of n=20,000** was chosen
- At State level, a minimum sample size of n=1,200 was chosen to optimize data accuracy without impacting the efficiency of fieldwork turnaround time.

GEOGRAPHICAL COVERAGE & SAMPLE SIZE FOR EACH STATE

- State in Pen Malaysia, minimum sample size $n=1,200$
- State in East Malaysia, sample size $n=1,600$
- **These sample size are robust** taking into consideration geographical landscape, different cigarettes volume pattern and efficient turnaround of fieldwork



ICS RESEARCH METHODOLOGY AND DESIGN

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SAMPLING COVERAGE OF ICS

STATE	DISTRICT COVERED		
Perlis	Kangar		
Kedah	Kuala Muda	Kota Setar	Kulim
	Kubang Pasu	Baling	Pendang
Penang	Timur Laut	Seberang Perai Tengah	Seberang Perai Utara
Perak	Kinta	Larut & Matang	Manjung
	Hilir Perak	Kerian	
Selangor	Petaling	Ulu Langat	Klang
	Gombak	Kuala Langat	
WP KL	Spread across KL		
N. Sembilan	Seremban	Jempol	Port Dickson
	Tampin		
Melaka	Melaka	Alor Gajah	
Johor	Johor Bahru	Batu Pahat	Kluang
	Kulai Jaya	Muar	Kota Tinggi
Pahang	Kuantan	Temerloh	Bentong
	Maran	Rompin	Pekan
Terengganu	Kuala Terengganu	Kemaman	Dungun
	Besut		
Kelantan	Kota Bharu	Pasir Mas	Tumpat
	Bachok	Tanah Merah	
Sabah	Kota Kinabau	Tawau	Sandakan
	Lahad Datu	Keningau	Semporna
	Papar	Penampang	Beluran
	Tuaran	Ranau	Kota Belud
Sarawak	Kuching	Miri	Sibu
	Bintulu	Serian	Samarahan
	Sri Aman	Sarikei	Kapit
	Bau	Limbang	Saratok

- Nationwide
- All 13 states in Peninsular and East Malaysia and KL Federal Territory
- Covers each state's **top 50% most populous** districts
- The sampling approach ensure **both Urban & Rural** coverage reflects data released by Malaysia Department of Statistic (Census 2010)

FLOW CHART FOR PRE-FIELDWORK AND FIELDWORK

Establish starting point of collection



Collect 25 packs from the street each week

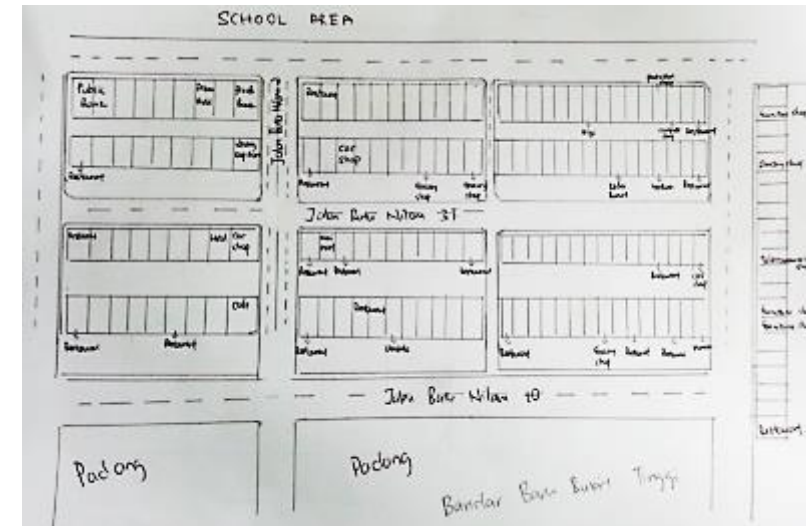


Attach label to bag: Standard label with the following:

- *State*
- *Location collected*
- *Area type*
- *Date of collection*



Packs will then be delivered to Nielsen's Head Office at KL for coding



GUIDELINES FOR PACK COLLECTION

- All Packs collected from the collection points must be in decent condition. If not Lembah Sari Sdn. Bhd. will not be able to validate the authenticity of a pack if the packs are so badly damaged that certain key elements are missing
- Instruction to collectors is to collect pack in decent condition.
- No instruction on brand restriction is issued (hence, [rejection of packs in poor condition applies to all](#) brands)
- As such, collectors will have no preference on the packs being collected as long as it is in decent condition
- Remuneration for packs collected are standard across all pack type / brand



Visual Examples of Unacceptable Packs

ICS RESEARCH METHODOLOGY AND DESIGN

- i. ICS Universe, Sample Size
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A ROBUST SOP FOR PACK VERIFICATION & CODING PROCESS

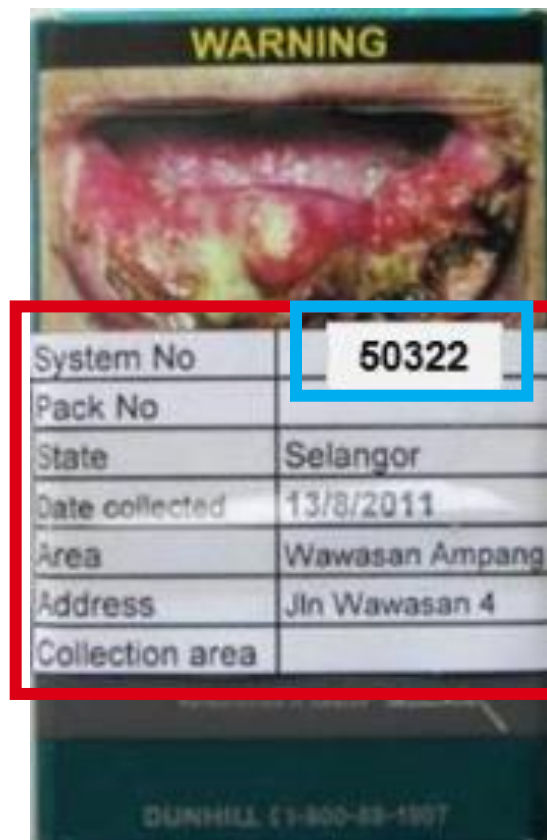
The following diagram illustrates the pack verification & coding process



CODING AND STORAGE PROCESS AT NIELSEN HQ



1. Packs which arrive at Nielsen HQ are assigned a unique pack ID number

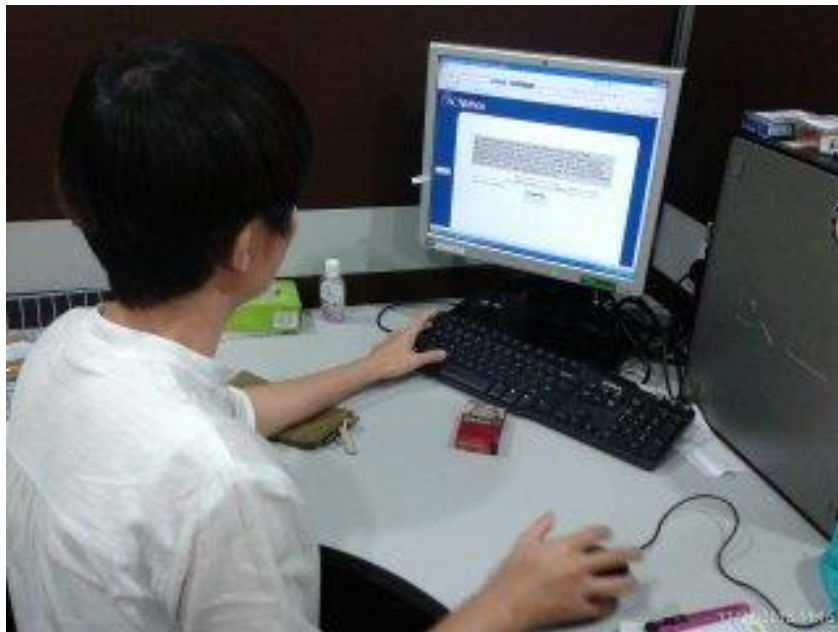


A unique ID is assigned to each pack when it reach Nielsen HQ

Each cigarettes pack which arrive will have a sticker with details on when and where it is collected

Pack Sample

CODING AND STORAGE PROCESS AT NIELSEN HQ



2. Once the pack ID number is assigned, data entry process will begin. All information on the pack will be captured

3. When data entry is completed, the packs are sorted by brands and types



CODING AND STORAGE PROCESS AT NIELSEN HQ

4. Once the sorting is complete, the cigarettes packs are stored on shelves with labeling for easy retrieval when required



ILLEGAL CIGARETTES CRITERIA FOR VERIFICATION

Packs with at least one (1) of the following features:

1. Absence of Registered Importers
2. Unregistered Importers*
3. Absence of Registered Manufacturers
4. Unregistered Manufacturers*
5. Packs with counterfeit (fake) Malaysian tax stamp**
6. Packs without Malaysian tax stamp
7. Packs with non-Malaysian tax stamp
8. Unregistered Brand*
9. Non Compliance to Ministry of Health's Control of Tobacco Product Regulations (CTPR) 2004
 - I. Absence or Non Compliance of Pictorial Health Warning Requirements
 - I. Pack Size other than 20 sticks
 - II. Absence or Non Compliance of mandated labeling requirements

* Not registered with the Royal Malaysian Customs

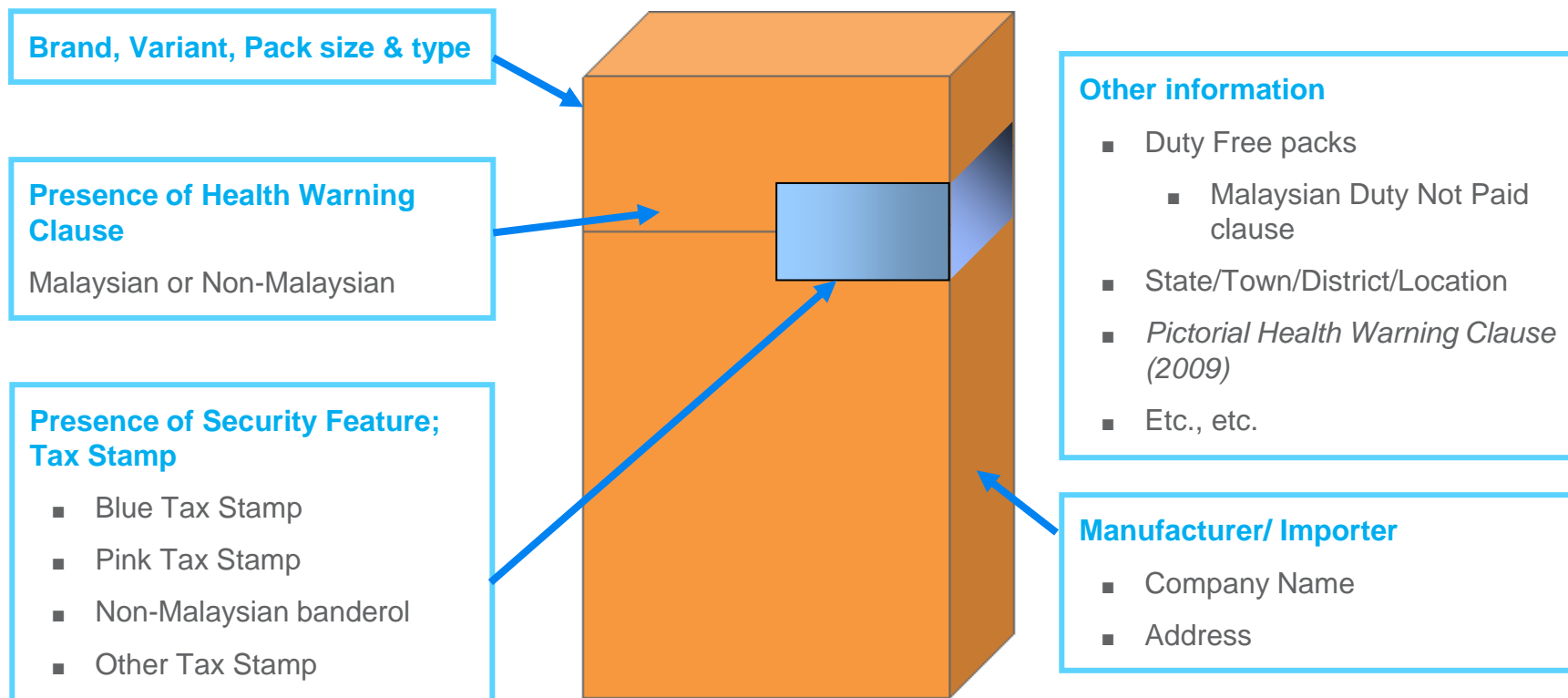
** Verified by Lembah Sari Sdn Bhd (LSSB) – Government appointed sole vendor for tax stamp

REGULATIONS SET BY THE MALAYSIA GOVERNMENT

- All locally manufactured cigarettes and imported cigarettes are required to meet the following criteria:
 - **Registered brand** with Customs
 - **Registered manufacturer** with Customs
 - **Registered importer** with Customs (if it is an imported pack)
 - **Malaysian labeling requirements** i.e. pictorial health warning clause, textual health warning clause, “no sales to under 18” clause, manufacturing date, name and address on manufacturer/importer
 - **Pack size** of not less than 20 sticks
- Additional security features for imported / manufactured packs for **domestic** consumption:
 - Blue tax stamp
- Additional security features for imported / manufactured packs for **duty free** consumption:
 - Pink tax stamp

VISIBLE ELEMENTS CAPTURED IN ICS

The following visible elements is **checked & coded / captured** for *each* of the collected packs by Nielsen Malaysia



Information on registered brands, registered manufacturers/ Importers is provided by CMTM

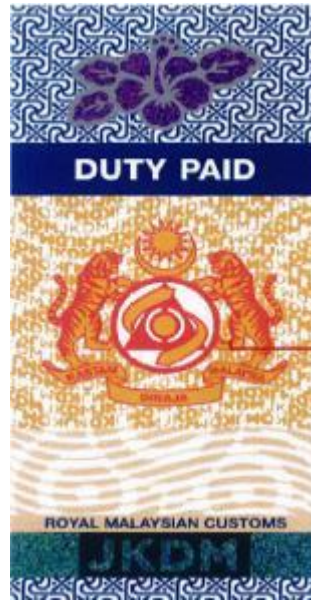
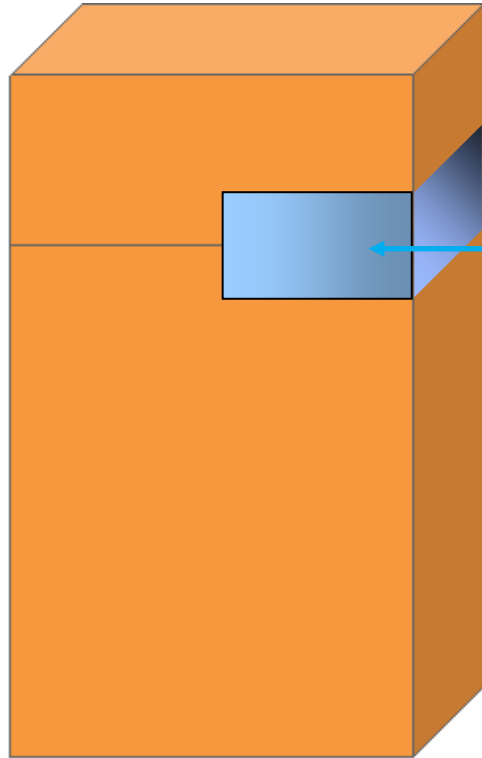
VERIFICATION OF SECURITY TAX STAMP

- **Tax Stamps** are verified by Lembah Sari using the special reader/tool
- Verification outcome: **sign off by Lembah Sari & Nielsen** as witness

No	Pack ID System	Brand	Pack Size	Security Ink	Remarks (by LSSB)	Other Comments
10	7	30720	John	20	F	
11	8	111197	John	20	F	
12	9	110215	John	20	F	
13	10	101121	John	20	F	
14	11	40085	John	20	F	
15	12	40782	John	20	F	
16	13	121022	John	20	F	
17	14	100613	John	20	F	
18	15	121195	John	20	F	
19	16	110975	John	20	F	
20	17	60734	John	20	F	
21	18	110977	John	20	F	
22	19	41164	John	20	F	
23	20	40784	John	20	F	
24	21	40689	John	20	F	
25	22	40788	John	20	F	
26	23	40711	John	20	F	
27	24	10938	John	20	F	
28	25	41090	John	20	F	
29	26	40662	John	20	F	
30	27	40996	John	20	F	
31	28	4167	John	20	F	
32	29	111168	John	20	F	
33	30	41032	John	20	F	
34	31	40639	John	20	F	
35	32	120799	John	20	F	
36	33	40843	John	20	F	
37	34	40682	John	20	F	



VERIFICATION OF SECURITY TAX STAMP



Blue Tax Stamp
(Domestic Market)

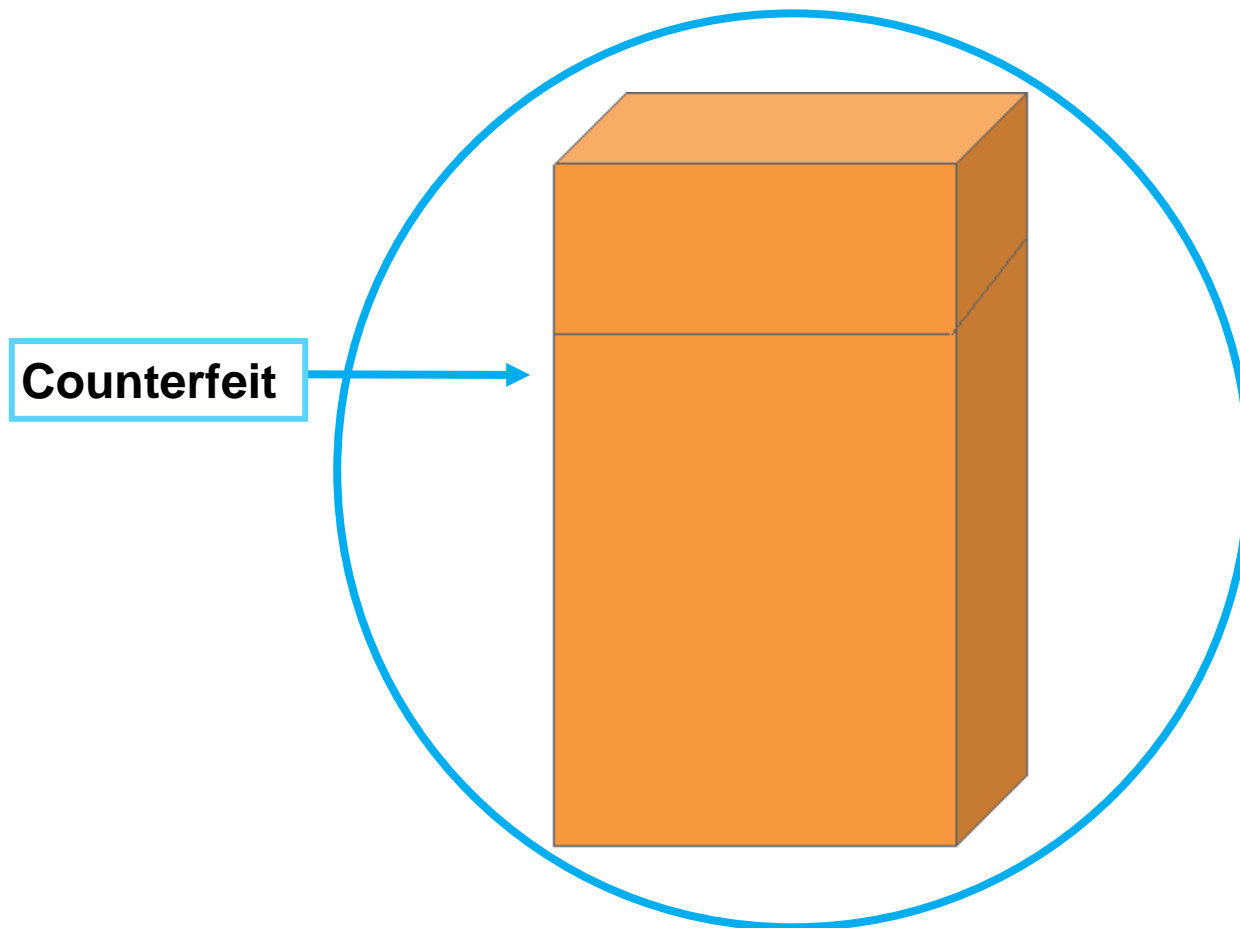
OR



Pink Tax Stamp
(Duty Free Market)

VERIFICATION OF NON-VISIBLE ELEMENTS

- Only applicable to CMTM members' brands
- **Verification** by the respective member companies' **technical experts**
- Pack **IDs of identified Counterfeit packs** are given to Nielsen Malaysia

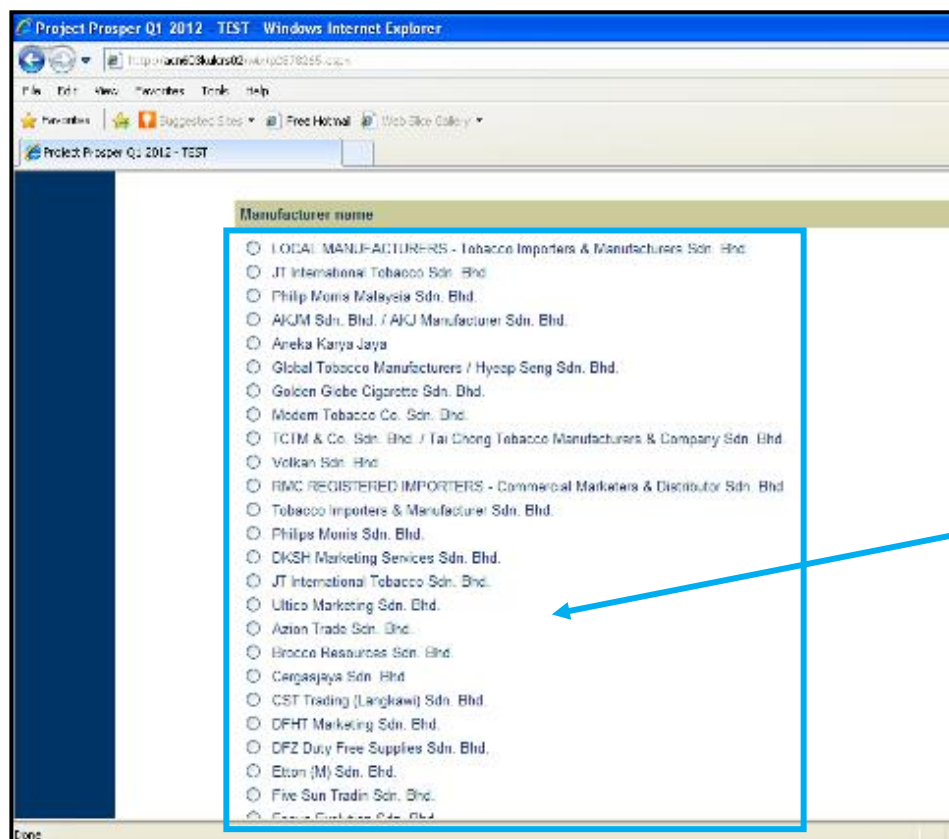


ICS RESEARCH METHODOLOGY AND DESIGN

- i. ICS Universe, Sample Size
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DATA PROCESSING (DATA CLEANING & MERGING)

- Software program to ensure data accuracy
- Logic checks on brand and manufacturers
- Security feature verification results merged into data file



Control of Response List by Researchers

- Data entry can only input data as per the response list provided
- Any new information to be added to the response list is **subject to Research Team approval**
- Research Team will **review and validate the new details** before adding in any new response into the system

DATA PROCESSING (QUALITY CONTROL)

	A1	responseid										
	A	B	E	F	G	H	I	J	K	L	M	
1	responseid	respid	Q5.Wave	Q6.Month	Q8.State	Q10.Location	Q9.Street	Q13.Spec	Q10	Q26.Region	Q20.Brand	
2	1	24003	Wave 3, Week 33: 03/10/20	Oct-12	Johor	Johor - Ba,Urban	Johor, Bar Taman Bc South [Joh	Dunhill Re				
3	2	3	Wave 3, Week 33: 03/10/20	Oct-12	Perlis	Perlis - Ko,Urban	Perlis, Kor Jalan Ara, North [Per	Peter Stuy				
4	3	36003	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Dunhill Re				
5	4	10	Wave 3, Week 33: 03/10/20	Oct-12	Perlis	Perlis - Ko,Urban	Perlis, Kor Jalan Ara, North [Per	Dunhill Re				
6	5	36038	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Jln Paser, Jalan Pas East Mala	Dunhill Re				
7	6	36004	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Winston R				
8	7	24004	Wave 3, Week 33: 03/10/20	Oct-12	Johor	Johor - Ba,Urban	Johor, Bar Taman Bc South [Joh	Dunhill Re				
9	8	24005	Wave 3, Week 33: 03/10/20	Oct-12	Johor	Johor - Ba,Urban	Johor, Bar Taman Bc South [Joh	Dunhill Re				
10	9	36005	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Dunhill Me				
11	10	24006	Wave 3, Week 33: 03/10/20	Oct-12	Johor	Johor - Ba,Urban	Johor, Bar Taman Bc South [Joh	Dunhill Re				
12	11	36040	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Jln Paser, Jalan Pas East Mala	Dunhill Me				
13	12	36006	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Gudang G				
14	13	36007	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Gudang G				
15	14	30070	Wave 3, Week 33: 03/10/20	Oct-12	Kedah	Kedah - A,Urban	Jalan Peg, Jalan Peg North [Per	Marlboro				
16	15	36041	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Jln Paser, Jalan Pas East Mala	Dunhill Me				
17	16	24007	Wave 3, Week 33: 03/10/20	Oct-12	Johor	Johor - Ba,Urban	Johor, Bar Taman Bc South [Joh	Winston R				
18	17	24008	Wave 3, Week 33: 03/10/20	Oct-12	Johor	Johor - Ba,Urban	Johor, Bar Taman Bc South [Joh	Winston R				
19	18	36042	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Jln Paser, Jalan Pas East Mala	Premium				
20	19	36008	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Gudang G				
21	20	36009	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Gudang G				
22	21	4	Wave 3, Week 33: 03/10/20	Oct-12	Perlis	Perlis - Ko,Urban	Perlis, Kor Jalan Ara, North [Per	Salem Me				
23	22	30079	Wave 3, Week 33: 03/10/20	Oct-12	Kedah	Kedah - A,Urban	Jalan Peg, Jalan Peg North [Per	Marlboro				
24	23	36010	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Marlboro				
25	24	36043	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Jln Paser, Jalan Pas East Mala	Premium				
26	25	36011	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Sabah, Ko Likas - Tor East Mala	Ero Premi				
27	26	36044	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Jln Paser, Jalan Pas East Mala	Premium				
28	27	24009	Wave 3, Week 33: 03/10/20	Oct-12	Johor	Johor - Ba,Urban	Johor, Bar Taman Bc South [Joh	Winston R				
29	28	30080	Wave 3, Week 33: 03/10/20	Oct-12	Kedah	Kedah - A,Urban	Jalan Peg, Jalan Peg North [Per	Marlboro				
30	29	5	Wave 3, Week 33: 03/10/20	Oct-12	Perlis	Perlis - Ko,Urban	Perlis, Kor Jalan Ara, North [Per	Marlboro				
31	30	24010	Wave 3, Week 33: 03/10/20	Oct-12	Johor	Johor - Ba,Urban	Johor, Bar Taman Bc South [Joh	Winston R				
32	31	36045	Wave 3, Week 33: 03/10/20	Oct-12	Sabah	Sabah - K,Urban	Jln Paser, Jalan Pas East Mala	Premium				
33	32	30081	Wave 3, Week 33: 03/10/20	Oct-12	Kedah	Kedah - A,Urban	Jalan Peg, Jalan Peg North [Per	Marlboro				

10% of data entered into the database will be cross-check by a QC personnel to ensure data accuracy and coders are capturing the data correctly

QC personnel will randomly select 10% of packs which has been keyed into the system, cross-compare to ensure pack features is similar to what has been recorded in the system and rectify the data

Besides completing a 10% physical QC check, the database is reviewed to check for data discrepancy against known facts

- E.g. Dunhill belongs to BAT M'sia ,
- Legal packs comes only in pack size of 20s

If any data discrepancies are detected, the affected pack will be extracted and a physical validation process will be undergone

ICS RESEARCH METHODOLOGY AND DESIGN

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- v. **Weighting The Survey Data**

Why apply Weighting to Survey Data?

- A weighting process is used to determine the total estimated cigarettes volume pattern of an individual state
- If weighting is not done, then:
 - **All states** in Peninsular are assumed to have **equal volumes** of total cigarettes volume
 - Perlis with a smaller population will be **over represented** and Selangor, with a bigger population will be **under represented**
 - Sabah and Sarawak, combined would represent about 16% (8,000 of 51,000 packs) of total cigarettes volume in Malaysia, which in reality is less than 10%.

HOW DOES NIELSEN WEIGHT THE DATA?

Step 1: Establish the Estimated Legal Industry Volume

- The **estimated legal industry volume** is established based on the following information:
 - In-market sales** as provided independently by British American Tobacco Malaysia (BATM), Philip Morris Malaysia (PMM) and Japan Tobacco International (JTI)
 - Local manufacturers' **volume** and **Malaysian Duty Free** volume from Illicit Cigarettes Study (**ICS**)

	May, 2021	
	('000 sticks)	
CMTM Member Companies (BATM, PMM, JTI)	733,298	Derive from actual in-market sales as provided by CMTM member companies
Other Local manufacturers	0	
Malaysian Duty Free	8,291	ICS volume estimation is used as substitute since actual data is not available
Total Legal Cigarettes Sales	741,589	

Unit of measurement : thousand sticks

HOW DOES NIELSEN WEIGHT THE DATA?

Step 2: Establish the Legal Industry Volume contribution by State

- Using in-market sales (3 months average) as provided by CMTM member companies as a guideline, **establish each states' legal volume contribution** towards the national volume of 741,599,000 sticks

	IN-MARKET SALES BY CMTM	STATE'S LEGAL VOLUME CONTRIBUTION
PERLIS	5,184	0.8%
KEDAH	31,982	4.8%
PENANG	51,928	7.9%
PERAK	54,502	8.3%
SELANGOR	179,981	27.3%
WP KL	69,906	10.6%
N.SEMBILAN	37,056	5.6%
MELAKA	24,932	3.8%
JOHOR	99,571	15.1%
PAHANG	30,285	4.6%
TERENGGANU	13,870	2.1%
KELANTAN	19,124	2.9%
SABAH	21,424	3.2%
SARAWAK	20,716	3.1%
NATIONAL	660,461	

Step 2a. (Using Retail Audit)

$$\text{State Legal Volume Contribution} = \frac{\text{State's Retail Audit Volume}}{\text{National Volume}}$$

(e.g. 179,981 / 660,461 = 27.3%)

	NIELSEN RETAIL AUDIT	STATE'S LEGAL VOLUME CONTRIBUTION	PROJECTED/ ESTIMATED STATE LEGAL VOLUME
SELANGOR	179,981	27.3%	202,089
NATIONAL	660,461		741,589

Step 2b.

$$\text{Projected States Legal Volume} = \text{State Legal Volume Contribution} \times \text{National Legal Volume}$$

(derived from Retail Audit) (obtained from Step 1)

(e.g. 27.3% x 741,589 = 202,089)

HOW DOES NIELSEN WEIGHT THE DATA?

Step 2: Key Output

	IN-MARKET SALES BY CMTM	STATE'S LEGAL VOLUME CONTRIBUTION	PROJECTED/ ESTIMATED STATE LEGAL VOLUME
PERLIS	5,184	0.8%	5,821
KEDAH	31,982	4.8%	35,910
PENANG	51,928	7.9%	58,307
PERAK	54,502	8.3%	61,197
SELANGOR	179,981	27.3%	202,089
WP KL	69,906	10.6%	78,493
N.SEMBILAN	37,056	5.6%	41,608
MELAKA	24,932	3.8%	27,995
JOHOR	99,571	15.1%	111,802
PAHANG	30,285	4.6%	34,005
TERENGGANU	13,870	2.1%	15,574
KELANTAN	19,124	2.9%	21,473
SABAH	21,424	3.2%	24,056
SARAWAK	20,716	3.1%	23,261
NATIONAL	660,461		741,589

HOW DOES NIELSEN WEIGHT THE DATA?

Step 3: Establish the Incidence for Legal / Illegal Cigarettes

- Convert the data from “**packs collected** “ to “**sticks**” (based on pack size)
- The **study’s unit of measurement** is based on consumption in **sticks**
 - Though CTPR prohibits the sales of cigarettes below the pack sizes of 20 sticks, **illegal cigarettes** (primarily for illegal kretek) could still be found **in pack sizes below 20 sticks**
 - The **calculation based on number of packs collected** will **create a false inflation** on illegal volume due to the presence of packs sizes below 20 sticks

State	Total packs collected (May'21)	Number of legal packs collected	(Unweighted) Volume of legal packs collected	Number of illegal packs collected	(Unweighted) Volume of illegal packs collected	Total volume (Legal + Illegal)	Incidence of legal cigarettes	Incidence of illegal cigarettes
			A		B	C = A + B	D = A / C	E = B / C
SELANGOR	3,200	1,500	30,000	1,700	31,868	61,868	48.5%	51.5%

Step 3a.

Sum up the number of sticks per pack for all legal packs collected to establish the estimated legal volume in sticks

Step 3b.

Repeat Step 3a to establish the estimated illegal volume in sticks

Step 3c.

Sum up the total consumption for both legal and illegal to establish The estimated total cigarette volume at state level

Step 3d.

Calculate the ratio of estimated legal vs. illegal volume

HOW DOES NIELSEN WEIGHT THE DATA?

Step 3: Incidence for Legal / Illegal Cigarettes Key Output

- Establish the level of legal vs. illegal cigarettes ratio in each respective state

State	Total packs collected (May'21)	Number of legal packs collected	(Unweighted) Volume of legal packs collected	Number of illegal packs collected	(Unweighted) Volume of illegal packs collected	Total volume (Legal + Illegal)	Incidence of legal cigarettes	Incidence of illegal cigarettes
			A		B	C = A + B	D = A / C	E = B / C
PERLIS	1,200	513	10,260	687	12,527	22,787	45.0%	55.0%
KEDAH	1,200	518	10,360	682	12,812	23,172	44.7%	55.3%
PENANG	1,200	514	10,280	686	12,888	23,168	44.4%	55.6%
PERAK	1,200	796	15,920	404	7,922	23,842	66.8%	33.2%
SELANGOR	3,200	1,500	30,000	1,700	31,868	61,868	48.5%	51.5%
WP KL	1,300	641	12,820	659	12,404	25,224	50.8%	49.2%
N.SEMBILAN	1,200	770	15,400	430	8,282	23,682	65.0%	35.0%
MELAKA	1,200	658	13,160	542	10,648	23,808	55.3%	44.7%
JOHOR	1,900	1,092	21,840	808	15,632	37,472	58.3%	41.7%
PAHANG	1,200	318	6,348	882	16,935	23,283	27.3%	72.7%
T'GANU	1,200	384	7,680	816	15,898	23,578	32.6%	67.4%
KELANTAN	1,200	385	7,700	815	15,594	23,294	33.1%	66.9%
SABAH	1,600	195	3,900	1,405	27,182	31,082	12.5%	87.5%
SARAWAK	1,600	262	5,240	1,338	26,248	31,488	16.6%	83.4%

HOW DOES NIELSEN WEIGHT THE DATA?

Step 4: Project Total Market Volume

- Once each states' estimated legal volume and legal incidence have been established, the numbers will be used to project total industry volume for each state

	STATE LEGAL VOLUME	LEGAL INCIDENCE	TOTAL MARKET VOLUME	STATE ILLEGAL VOLUME
	A	B	$C = A / B$	$D = C - A$
SELANGOR	202,089	51.5%	416,679	214,590

Step 4a.

Based on the incidence for legal cigarettes of 51.5% in Selangor, project the total volume for the state
(e.g. 202,089 divide by 51.5% = 416,679)

Step 4b.

Illegal volume is established by subtracting the projected total state's volume with the legal volume
(e.g. 416,679 – 202,089 = 214,590)

HOW DOES NIELSEN WEIGHT THE DATA?

Step 4: Key Output - Illegal Cigarettes Incidence @ National level

- Repeat the same process in Step 4 for all States

	STATE LEGAL VOLUME	LEGAL INCIDENCE	TOTAL MARKET VOLUME	STATE ILLEGAL VOLUME
PERLIS	5,821	55.0%	12,935	7,114
KEDAH	35,910	55.3%	80,337	44,426
PENANG	58,307	55.6%	131,321	73,015
PERAK	61,197	33.2%	91,612	30,415
SELANGOR	202,089	51.5%	416,679	214,590
WP KL	78,493	49.2%	154,514	76,021
N.SEMBILAN	41,608	35.0%	64,012	22,404
MELAKA	27,995	44.7%	50,623	22,628
JOHOR	111,802	41.7%	191,770	79,968
PAHANG	34,005	72.7%	124,561	90,556
TERENGGANU	15,574	67.4%	47,772	32,198
KELANTAN	21,473	66.9%	64,873	43,400
SABAH	24,056	87.5%	192,445	168,389
SARAWAK	23,261	83.4%	140,124	116,864
NATIONAL	741,589		1,763,577	1,021,988

Divide **National Illegal Volume 1,021,988** with **National Total Market Volume 1,763,577** **57.9%**

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