

Illicit Cigarettes Study (ICS) In Malaysia, Jan 2024 Report

Report Commissioned by CMTM member companies



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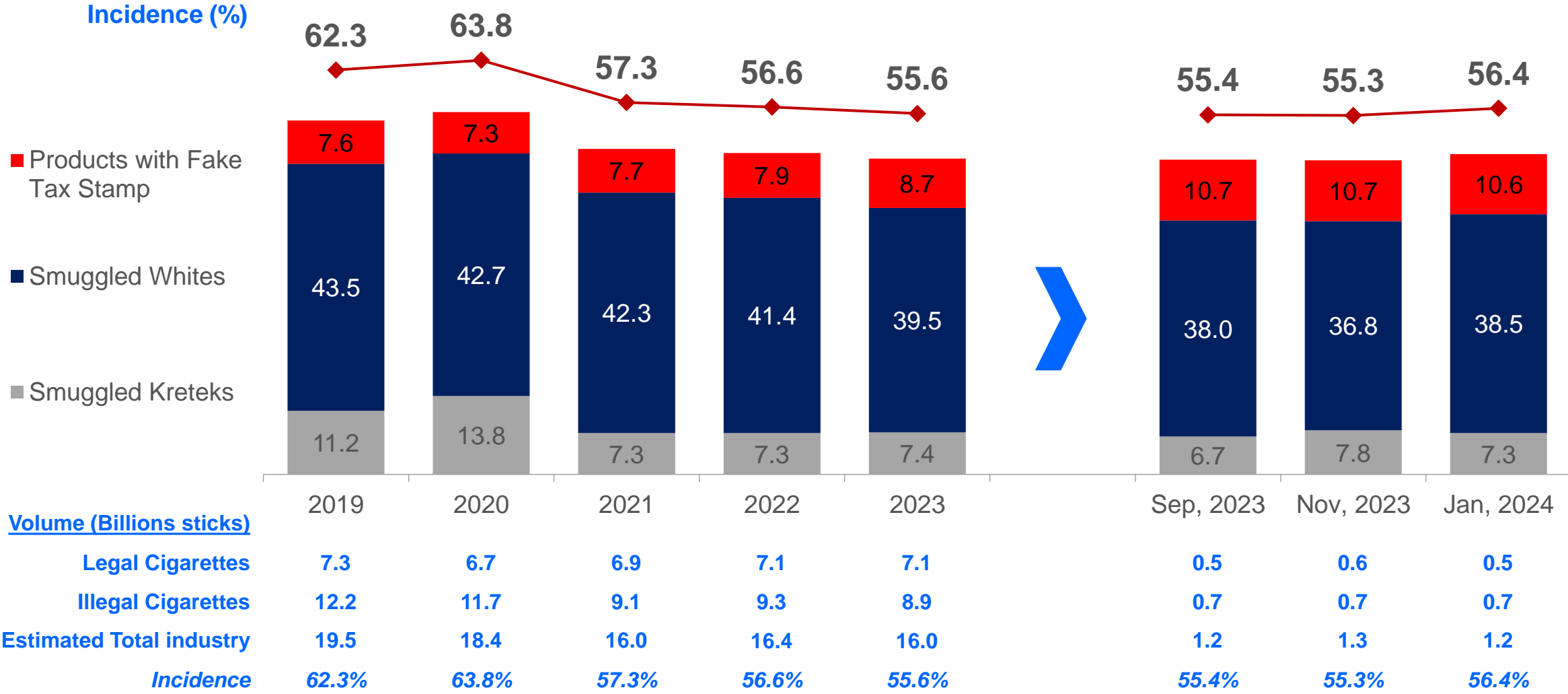
Illegal Cigarettes Criteria For Verification

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
 - II. Pack Size other than 20 sticks
 - III. Absence or Non Compliance of mandated labeling requirements

Illegal Cigarettes Incidence At National Level :

Overall increase by 1.1 ppt. vs. Nov, 2023

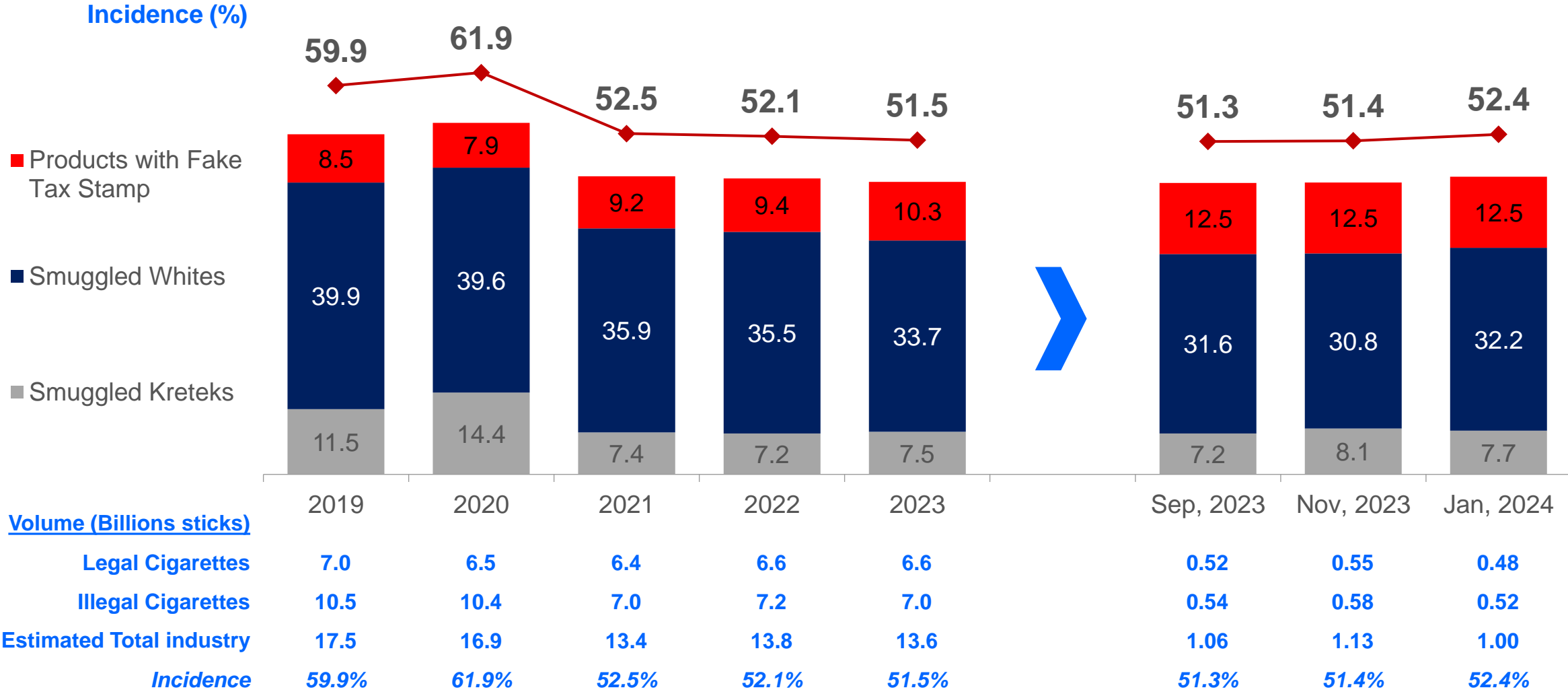


Volume (Billions sticks)

	2019	2020	2021	2022	2023	Sep, 2023	Nov, 2023	Jan, 2024
Legal Cigarettes	7.3	6.7	6.9	7.1	7.1	0.5	0.6	0.5
Illegal Cigarettes	12.2	11.7	9.1	9.3	8.9	0.7	0.7	0.7
Estimated Total industry	19.5	18.4	16.0	16.4	16.0	1.2	1.3	1.2
Incidence	62.3%	63.8%	57.3%	56.6%	55.6%	55.4%	55.3%	56.4%

Illegal Cigarettes Incidence In Pen. Malaysia :

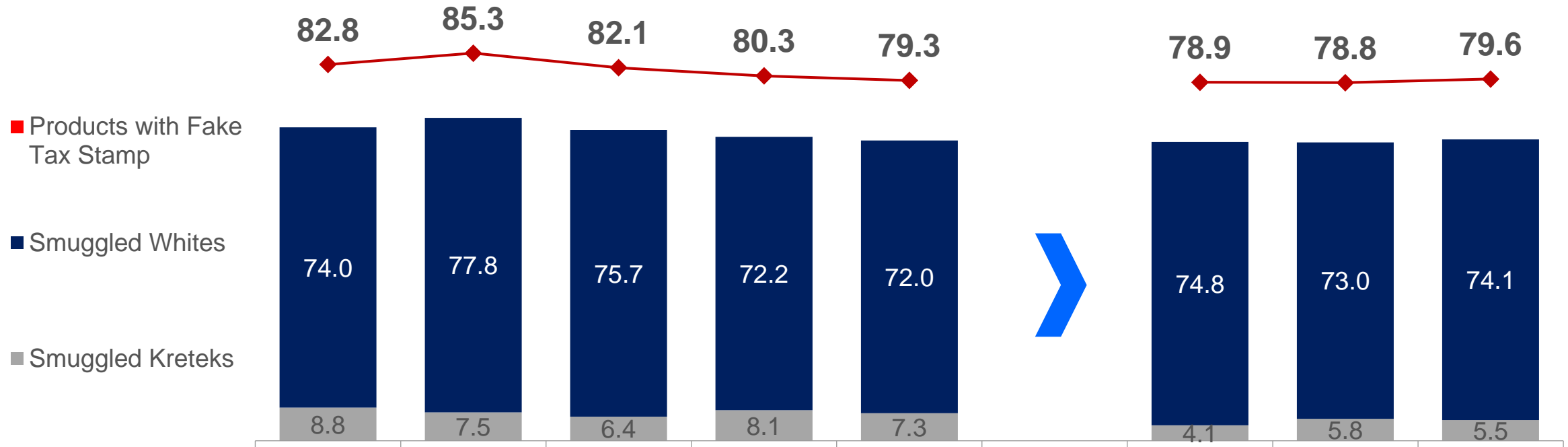
Overall increase by 1.0 ppt. vs. Nov, 2023



Illegal Cigarettes Incidence In East Malaysia :

Overall increase by 0.8 ppt. vs. Nov, 2023

Incidence (%)



Volume (Billions sticks)

	2019	2020	2021	2022	2023	Sep, 2023	Nov, 2023	Jan, 2024
Legal Cigarettes	0.3	0.2	0.5	0.5	0.5	0.04	0.04	0.04
Illegal Cigarettes	1.7	1.3	2.1	2.1	1.9	0.14	0.15	0.14
Estimated Total industry	2.0	1.5	2.6	2.6	2.4	0.18	0.19	0.18
Incidence	82.8%	85.3%	82.1%	80.3%	79.3%	78.9%	78.8%	79.6%

Top 10 Illegal Cigarettes Brands*

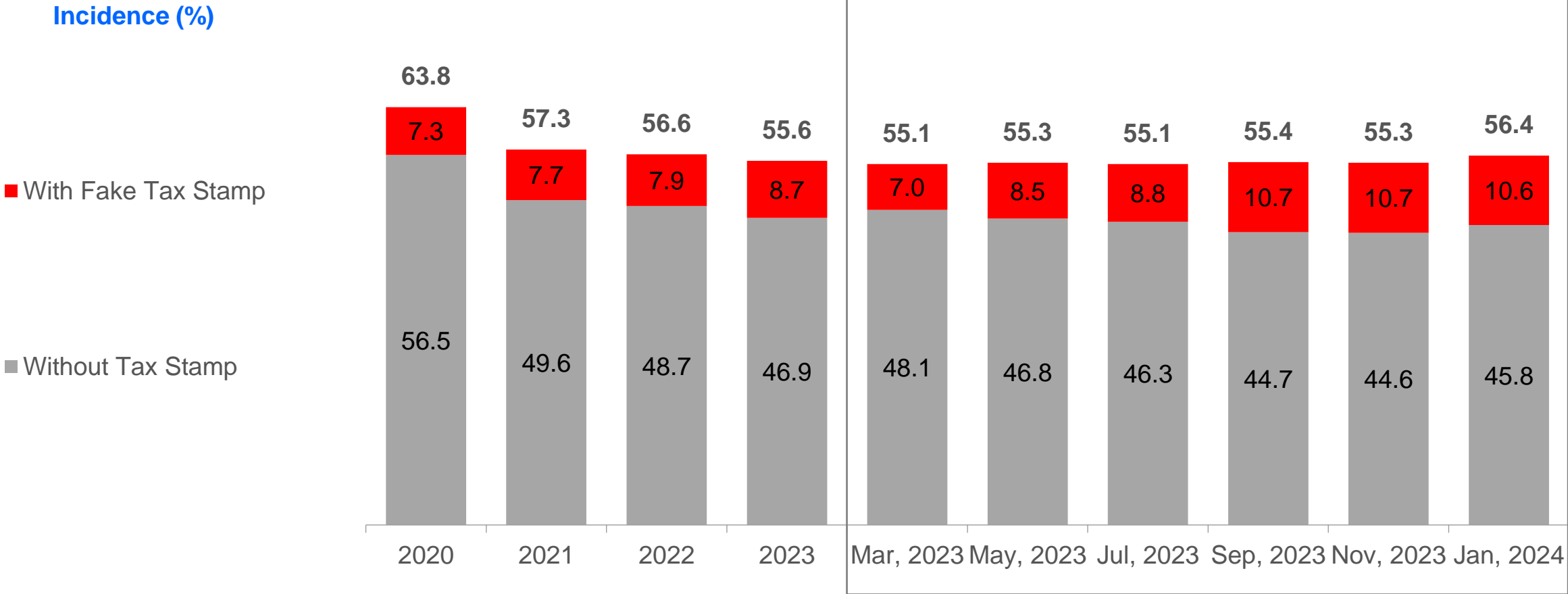
They account for approximately 79% of illegal cigarettes volume

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	13.3	12.1	13.7
2.	Era	7.9	6.9	7.4
3.	Canyon	4.5	4.4	5.6
4.	Gudang Garam	4.1	3.8	4.2
5.	U2	3.9	3.9	4.4
6.	Bosston*	3.3	2.6	1.7
7.	L.A.	2.4	2.5	2.3
8.	Misto*	2.0	1.8	1.4
9.	Parkway	1.8	1.4	1.5
10.	D&J	1.3	1.4	1.0
Top 10 Total		44.5	40.8	43.2
<i>Other Illegal</i>		11.9	14.5	12.4
Total Illegal %		56.4	55.3	55.6

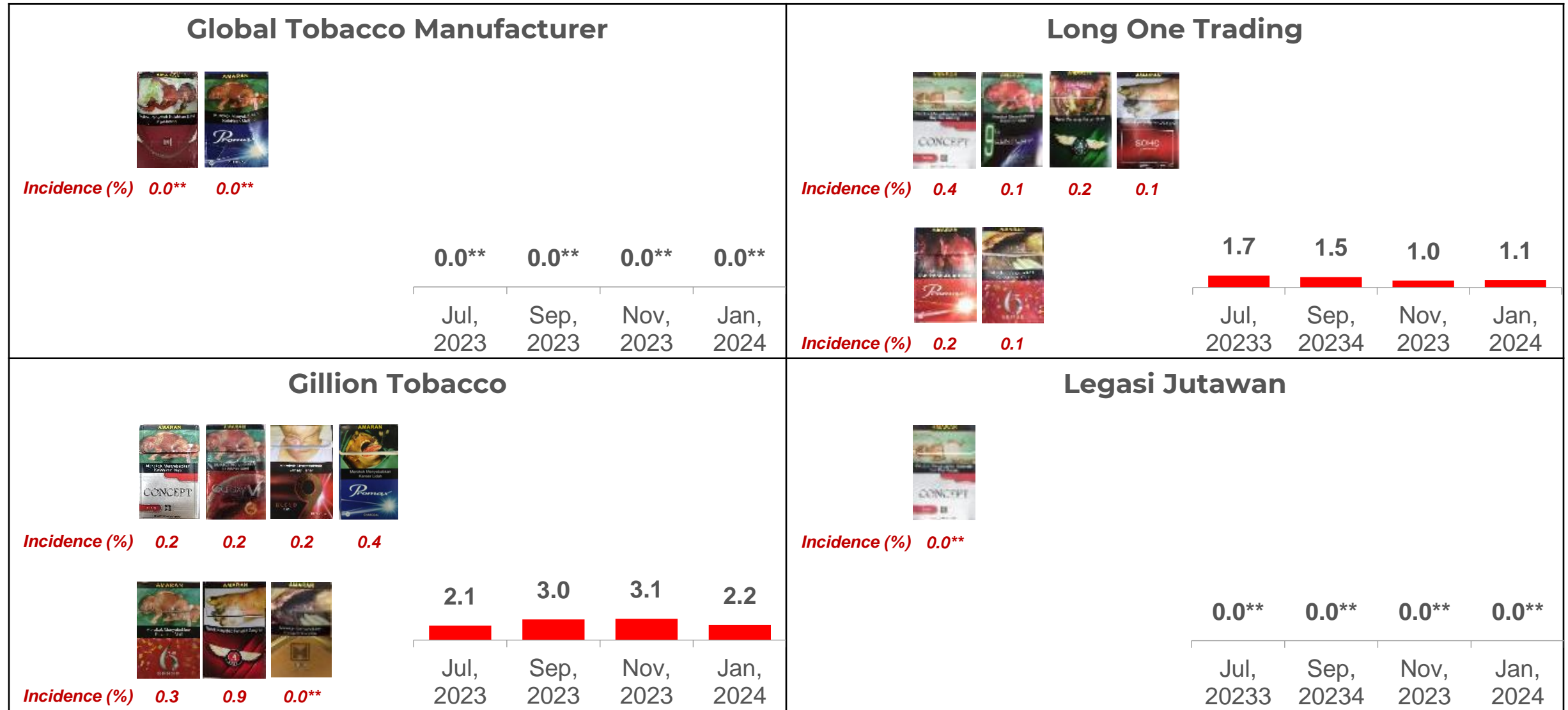


Tax Stamp Breakdown Of Illegal Cigarettes :

- 81% of illegal cigarettes are without tax stamps while remaining 19% are with fake tax stamps

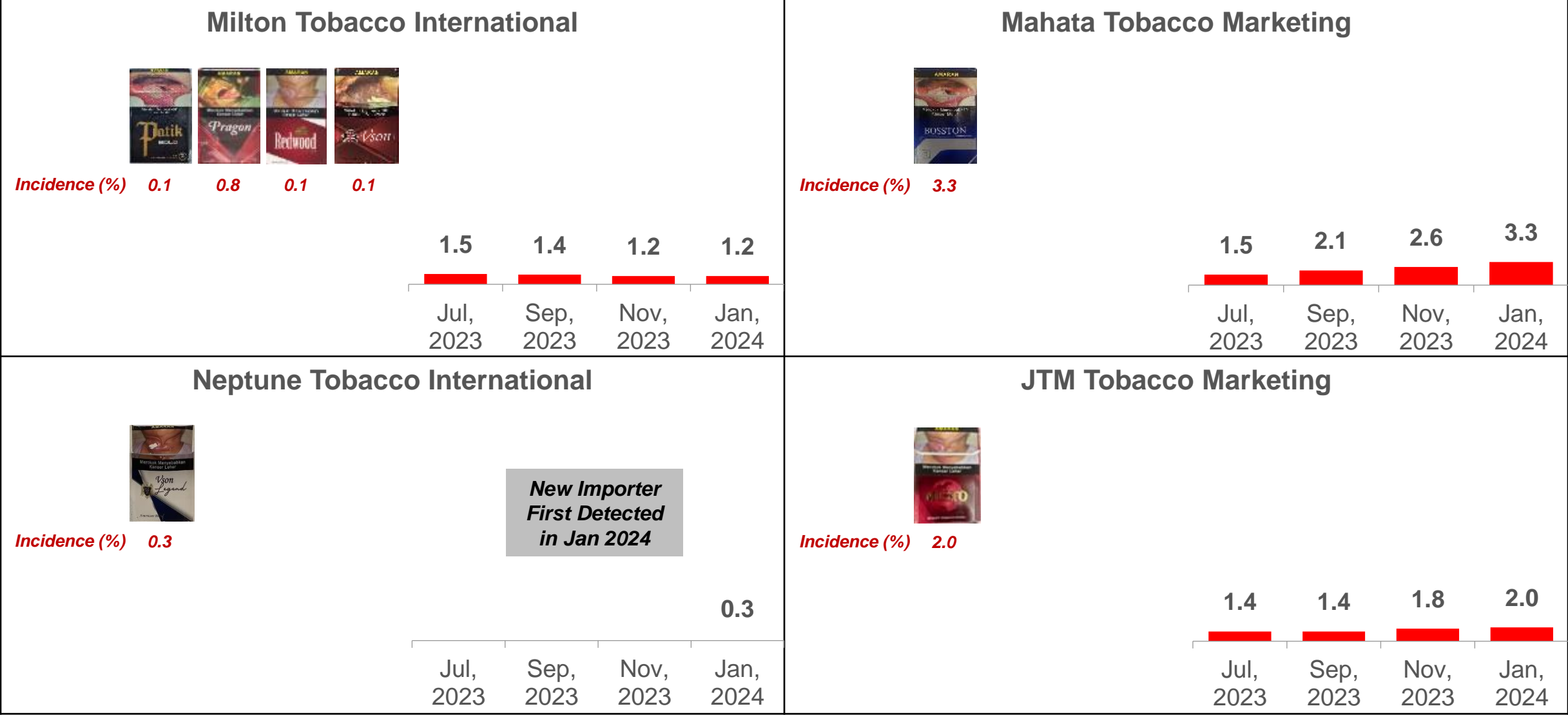


Fake Tax Stamp Breakdown By Importers :






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

Fake Tax Stamp Breakdown By Importers :



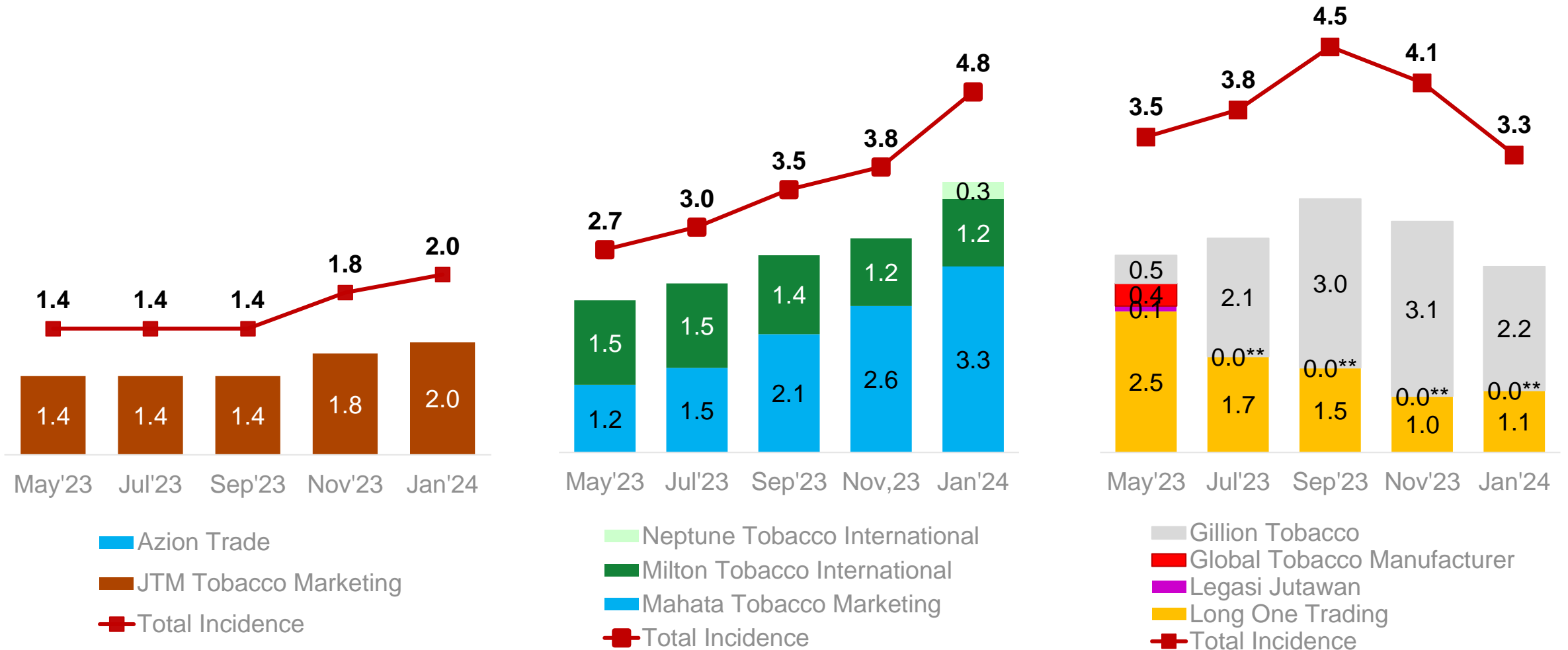
Fake Tax Stamp Breakdown By Importers :

Pacific Tobacco Company	VTI Marketing																
 <p>Incidence (%) 0.0**</p>	 <p>Incidence (%) 0.4</p>																
<table border="1"> <tr> <td>0.1</td> <td>0.1</td> <td>0.0**</td> <td>0.0**</td> </tr> <tr> <td>Jul, 2023</td> <td>Sep, 2023</td> <td>Nov, 2023</td> <td>Jan, 2024</td> </tr> </table>	0.1	0.1	0.0**	0.0**	Jul, 2023	Sep, 2023	Nov, 2023	Jan, 2024	<table border="1"> <tr> <td>0.4</td> <td>1.1</td> <td>0.8</td> <td>0.4</td> </tr> <tr> <td>Jul, 2023</td> <td>Sep, 2023</td> <td>Nov, 2023</td> <td>Jan, 2024</td> </tr> </table>	0.4	1.1	0.8	0.4	Jul, 2023	Sep, 2023	Nov, 2023	Jan, 2024
0.1	0.1	0.0**	0.0**														
Jul, 2023	Sep, 2023	Nov, 2023	Jan, 2024														
0.4	1.1	0.8	0.4														
Jul, 2023	Sep, 2023	Nov, 2023	Jan, 2024														
Global Resource 55																	
 <p>Incidence (%) 0.0**</p>																	
<table border="1"> <tr> <td>0.1</td> <td>0.1</td> <td>0.1</td> <td>0.0**</td> </tr> <tr> <td>Jul, 2023</td> <td>Sep, 2023</td> <td>Nov, 2023</td> <td>Jan, 2024</td> </tr> </table>	0.1	0.1	0.1	0.0**	Jul, 2023	Sep, 2023	Nov, 2023	Jan, 2024									
0.1	0.1	0.1	0.0**														
Jul, 2023	Sep, 2023	Nov, 2023	Jan, 2024														

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

Fake Tax Stamp Breakdown By Importers :

Incidence for packs imported by Mahata Tobacco Marketing and JTM Tobacco Marketing have increased in Jan'24



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

Illegal Cigarettes Incidence By State :

10 States recording an increase vs. Nov 2023

	A Jan, 2024				B Nov, 2023				A minus B Variance (Jan'2024 vs. Nov'2023)				Volume Contribution
	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	%
Pahang	80.7	13.6	52.2	14.9	79.8	16.7	51.0	12.1	+0.9	-3.1	+1.2	+2.8	14%
Sarawak	80.3	0.0	71.7	8.6	79.9	0.0	68.8	11.1	+0.4	0.0	+2.9	-2.5	10%
Sabah	78.9	0.0	76.2	2.7	77.8	0.0	77.4	0.4	+1.1	0.0	-1.2	+2.3	11%
Terengganu	70.5	13.2	54.0	3.3	65.7	8.1	52.5	5.1	+4.8	+5.1	+1.5	-1.8	4%
Kelantan	60.3	0.3	59.4	0.6	55.1	0.9	50.5	3.7	+5.2	-0.6	+8.9	-3.1	3%
Johor	57.0	21.8	30.0	5.2	56.0	22.7	27.1	6.2	+1.0	-0.9	+2.9	-1.0	20%
Melaka	56.2	32.0	21.4	2.8	51.1	37.3	10.9	2.9	+5.1	-5.3	+10.5	-0.1	4%
Penang	47.8	5.9	39.0	2.9	46.5	6.5	37.7	2.3	+1.3	-0.6	+1.3	+0.6	5%
Selangor	44.7	6.3	26.3	12.1	44.1	4.9	25.8	13.4	+0.6	+1.4	+0.5	-1.3	16%
WP KL	42.1	1.0	28.0	13.1	42.2	1.0	28.0	13.2	-0.1	0.0	0.0	-0.1	7%
N.Sembilan	42.0	24.7	15.9	1.4	38.5	16.3	19.8	2.4	+3.5	+8.4	-3.9	-1.0	3%
Perlis	41.8	0.8	36.8	4.2	51.8	1.1	45.5	5.2	-10.0	-0.3	-8.7	-1.0	0%**
Perak	33.2	12.5	19.7	1.0	33.3	15.6	17.1	0.6	-0.1	-3.1	+2.6	+0.4	3%
Kedah	32.4	8.8	23.4	0.2	43.3	8.2	33.6	1.5	-10.9	+0.6	-10.2	-1.3	1%
National Incidence	56.4	10.6	38.5	7.3	55.3	10.7	36.8	7.8	+1.1	-0.1	+1.7	-0.5	100%

Illegal Cigarettes Incidence By State :

10 States recording an increase vs. 2023

	A Jan, 2024				B 2023				A minus B Variance (Jan'2024 vs. 2023)				Volume Contribution
	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	%
Pahang	80.7	13.6	52.2	14.9	77.7	12.3	54.2	11.2	+3.0	+1.3	-2.0	+3.7	14%
Sarawak	80.3	0.0	71.7	8.6	80.2	0.0	68.1	12.1	+0.1	0.0	+3.6	-3.5	10%
Sabah	78.9	0.0	76.2	2.7	78.4	0.0	76.2	2.2	+0.5	0.0	0.0	+0.5	11%
Terengganu	70.5	13.2	54.0	3.3	68.4	11.5	51.8	5.1	+2.1	+1.7	+2.2	-1.8	4%
Kelantan	60.3	0.3	59.4	0.6	56.9	1.0	53.5	2.4	+3.4	-0.7	+5.9	-1.8	3%
Johor	57.0	21.8	30.0	5.2	56.0	17.0	32.6	6.4	+1.0	+4.8	-2.6	-1.2	20%
Melaka	56.2	32.0	21.4	2.8	49.2	27.5	19.1	2.6	+7.0	+4.5	+2.3	+0.2	4%
Penang	47.8	5.9	39.0	2.9	46.8	8.0	35.7	3.1	+1.0	-2.1	+3.3	-0.2	5%
Selangor	44.7	6.3	26.3	12.1	45.3	4.3	29.0	12.0	-0.6	+2.0	-2.7	+0.1	16%
WP KL	42.1	1.0	28.0	13.1	41.4	1.1	30.2	10.1	+0.7	-0.1	-2.2	+3.0	7%
N.Sembilan	42.0	24.7	15.9	1.4	41.3	21.1	16.7	3.5	+0.7	+3.6	-0.8	-2.1	3%
Perlis	41.8	0.8	36.8	4.2	50.6	1.6	41.3	7.7	-8.8	-0.8	-4.5	-3.5	0%**
Perak	33.2	12.5	19.7	1.0	34.4	13.0	20.4	1.0	-1.2	-0.5	-0.7	0.0	3%
Kedah	32.4	8.8	23.4	0.2	46.4	6.0	36.7	3.7	-14.0	+2.8	-13.3	-3.5	1%
National Incidence	56.4	10.6	38.5	7.3	55.6	8.7	39.5	7.4	+0.8	+1.9	-1.0	-0.1	100%

Top 10 Illegal Cigarettes Brands* For Perlis

- Volume contribution to National = 0%**

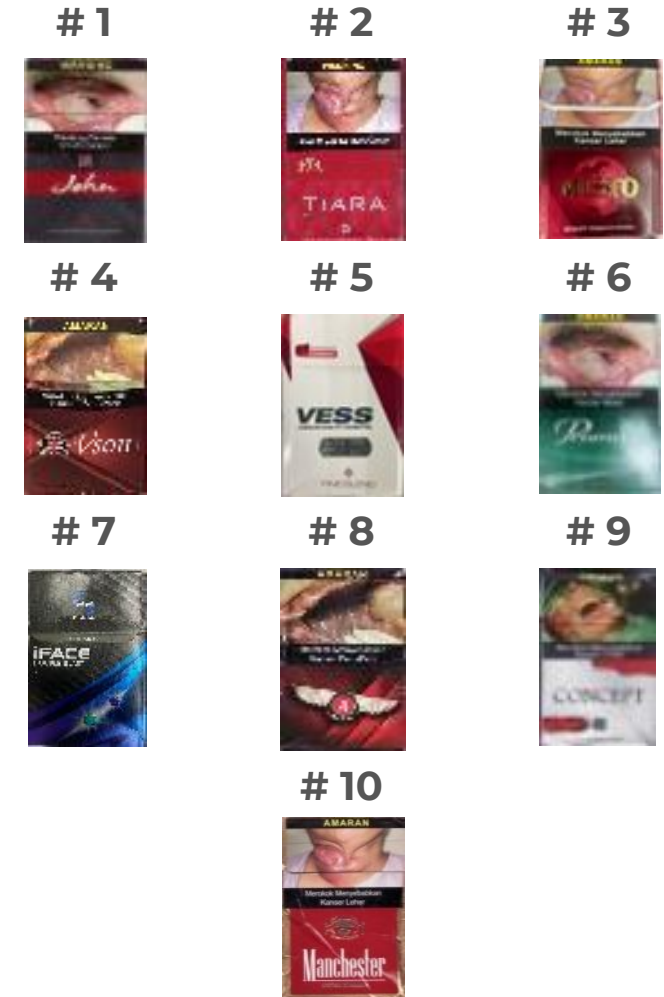
		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	32.5	37.1	33.2
2.	Gudang Garam	4.2	5.1	7.0
3.	Vess	4.1	7.9	5.9
4.	Misto*	0.3	0.6	1.1
5.	Vson*	0.2	-	0.0**
6.	Tiara	0.1	0.3	1.7
7.	Manchester*	0.1	0.2	0.0**
8.	Promax*	0.1	0.2	0.3
9.	A380*	0.1	-	0.1
10.	Tex*	0.1	-	-
Top 10 Total		41.8	51.4	49.3
<i>Other Illegal</i>		-	0.4	1.3
Total Illegal %		41.8	51.8	50.6



Top 10 Illegal Cigarettes Brands* For Kedah

- Volume contribution to National = 1%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	14.3	19.8	24.6
2.	Tiara	6.0	7.0	3.7
3.	Misto*	3.2	1.0	0.3
4.	Vson*	3.0	3.7	0.8
5.	Vess	2.5	4.8	3.9
6.	Promax*	1.7	1.3	1.0
7.	iFace	0.6	1.6	-
8.	A380*	0.3	1.8	1.9
9.	Concept*	0.3	0.1	0.8
10.	Manchester*	0.2	0.3	0.4
Top 10 Total		32.1	41.4	37.4
<i>Other Illegal</i>		<i>0.3</i>	<i>1.9</i>	<i>9.0</i>
Total Illegal %		32.4	43.3	46.4



Top 10 Illegal Cigarettes Brands* For Penang

- Volume contribution to National = 5%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	36.4	33.7	31.4
2.	Gudang Garam	2.6	2.1	2.8
3.	Manchester*	1.5	1.8	2.5
4.	Tex	1.1	1.1	1.0
5.	Concept*	0.9	1.2	0.9
6.	Promax*	0.8	0.2	0.9
7.	Pragon*	0.7	0.8	1.0
8.	M*	0.5	0.5	0.6
9.	Forman*	0.4	0.8	0.3
10.	Luffman	0.4	0.5	0.4
Top 10 Total		45.3	42.7	41.8
<i>Other Illegal</i>		2.5	3.8	5.0
Total Illegal %		47.8	46.5	46.8



Top 10 Illegal Cigarettes Brands* For Perak

- Volume contribution to National = 3%

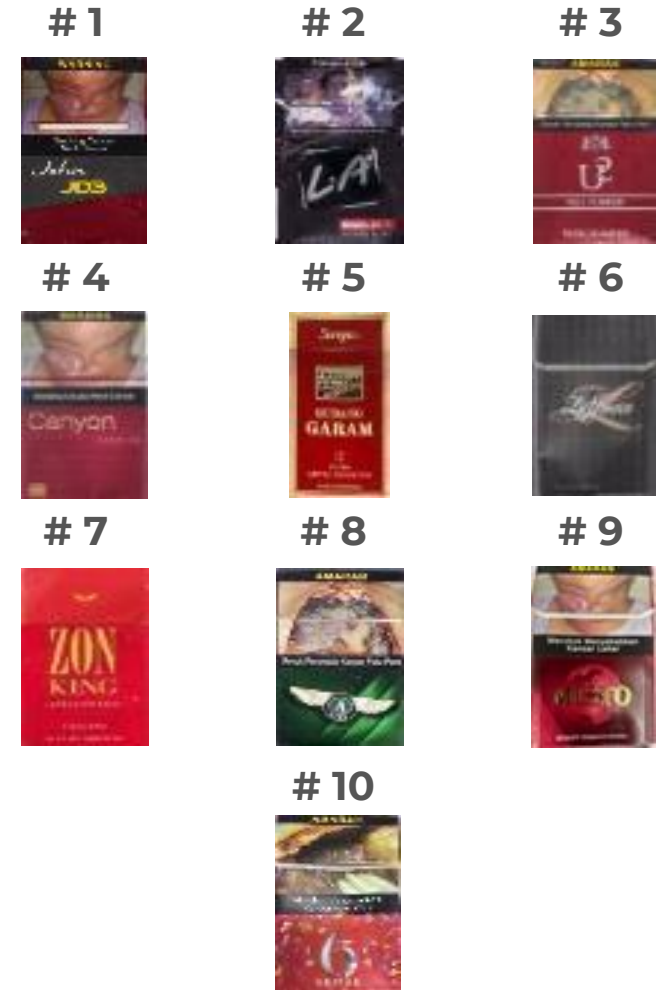
		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	12.9	11.0	12.3
2.	D&J	3.9	2.0	3.7
3.	Misto*	3.1	2.5	1.7
4.	9 th Century*	2.3	2.6	1.7
5.	Canyon	1.6	1.8	1.8
6.	Manchester*	1.6	1.1	1.8
7.	Concept*	1.3	2.8	2.2
8.	Pragon*	1.0	2.5	1.4
9.	Gudang Garam	0.8	0.4	0.7
10.	Promax*	0.6	0.5	0.8
Top 10 Total		45.3	42.7	41.8
<i>Other Illegal</i>		2.5	3.8	5.0
Total Illegal %		33.2	33.3	34.4



Top 10 Illegal Cigarettes Brands* For Selangor

- Volume contribution to National = 16%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	8.1	9.6	10.9
2.	L.A.	6.2	7.1	4.8
3.	U2	5.7	5.2	7.0
4.	Canyon	4.8	4.0	4.9
5.	Gudang Garam	4.6	5.4	6.3
6.	Luffman	3.8	3.2	3.1
7.	Zon King	3.1	1.8	2.0
8.	A380*	2.5	1.7	1.4
9.	Misto*	1.0	1.2	0.9
10.	6 th Sense	0.7	0.8	0.5
Top 10 Total		40.5	40.0	41.8
<i>Other Illegal</i>		<i>4.2</i>	<i>4.1</i>	<i>3.5</i>
Total Illegal %		44.7	44.1	45.3

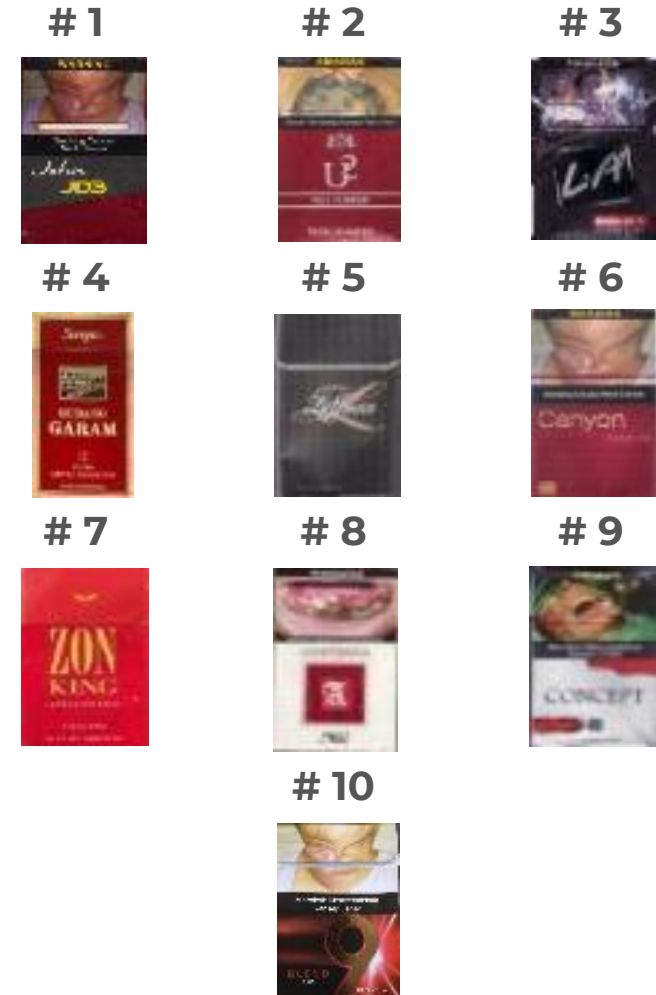


Top 10 Illegal Cigarettes Brands* For WP KL

- Volume contribution to National = 7%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	9.4	10.7	11.0
2.	U2	7.8	7.4	7.3
3.	L.A.	6.6	7.7	5.0
4.	Gudang Garam	4.9	4.6	4.4
5.	Luffman	4.1	5.1	4.4
6.	Canyon	3.8	2.9	3.9
7.	Zon King	2.8	1.7	3.2
8.	Sampoerna	1.2	0.6	0.6
9.	Concept*	0.2	-	0.2
10.	9th Century*	0.2	-	0.1
Top 10 Total		41.0	40.7	40.1

<i>Other Illegal</i>		1.1	1.5	1.3
Total Illegal %		42.1	42.2	41.4



Top 10 Illegal Cigarettes Brands* For Negeri Sembilan

- Volume contribution to National = 3%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	A380*	9.0	5.3	6.9
2.	Canyon	7.2	7.0	7.9
3.	Misto*	6.5	5.8	6.8
4.	John	5.6	5.5	5.0
5.	Promax*	3.4	0.2	0.5
6.	6 th Sense*	2.8	2.9	2.8
7.	League	1.8	3.9	1.4
8.	Bosston*	1.0	0.4	1.0
9.	Gudang Garam	0.8	1.9	3.0
10.	9 th Century	0.8	0.6	0.5
Top 10 Total		38.9	33.5	35.8
<i>Other Illegal</i>		<i>3.1</i>	<i>5.0</i>	<i>5.5</i>
Total Illegal %		42.0	38.5	41.3



Top 10 Illegal Cigarettes Brands* For Melaka

- Volume contribution to National = 4%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	16.3	4.8	10.7
2.	Bosston*	13.3	9.7	4.9
3.	Misto*	7.4	4.5	4.1
4.	Pragon*	5.2	1.9	1.3
5.	Canyon	4.6	5.4	7.7
6.	Galaxy*	1.8	0.5	0.8
7.	Gudang Garam	1.5	1.9	2.2
8.	SOHO*	1.4	8.3	7.6
9.	Touro	0.8	0.8	0.3
10.	Concept*	0.7	0.4	0.7
Top 10 Total		53.0	38.2	40.3
<i>Other Illegal</i>		3.2	12.9	8.9
Total Illegal %		56.2	51.1	49.2



Top 10 Illegal Cigarettes Brands* For Johor

- Volume contribution to National = 20%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	Canyon	10.9	9.4	13.2
2.	Bosston*	6.6	5.0	3.3
3.	John	5.9	5.4	8.9
4.	Misto*	4.4	4.7	2.9
5.	D&J	4.3	3.9	1.8
6.	NYX	4.3	3.8	1.9
7.	U2	3.7	2.9	5.8
8.	Gudang Garam	3.5	4.3	4.7
9.	Pragon*	2.3	1.1	1.2
10.	Concept*	1.8	1.8	1.3
Top 10 Total		47.7	42.3	45.0
<i>Other Illegal</i>		9.3	13.7	11.0
Total Illegal %		57.0	56.0	56.0



Top 7 Illegal Cigarettes Brands* For Pahang

- Volume contribution to National = 14%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	34.7	25.7	29.4
2.	Gudang Garam	14.9	9.2	9.4
3.	Bosston*	13.5	12.3	7.3
4.	U2	12.4	14.8	11.7
5.	Canyon	4.9	9.1	11.7
6.	Misto*	0.2	0.4	0.6
7.	Zon King	0.1	0.4	0.4
Top 7 Total		80.7	71.9	70.5
<i>Other Illegal</i>		-	7.9	7.2
Total Illegal %		80.7	79.8	77.7



Top 10 Illegal Cigarettes Brands* For Terengganu

- Volume contribution to National = 4%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	41.5	40.2	39.2
2.	Misto*	5.8	2.7	1.7
3.	Saat	5.5	3.7	4.5
4.	Pragon*	3.0	2.5	4.3
5.	U2	2.8	5.3	4.2
6.	Gudang Garam	2.7	3.1	4.3
7.	Bosston*	2.1	0.2	1.7
8.	Premium	1.4	1.1	1.5
9.	Canyon	1.1	1.9	1.2
10.	A380*	0.8	1.0	0.6
Top 10 Total		66.7	61.7	63.2
<i>Other Illegal</i>		3.8	4.0	5.2
Total Illegal %		70.5	65.7	68.4



Top 10 Illegal Cigarettes Brands* For Kelantan

- Volume contribution to National = 3%

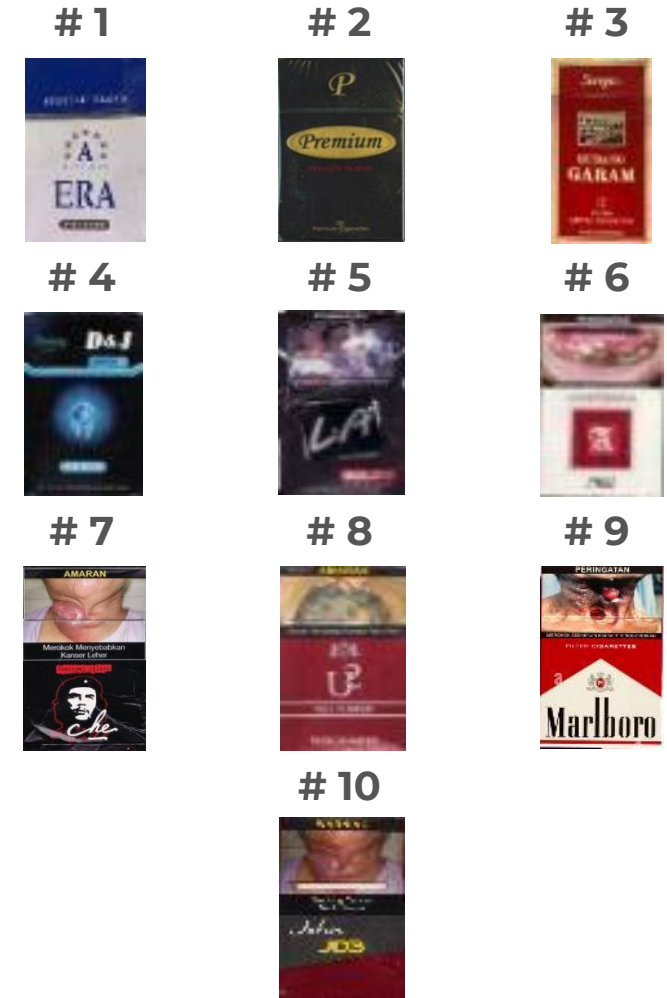
		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	John	31.4	29.7	32.2
2.	Saat	25.4	20.7	17.6
3.	Lee	1.8	-	0.9
4.	Gudang Garam	0.6	3.7	2.4
5.	Galaxy*	0.5	-	0.0**
6.	Pragon*	0.2	0.3	0.1
7.	Concept*	0.1	0.5	0.8
8.	Premium	0.1	-	1.5
9.	Tiara	0.1	0.1	0.1
10.	Luffman	0.1	-	-
Top 10 Total		60.3	55.0	55.6
<i>Other Illegal</i>		-	0.1	1.3
Total Illegal %		60.3	55.1	56.9



Top 10 Illegal Cigarettes Brands* For Sabah

- Volume contribution to National = 11%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	Era	71.7	69.7	73.1
2.	Premium	2.9	5.1	2.2
3.	Gudang Garam	1.7	0.1	0.1
4.	D&J	1.1	2.2	0.7
5.	L.A.	0.8	0.3	1.8
6.	Sampoerna	0.2	-	0.0**
7.	Che	0.2	-	0.0**
8.	U2	0.1	0.1	0.0**
9.	Marlboro	0.1	-	0.0**
10.	John	0.1	0.1	0.0**
Top 10 Total		78.9	77.6	77.9
<i>Other Illegal</i>		-	0.2	0.5
Total Illegal %		78.9	77.8	78.4



Top 10 Illegal Cigarettes Brands* For Sarawak

- Volume contribution to National = 10%

		Jan, 2024	Nov, 2023	2023
		SOM	SOM	SOM
Illegal Brand		(%)	(%)	(%)
1.	Era	33.7	26.8	27.3
2.	Parkway	25.6	19.8	19.1
3.	Rave	10.2	11.4	13.9
4.	L.A.	5.1	1.4	7.5
5.	D&J	1.7	4.0	3.5
6.	S Super	1.5	5.8	1.8
7.	Crystal	1.1	2.7	1.2
8.	Gudang Garam	0.6	0.1	0.5
9.	Devon	0.3	5.8	1.8
10.	Djarum	0.3	-	0.2
Top 10 Total		80.1	77.8	76.8
<i>Other Illegal</i>		<i>0.2</i>	<i>2.1</i>	<i>3.4</i>
Total Illegal %		80.3	79.9	80.2



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

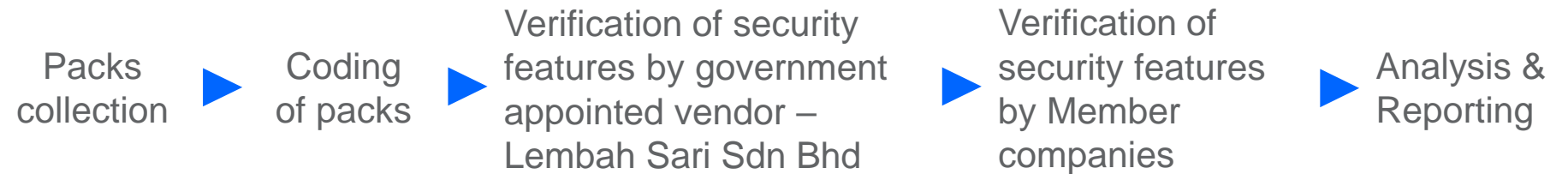
- I. Security features (Tax Stamps)
- II. Brands of Local Manufacturers and Importers registered with Royal Malaysian Customs
- III. Mandated Labeling Requirements (under Control of Tobacco Product Regulations, Trade Description Act, Price Control & Anti Profiteering Act)

Overview Of Study Framework

METHODOLOGY

- Method: **Litter collection of cigarette packs.**
- Frequency: **6 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



ICS Research Methodology & Design

I. ICS Universe, Sample Size

II. Sampling Coverage Of ICS and Fieldwork

III. Coding Processes

IV. Data Processing

V. Weighting The Survey Data

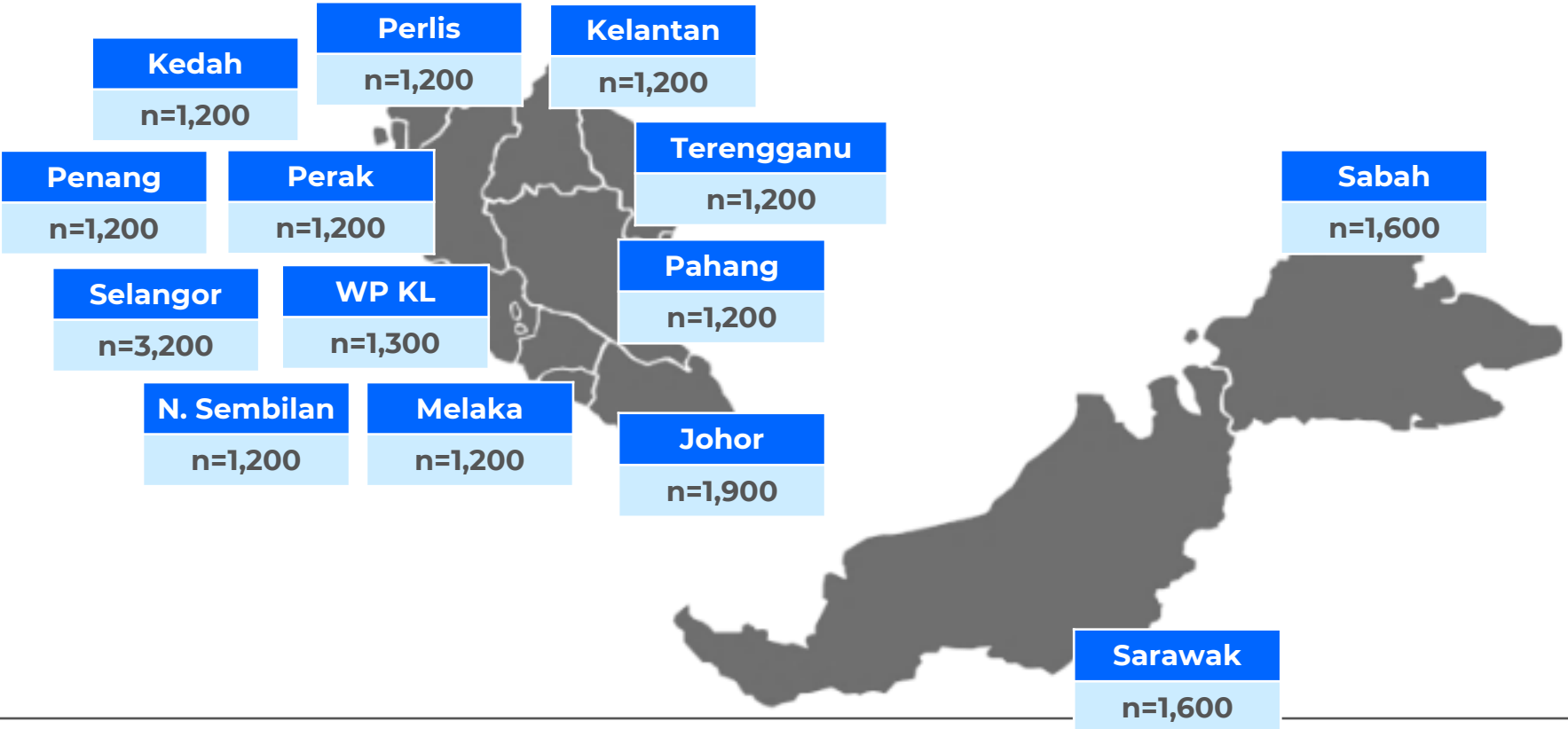
Why Sample Size of 20,000 packs?

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 & Design

I. ICS Universe, Sample Size

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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 & Fieldwork

Establish starting point of collection



Collect 25 packs from the street each week

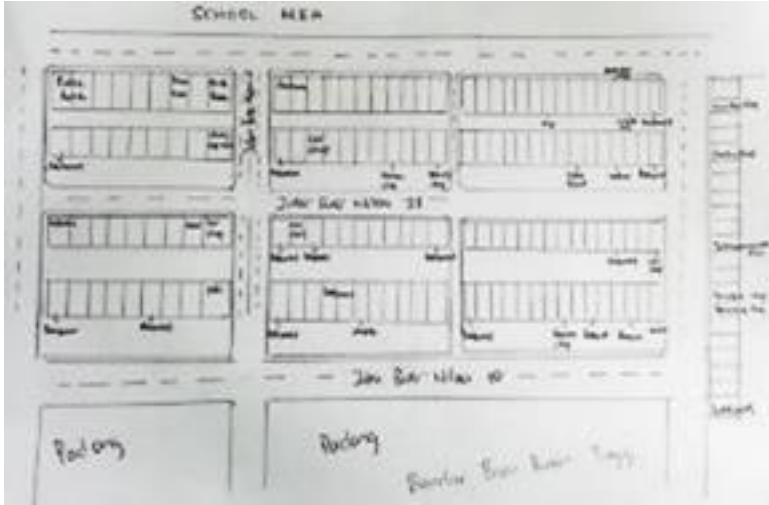


Attach label to bag: Standard label with the following:

- *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 & Design

I. ICS Universe, Sample Size

II. Sampling Coverage Of ICS and Fieldwork

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A Robust SOP For Pack Verification & Coding Process

The following diagram illustrates the pack verification & coding process



Coding & Storage Process At Nielsen HQ



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



Pack Sample

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

Coding & 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 & 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:

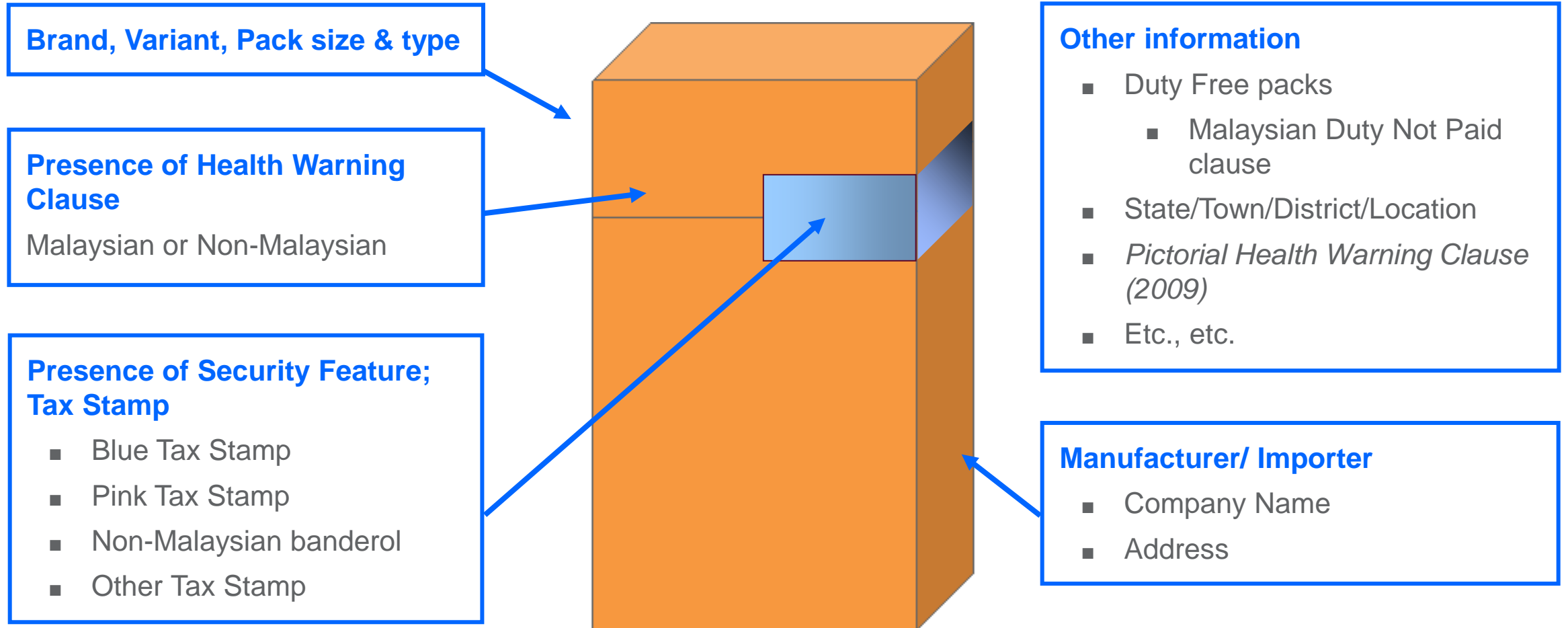
1. Absence of Registered Importers
2. Unregistered Importers*
3. Absence of Registered Manufacturers
4. Unregistered Manufacturers*
5. Packs with counterfeit (fake) Malaysian tax stamp**
6. Packs without Malaysian tax stamp
7. Packs with non-Malaysian tax stamp
8. Unregistered Brand*
9. Non Compliance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

Regulations Set By The Malaysian 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 By 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

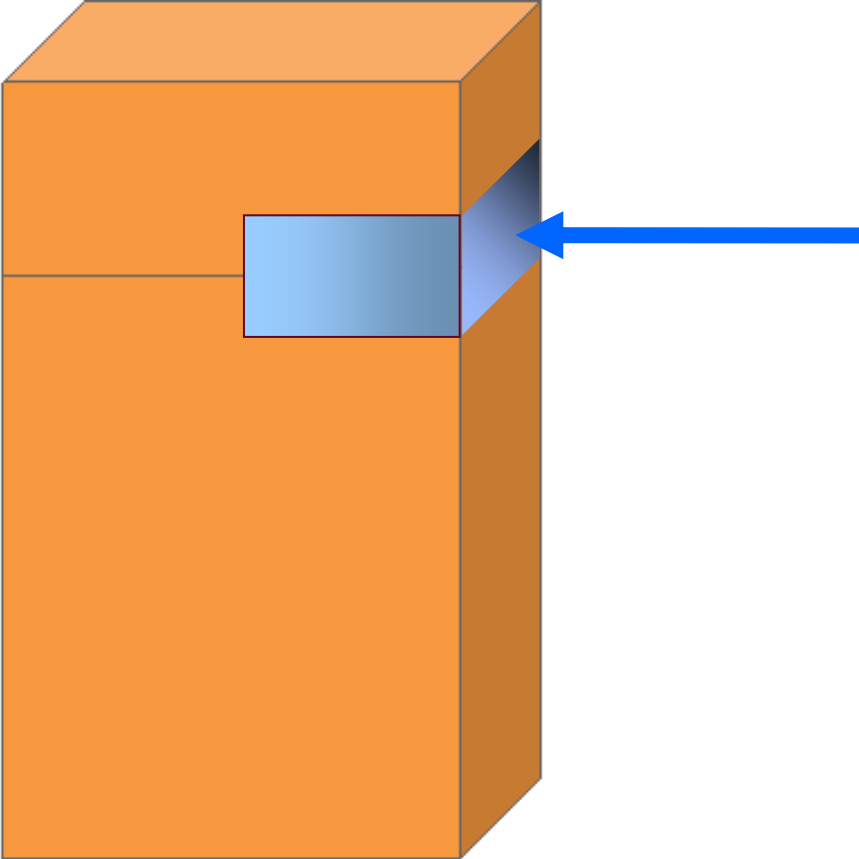
Verification Of Security Tax Stamp

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

1						
2	A	B	C	D	E	H
3	No	Pack ID System	Brand	Pack Size	Security Ink	Remarks (by LSSB)
1	Local Manufact		F = Fake	X = No Ink	G50 = genuine security ink, DF/MY - fake (tamp)	
2						Other Comments
10	7	30720	John	20	F	
11	8	111192	John	20	F	
12	9	110215	John	20	F	
13	10	101121	John	20	F	
14	11	40886	John	20	F	
15	12	40782	John	20	F	
16	13	121022	John	20	F	
17	14	100813	John	20	F	
18	15	121196	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	41050	John	20	F	
29	26	40682	John	20	F	
30	27	40936	John	20	F	
31	28	4167	John	20	F	
32	29	111160	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	4188	John	20	F	



Verification Of Security Tax Stamp



Blue Tax Stamp
(Domestic Market)

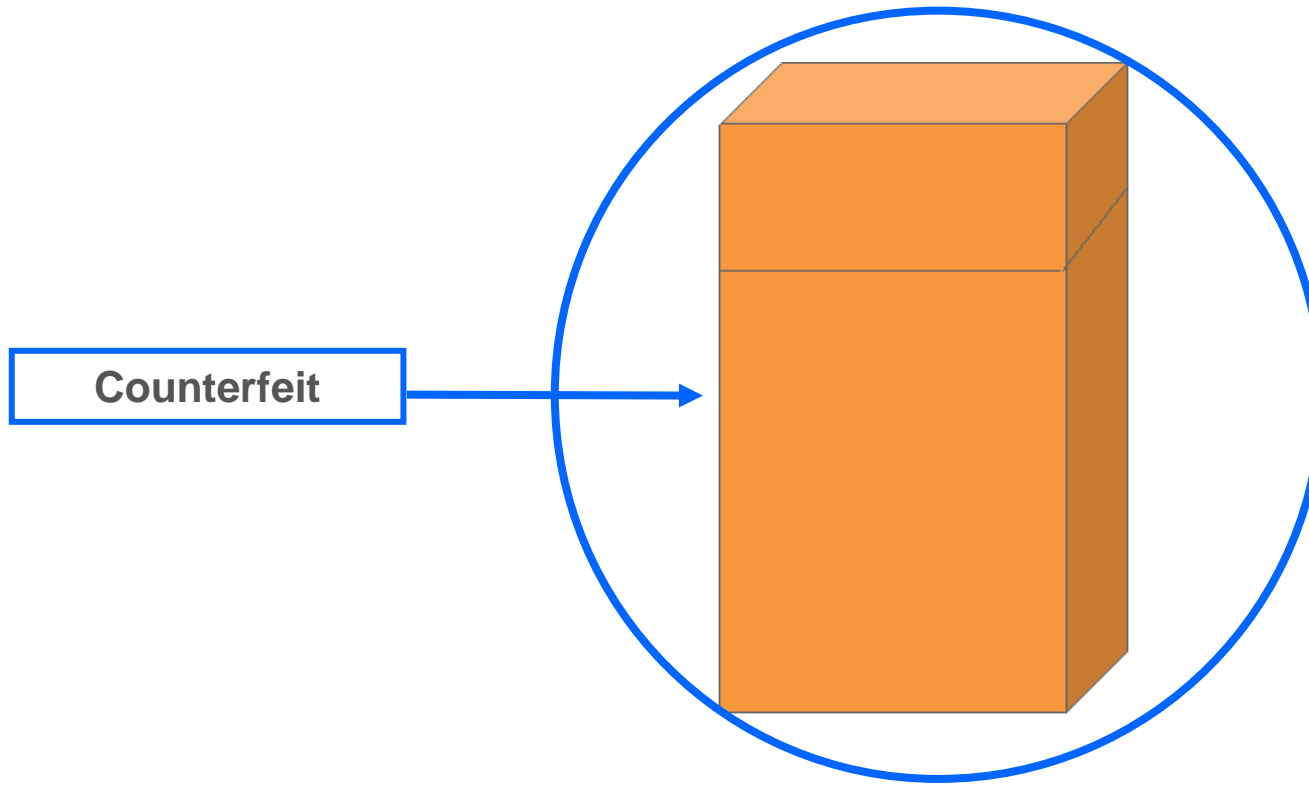
OR



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 & Design

- I. ICS Universe, Sample Size
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- IV. Data Processing**
- V. Weighting The Survey Data

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)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33																																																		
Wave 3	Week 33	03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Dunhill Re	Perlis	Perlis - Ka Urban	Perlis, Kar Jalan Ara, North Per Peter Shy	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Dunhill Re	Perlis	Perlis - Ka Urban	Perlis, Kar Jalan Ara, North Per Dunhill Re	Jin Paser	Jalan Pas East Mela, Dunhill Re	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Winston R	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Dunhill Re	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Dunhill Re	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Dunhill Me	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Dunhill Re	Sabah	Sabah - K Urban	Jin Paser	Jalan Pas East Mela, Dunhill Me	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Gudang G	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Gudang G	Kedah	Kedah - A Urban	Jalan Peg Jalan Peg North Per Marlboro	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Marlboro	Sabah	Sabah - K Urban	Jin Paser	Jalan Pas East Mela, Premium	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Era Prem	Sabah	Sabah - K Urban	Jin Paser	Jalan Pas East Mela, Premium	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Winston R	Kedah	Kedah - A Urban	Jalan Peg Jalan Peg North Per Marlboro	Sabah	Sabah - K Urban	Jin Paser	Jalan Pas East Mela, Premium	Perlis	Perlis - Ka Urban	Perlis, Kar Jalan Ara, North Per Marlboro	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Winston R	Sabah	Sabah - K Urban	Jin Paser	Jalan Pas East Mela, Premium	Kedah	Kedah - A Urban	Jalan Peg Jalan Peg North Per Marlboro
24003	Wave 3, Week 33, 03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Dunhill Re																																																																													
7	Wave 3, Week 33, 03/10/20	Oct-12	Perlis	Perlis - Ka Urban	Perlis, Kar Jalan Ara, North Per Peter Shy																																																																													
36003	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Dunhill Re																																																																													
56	Wave 3, Week 33, 03/10/20	Oct-12	Perlis	Perlis - Ka Urban	Perlis, Kar Jalan Ara, North Per Dunhill Re																																																																													
36008	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Jin Paser, Jalan Pas East Mela, Dunhill Re																																																																													
36004	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Winston R																																																																													
24004	Wave 3, Week 33, 03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Dunhill Re																																																																													
24005	Wave 3, Week 33, 03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Dunhill Re																																																																													
36005	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Dunhill Me																																																																													
24006	Wave 3, Week 33, 03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Dunhill Re																																																																													
36040	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Jin Paser, Jalan Pas East Mela, Dunhill Me																																																																													
36006	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Gudang G																																																																													
36007	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Gudang G																																																																													
36078	Wave 3, Week 33, 03/10/20	Oct-12	Kedah	Kedah - A Urban	Jalan Peg Jalan Peg North Per Marlboro																																																																													
36041	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Jin Paser, Jalan Pas East Mela, Dunhill Me																																																																													
24007	Wave 3, Week 33, 03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Winston R																																																																													
24008	Wave 3, Week 33, 03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Winston R																																																																													
36042	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Jin Paser, Jalan Pas East Mela, Premium																																																																													
36009	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Gudang G																																																																													
36009	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Gudang G																																																																													
36079	Wave 3, Week 33, 03/10/20	Oct-12	Kedah	Kedah - A Urban	Jalan Peg Jalan Peg North Per Marlboro																																																																													
36010	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Marlboro																																																																													
36043	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Jin Paser, Jalan Pas East Mela, Premium																																																																													
36011	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Sabah, Ko Likas - Ton East Mela, Era Prem																																																																													
36044	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Jin Paser, Jalan Pas East Mela, Premium																																																																													
24009	Wave 3, Week 33, 03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Winston R																																																																													
3609	Wave 3, Week 33, 03/10/20	Oct-12	Kedah	Kedah - A Urban	Jalan Peg Jalan Peg North Per Marlboro																																																																													
5	Wave 3, Week 33, 03/10/20	Oct-12	Perlis	Perlis - Ka Urban	Perlis, Kar Jalan Ara, North Per Marlboro																																																																													
24010	Wave 3, Week 33, 03/10/20	Oct-12	Johor	Johor - Ba Urban	Johor, Bar Taman Bc South [Joh Winston R																																																																													
36005	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Jin Paser, Jalan Pas East Mela, Premium																																																																													
3681	Wave 3, Week 33, 03/10/20	Oct-12	Kedah	Kedah - A Urban	Jalan Peg Jalan Peg North Per Marlboro																																																																													
36006	Wave 3, Week 33, 03/10/20	Oct-12	Sabah	Sabah - K Urban	Jin Paser, Jalan Pas East Mela, Premium																																																																													

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 & Design

- I. ICS Universe, Sample Size
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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**)

	Jan, 2024	
	('000 sticks)	
CMTM Member Companies (BATM, PMM, JTI)	509,189	Derive from actual in-market sales as provided by CMTM member companies
Other Local manufacturers	0	
Malaysian Duty Free	1,130	ICS volume estimation is used as substitute since actual data is not available
Total Legal Cigarettes Sales	510,319	

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 589,794,000 sticks

	IN-MARKET SALES BY CMTM	STATE'S LEGAL VOLUME CONTRIBUTION
PERLIS	3,404	0.6%
KEDAH	23,828	4.0%
PENANG	41,773	7.1%
PERAK	44,205	7.5%
SELANGOR	146,608	24.9%
WP KL	69,480	11.8%
N.SEMBILAN	29,197	5.0%
MELAKA	21,327	3.6%
JOHOR	115,482	19.6%
PAHANG	25,572	4.3%
TERENGGANU	11,730	2.0%
KELANTAN	16,472	2.8%
SABAH	21,824	3.7%
SARAWAK	18,892	3.2%
NATIONAL	589,794	

Step 2a. (Using In-Market Sales)

State Legal Volume = $\frac{\text{State's In-Market Volume}}{\text{National Volume}}$ Contribution
 (e.g. $146,608 / 589,794 = 24.9\%$)

	IN-MARKET SALES	STATE'S LEGAL VOLUME CONTRIBUTION	PROJECTED/ ESTIMATED STATE LEGAL VOLUME
SELANGOR	146,608	24.9%	126,852
NATIONAL	589,794		510,319

Step 2b.

Projected States Legal Volume
 = State Legal Volume Contribution X National Legal Volume
 (derived from In-Market Sales) (obtained from Step 1)

(e.g. $24.9\% \times 510,319 = 126,852$)

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	3,404	0.6%	2,945
KEDAH	23,828	4.0%	20,617
PENANG	41,773	7.1%	36,144
PERAK	44,205	7.5%	38,248
SELANGOR	146,608	24.9%	126,852
WP KL	69,480	11.8%	60,117
N.SEMBILAN	29,197	5.0%	25,263
MELAKA	21,327	3.6%	18,453
JOHOR	115,482	19.6%	99,921
PAHANG	25,572	4.3%	22,126
TERENGGANU	11,730	2.0%	10,149
KELANTAN	16,472	2.8%	14,253
SABAH	21,824	3.7%	18,884
SARAWAK	18,892	3.2%	16,347
NATIONAL	589,794		510,319

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 (Jan'24)	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	1,712	34,240	1,488	27,676	61,916	55.3%	44.7%

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

Top 10 Illegal Cigarettes Brands* For Sarawak

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 (Jan'24)	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	680	13,600	520	9,752	23,352	58.2%	41.8%
KEDAH	1,200	811	16,220	389	7,771	23,991	67.6%	32.4%
PENANG	1,200	615	12,300	585	11,274	23,574	52.2%	47.8%
PERAK	1,200	798	15,960	402	7,948	23,908	66.8%	33.2%
SELANGOR	3,200	1,712	34,240	1,488	27,676	61,916	55.3%	44.7%
WP KL	1,300	724	14,480	576	10,544	25,024	57.9%	42.1%
N.SEMBILAN	1,200	691	13,820	509	10,028	23,848	58.0%	42.0%
MELAKA	1,200	519	10,380	681	13,339	23,719	43.8%	56.2%
JOHOR	1,900	807	16,140	1,093	21,364	37,504	43.0%	57.0%
PAHANG	1,200	216	4,320	984	18,056	22,376	19.3%	80.7%
T'GANU	1,200	348	6,960	852	16,645	23,605	29.5%	70.5%
KELANTAN	1,200	475	9,500	725	14,412	23,912	39.7%	60.3%
SABAH	1,600	333	6,660	1,267	24,928	31,588	21.1%	78.9%
SARAWAK	1,600	308	6,160	1,292	25,096	31,256	19.7%	80.3%

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	148,021	55.9%	264,699	116,678



Step 4a.
 Based on the incidence for legal cigarettes of 51.5% in Selangor, project the total volume for the state
 (e.g. 148,021 divide by 55..9% = 264,699)

Step 4b.
 Illegal volume is established by subtracting the projected total state's volume with the legal volume
 (e.g. 264,699 – 148,021 = 116,678)

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	2,945	58.2%	5,057	2,112
KEDAH	20,617	67.6%	30,495	9,878
PENANG	36,144	52.2%	69,273	33,129
PERAK	38,248	66.8%	57,296	19,048
SELANGOR	126,852	55.3%	229,386	102,534
WP KL	60,117	57.9%	103,893	43,776
N.SEMBILAN	25,263	58.0%	43,594	18,331
MELAKA	18,453	43.8%	42,166	23,713
JOHOR	99,921	43.0%	232,183	132,262
PAHANG	22,126	19.3%	114,606	92,479
TERENGGANU	10,149	29.5%	34,422	24,272
KELANTAN	14,253	39.7%	35,874	21,622
SABAH	18,884	21.1%	89,564	70,680
SARAWAK	16,347	19.7%	82,943	66,596
NATIONAL	510,319		1,170,751	660,432

Divide **National Illegal Volume 660,432** with **National Total Market Volume 1,170,751** **56.4%**

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