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A composite index on the provincial alcohol control policy implementation capacity in Thailand

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Outlines

- Background & Objectives (WHY)
- Methods (HOW)
- Preliminary findings (WHAT)
- Limitations
- Policy recommendations

Why conducting the index on alcohol control policy implementation?

Indices as policy advocacy tools and technical tools to track progress of policy

Added value: Integration of policy implementation into the indices



Sub-national level is the key for implementing alcohol control policies in Thailand

Provincial Governors
(Chair)

Provincial Alcoholic Beverage
Control Committee
(Alcoholic Beverage Control
Act 2008: Control of Physical
availability and advertisement)

Provincial Road Safety
Operations Center
(Implementing Land Traffic
Act 1979: Drink-driving
control and road safety)

Map of Thailand



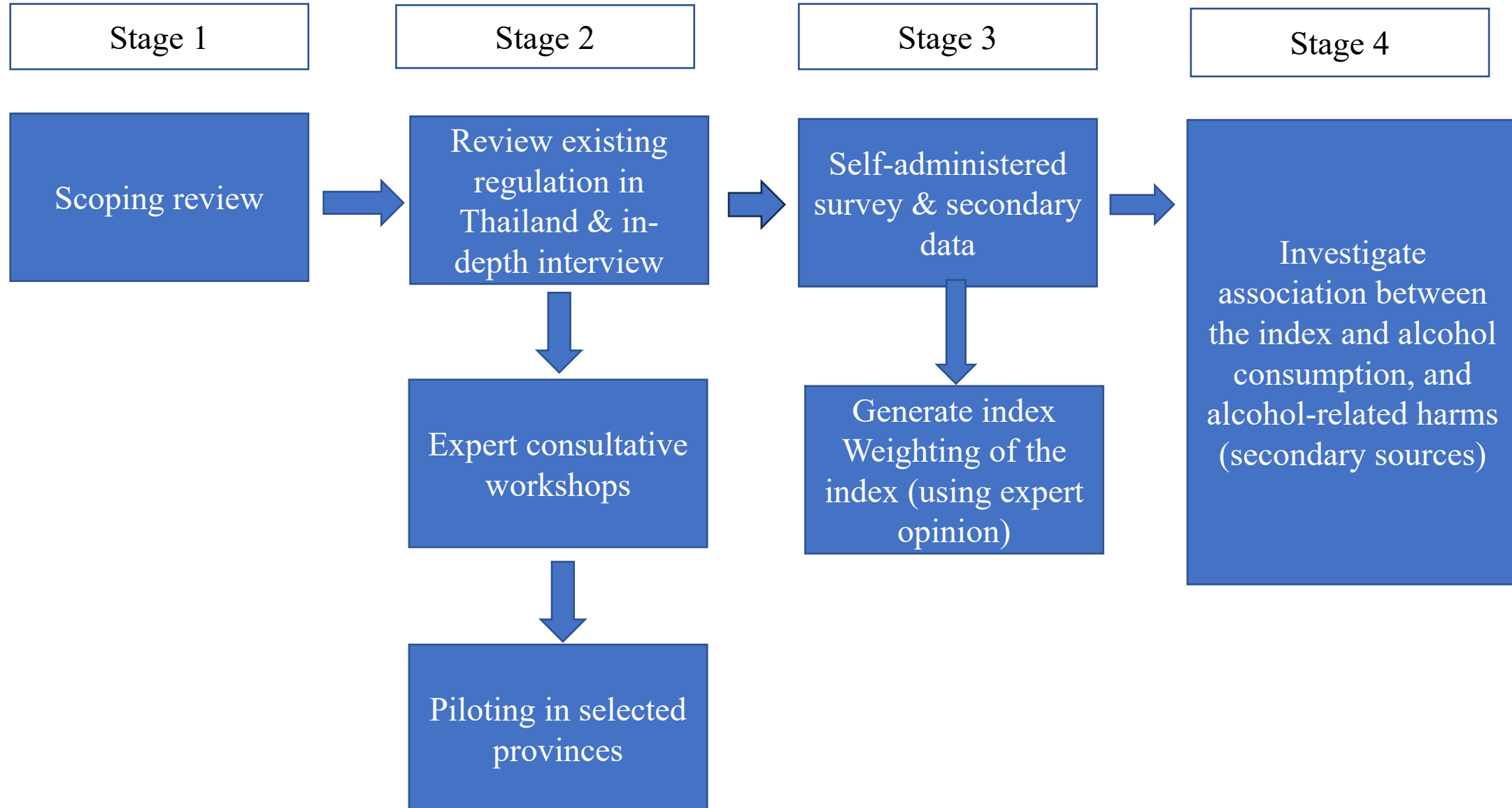
Two committees are multi-sectors responsible for implementing effective policies at provincial levels



Objectives

- The objective of this study is to create a composite index that measures the overall capacity for implementing effective alcohol control policies across all provinces in Thailand.
- Focusing on four main regulatory measures (alcohol advertisement, physical availability, drink-driving and taxation)

Research Flow & Methods



Components of the index

Total number of indicators: 46 indicators (from 4 policies)

- **Policy capacity**
 - Political capacity (e.g. having provincial policies)
 - Technical capacity (e.g. number of lawyers who support law enforcement)
 - Operational capacity (budget of law enforcement per capita)
- **Implementation process** (e.g. capacity building of staff on law enforcement, and frequency of inspecting alcohol outlets)

A composite index on the provincial alcohol control policy implementation capacity in Thailand

Rank	Provinces	scores
1	Nan	79
2	Phitsanulok	79
3	Amnat Charoen	77
4	Sing Buri	76
5	Ranong	76
73	Nonthaburi	47
74	Narathiwat	46
75	Chantaburi	46
76	Nakhon Nayok	40
77	Song Kla	39

There is variation of the index across provinces.

Score 0-100 (0 Least implemented, 100 most implemented)

Association between the index and alcohol consumption patterns and alcohol-related harms

- We found the association between overall index and Alcohol Consumption per Capita (APC).
- There were **statistically significant findings** of association between the **indices** (i.e., index regarding alcohol advertisement, control of physical availability) and **APC and proportion of regular drinkers**.
- **There are no associations** between the **overall index** and indices for specific measures and **alcohol-related harms** (i.e., alcoholic liver cirrhosis and alcohol-related road traffic injuries).

Limitations of the study

- Recall-bias, the key informants were asked to recall before COVID-19.
- We investigated the association between the index and alcohol-related harms in the same year.
- We only focus on the four effective policies.

Policy Recommendations & Ways Forwards



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- Policy recommendation
 - Long term monitoring systems (fewer indicators and feasible to collect)
- Ways forwards
 - Presenting findings to the provincial officers

Acknowledgement

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- Thailand Science Research and Innovation (TSRI) under the Project of the Public Policies, Laws and Non-communicable Diseases in Thailand: An Policy Implementation and System Research

- **Funding to attend the conference:**

- The Capacity Building on Health Policy and Systems Research program (HPSR Fellowship) under cooperation between National Health Security Office (NHSO), Bank for Agriculture and Agricultural Co-operatives (BAAC), and International Health Policy Program Foundation (IHPF)
- Massey University (Massey University Doctoral Conference Grants)

Q&A

Lowest and Highest scores across domains

A	B	C	D	E	F	G	H	I	J	K	L	M	N
province	totalweight_N	scoretax_N	scoredrinkdrive	score_PA_model	scoreadvertise_N	scoreadvertise_inst_1	scoreadvertise_pro_1	score_PA_inst_1	score_PA_pro	scoredrinkdrive_insti	scoredrinkdrive_pro_1	scoretax_inst_1_N	scoretax_pro_1_N
Songkhla	38.65602	45.54818	37.8718	40.04374	31.97965	45.40987	20.58041	45.40987	36.54463	43.61856	28.42268	33.86821	55.10061
Nakhon Nayok	40.29649	18.68322	60.62245	44.29863	34.91743	31.72313	37.62868	31.72313	52.4988	77.25841	33.2067	17.28712	19.82502
Chanthaburi	46.15013	41.3033	53.83596	43.3907	44.99328	50.15684	40.61058	50.15684	38.97866	52.16688	56.66245	34.03937	47.24409
Narathiwat	46.41737	73.84734	41.57256	34.05142	37.92243	42.17901	34.30955	42.17901	28.75162	37.07109	49.0643	58.98588	86.00175
Nonthaburi	46.61473	48.92675	46.72605	52.6722	38.89689	36.76286	40.7082	36.76286	63.0463	37.34355	62.2907	25.31023	68.24147
PathumThani	46.92119	41.62094	41.94369	58.64801	46.26536	46.01631	46.47675	46.01631	66.88483	32.95871	56.84536	34.03937	47.82153
Ubon Ratchathani	49.7412	29.28097	63.34764	55.04519	49.17435	68.25596	32.97834	68.25596	46.43076	57.79481	72.60448	40.84296	19.82502
Nakhon Si Thammarat	49.88779	49.15776	57.61624	45.17766	46.73579	66.60394	29.87221	66.60394	31.20611	49.72328	70.73308	60.05563	40.24497
Samut Songkhram	50.03942	41.05304	56.64069	59.19277	42.92915	53.56546	33.90131	53.56546	62.86221	50.0894	67.53905	33.50449	47.2266

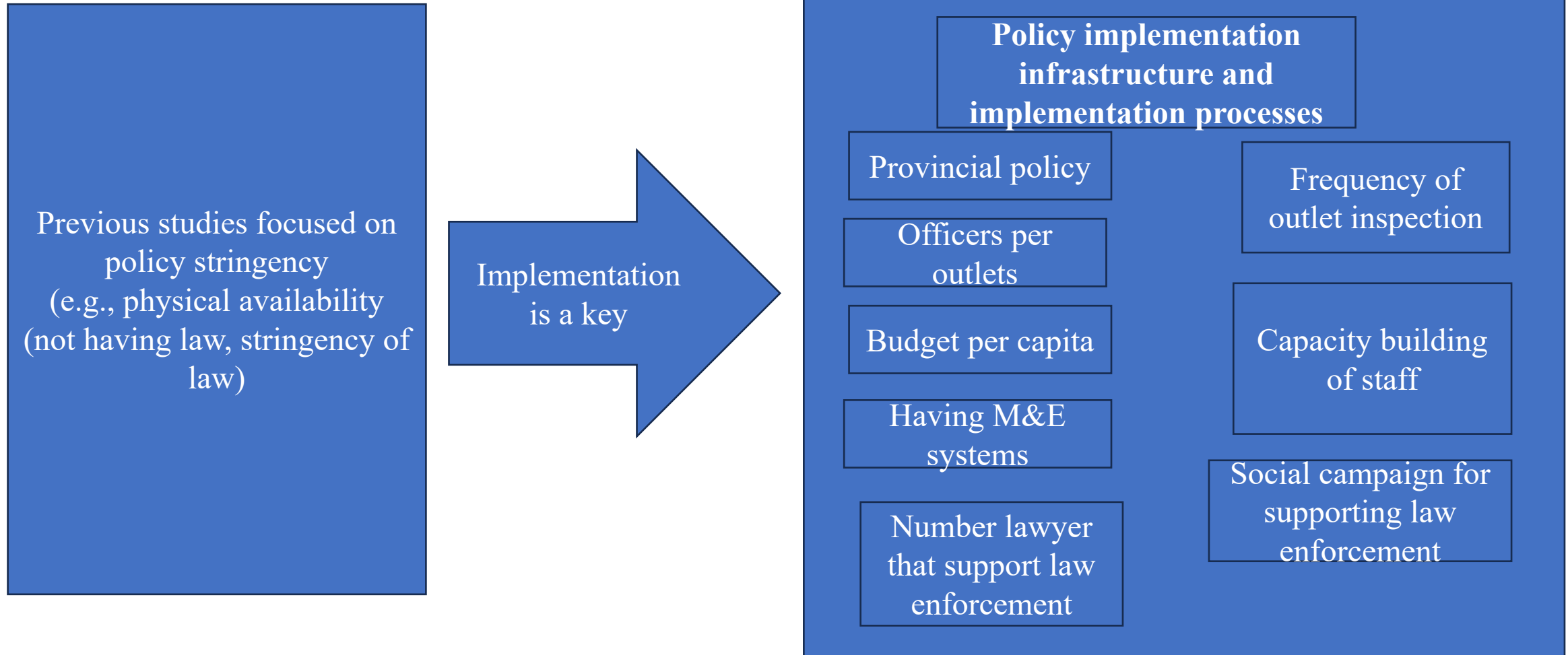
province	totalweight_N	scoretax_N	scoredrinkdrive	score_PA_model	scoreadvertise_N	scoreadvertise_inst_1	scoreadvertise_pro_1	score_PA_inst_1	score_PA_pro	scoredrinkdrive_insti	scoredrinkdrive_pro_1	scoretax_inst_1_N	scoretax_pro_1_N
Yasothon	69.84283	77.63019	76.93123	61.65656	62.81681	74.68633	52.74228	74.68633	53.16015	72.90762	83.67806	74.51862	80.17499
Sakon Nakhon	71.62062	84.76273	68.08228	60.21625	73.80952	77.51987	70.66028	77.51987	48.93298	75.55556	55.81821	74.68977	93.00088
Maharakham	72.59627	78.43874	68.55416	73.54215	70.68452	71.65411	69.86156	71.65411	74.77329	72.39676	62.2907	66.32435	88.34646
Chumphon	73.60405	69.68909	66.79391	79.10527	79.27707	89.93099	70.23429	89.93099	72.04609	79.78714	45.40594	82.88403	58.89764
Sukhothai	74.46589	92.46318	74.97482	65.8289	65.50499	67.06399	64.18176	67.06399	65.02352	82.53725	62.57211	83.24776	99.99999
Surin	74.84913	77.87082	85.15455	65.12731	70.16128	83.06148	59.21193	83.06148	53.43288	82.87781	89.0249	66.49551	87.1741
mae hong son	75.01669	82.5296	67.60511	70.45107	80.13632	92.68089	69.48882	92.68089	55.95555	68.31844	66.51189	100	68.24147
Ranong	75.55546	73.46232	79.43906	75.65928	73.28629	76.18151	70.8289	76.18151	75.31874	82.89484	73.82863	91.27086	58.89764
sing buri	75.75504	85.09	68.86698	75.56023	74.70238	73.31661	75.87859	73.31661	77.02325	66.59856	72.70297	73.98374	94.17323
Amnatcharoen	76.6853	93.10809	88.09183	63.74067	61.65034	63.23714	60.30351	63.23714	64.069	94.40613	77.7684	91.80573	94.17323
Phitsanulok	79.11106	74.34786	76.83049	88.56835	77.20814	97.07236	60.34789	97.07236	83.02312	72.57557	83.95947	83.24776	67.06911
Nan	79.30804	74.34786	85.10152	83.90491	73.54551	96.34045	54.19773	96.34045	75.79601	86.36866	83.11524	91.80573	60.06999

Responses (312/385=81%)

- MoPH 63
- Police 59
- Mitigation and Prevention Office 63
- Excise Department 67
- CSO 60



New areas for generating an index on alcohol control policy



bers	Indicators	
	Policy capacity at provincial levels	
1	Establishment of written policy	1
2	Having policy champion	1
3	Establishment of communication channel	3
4	Having technical support persons	2
	Policy capacity for control of physical availability and alcohol advertisement	
5	Establishment of Sub-Committee of Alcoholic Beverage Control Committee with engaged	1
6	Number of officers who enforces Alcoholic Beverage Control Act regarding physical availability	3
7	Number of officers who support implementation of Alcoholic Beverage Control Act regarding	3
8	Budget for law enforcement per capita	3
9	Having lawyers who provide legal support	2
	Implementation process of alcohol advertisement and control of physical availability	
10	frequency of meeting of provincial committee	4
11	frequency of meeting of sub-committee of provincial committee	4
12	Using evidence-based action, using evidence for decision making, planning, and action	4
13	Number of staff who trained on law content and law enforcement	4
14	Number of activities on providing education/raising awareness for public and outlets	4
	Implementation process : law enforcement of control of physical availability	
15	1.intensity: frequency of outlet inspection regarding alcohol sales in certain places	4
16	intensity: frequency of outlet inspection regarding control of alcohol sales in certain days	4
17	3.intensity: frequency of outlet inspection regarding control of alcohol sales in certain times	4
18	intensity: frequency of outlet inspection regarding control of alcohol sales to underage	4
19	5.coverage: Percentage of outlets that have been inspected by officers regarding restriction	4
20	coverage: Percentage of outlets that have been inspected by officers regarding restriction	4
21	7.coverage: Percentage of outlets that have been inspected by officers regarding restriction	4
22	8.intensity: Percentage of reported cases that have been prosecuted	4

1=political capacity
2=technical capacity
3=operational capacity
4=implementation process

	Implementation process : law enforcement of control of alcohol advertisement	
23	1.intensity: Frequency of law enforcement in social event or festival at provincial level	4
24	2.intensity: Frequency of online monitoring of alcohol advertisement violation	4
25	3. intensity: Frequency of outlet inspection regarding alcohol advertisement control	4
26	4.coverage: Percentage of alcohol outlets have been inspected regarding alcohol advertisement	4
27	5.intensity: Percentage of reported cases that have been prosecuted	4
	Policy capacity : implementation mechanism of drink-driving at provincial level	
28	Establishment of Sub-Committee on Provincial Road Safety Committee on Law enforcement	1
29	Number of officers who enforce drink-driving measures per driving license	3
30	Number of officers who support implementation of drink-driving measures per driving license	3
31	Budget for law enforcement per capita	3
32	Sufficiency of alcohol breathalysers	3
33	Number of alcohol breathalyser per 100 000 driving licenses	3
	Implementation process : implementation process of drink-driving at provincial level	
34	frequency of having agenda on drink-driving in on Provincial Road Safety Committee	4
35	Using evidence-based action, using evidence for decision making, planning, and action	4
36	Number of staff who trained on law content and law enforcement	4
37	Number of activities on providing education/raising awareness for public and outlets	4
	Implementation process : law enforcement of drink-driving measures	
38	Intensity: Frequency of law enforcement (intensity)	4
39	coverage: Percentage of drivers who experienced alcohol breath test	4
	alcohol taxation policy	
	Policy capacity: indicators on mechanism of alcohol taxation	
40	Number of officers who enforces Excise Act 2017 regarding alcohol taxation per alcohol outlet	3
41	Number of officers who support implementation of Excise Act regarding alcohol taxation	3
	Implementation Process	
42	Using evidence-based action, using evidence for decision making, planning, and action	4
43	Number of staff who trained on law content and law enforcement	4
44	Number of activities on providing education/raising awareness for public and outlets	4
45	intensity:Frequency of law enforcement among alcohol outlets	4
46	Coverage: Percentage of outlets that have been inspected by officers	4

1=political capacity
2=technical capacity
3=operational capacity
4=implementation process

Association between the index and alcohol consumption patterns and alcohol-related harms

Variables	APC	Prevalence of adults drinkers	Proportion of binge drinkers	Proportion of regular drinkers	Prevalence of youth drinkers
Overall	-0.08 (-0.14,-0.02)*	0.14 (-0.03, 0.30)	-0.04 (-0.34, 0.26)	-0.26 (-0.54, 0.02)	0.06 (-0.11, 0.23)
Advertisement	-0.06 (-0.11,-0.02)*	0.08 (-0.05, 0.22)	-0.01 (-0.26, 0.23)	-0.28(-0.50,-0.06)*	0.05 (-0.09, 0.19)
Availability	-0.06 (-0.10,-0.01)*	0.08 (-0.05, 0.20)	0.02 (-0.21, 0.25)	-0.30(-0.50,-0.10)*	0.08 (-0.04, 0.21)
Drink-driving	-0.04 (-0.09, 0.01)	0.14 (-0.00, 0.28)	-0.14 (-0.40, 0.12)	-0.06 (-0.31, 0.18)	0.04 (-0.11, 0.18)
Taxation	-0.03 (-0.07, 0.01)	0.04 (-0.07,0.14)	0.01 (-0.18, 0.20)	-0.00 (-0.19, 0.17)	-0.00 (-0.11, 0.10)

The models adjusted for total population (aged 15+), youth population (below 20 years), areas of tourism, regions, percent of Muslim population, percent of population under poverty line, employment rates, alcohol industry, and frequency of seeing CSR

We cannot find associations between the index and alcohol-related harms (i.e., alcoholic liver cirrhosis and alcohol-related road traffic injuries)

Weight Scores

Variable		Mean	Std. Dev.	Min	Max
effectiveness to reduce alcohol consumption					
Alcohol taxation		3.8	1.0	2	5
Alcohol advertisement		4.2	1.0	2	5
Physical available control		4.0	0.9	2	5
Drink-driving policy		4.4	0.8	3	5
effectiveness to reduce alcohol-related harm					
Alcohol taxation		3.6	1.0	2	5
Alcohol advertisement		4.2	1.0	2	5
Physical available control		4.0	0.7	3	5
Drink-driving policy		4.5	0.8	3	5
Policy infrastructure at provincial level					
Establishment of written policy		3.67	0.98	2	5
Having policy champion		4.08	0.79	3	5
Establishment of communication channel		3.50	0.80	2	5
Having technical support persons		3.33	0.89	2	5
indicators on mechanism for alcohol implementation at provincial level affecting level of enforcement					
control of physical availability and alcohol advertisement					
Establishment of Sub-Committee of Alcoholic Beverage Control Committee with engagement of civil society		3.90	0.74	3	5
Number of officers who enforces Alcoholic Beverage Control Act regarding physical availability control per alcohol outlets		3.60	0.70	3	5
Number of officers who support implementation of Alcoholic Beverage Control Act regarding physical availability control per alcohol outlets		2.80	1.03	2	5
Budget for law enforcement per capita		3.50	1.18	1	5
Having lawyers who provide legal support		3.50	1.08	2	5
implementation process related to mechanism that affect level of enforcement, focusing on implementation of alcohol advertisement and control of physical availability at provincial level					
frequency of meeting of provincial committee		3.50	0.97	2	5
frequency of meeting of sub-committee of provincial committee		3.40	0.97	2	5
Using evidence-based action, using evidence for decision making, planning, and action		3.80	0.92	2	5
Number of staff who trained on law content and law enforcement		3.80	0.92	2	5
Number of activities on providing education/raising awareness for public and outlets		3.30	1.34	1	5

Weight scores

Variable	effectiveness to reduce alcohol consumption	Mean	Std. Dev.	Min	Max
	law enforcement of control of physical availability to reduce alcohol consumption				
	1.intensity: frequency of outlet inspection regarding alcohol sales in certain places	4.00	0.67	3	5
	intensity: frequency of outlet inspection regarding control of alcohol sales in certain days	3.60	0.84	2	5
	3.intensity: frequency of outlet inspection regarding control of alcohol sales in certain times	3.90	0.99	2	5
	intensity: frequency of outlet inspection regarding control of alcohol sales to underage drinking	4.10	0.57	3	5
	5.coverage: Percentage of outlets that have been inspected by officers regarding restriction of alcohol sales in certain days	3.80	0.92	2	5
	coverage: Percentage of outlets that have been inspected by officers regarding restriction of alcohol sales in certain times	3.90	0.99	2	5
	7.coverage: Percentage of outlets that have been inspected by officers regarding restriction of alcohol sales to underage drinking	4.20	0.63	3	5
	8.intensity: Percentage of reported cases that have been prosecuted	3.70	0.95	2	5
	law enforcement of control of physical availability to reduce alcohol-related harm				
	1.intensity: frequency of outlet inspection regarding control of alcohol sales in certain places	4.11	0.78	3	5
	intensity: frequency of outlet inspection regarding control of alcohol sales in certain days	3.60	0.70	3	5
	3.intensity: frequency of outlet inspection regarding control of alcohol sales in certain times	3.78	0.97	2	5
	intensity: frequency of outlet inspection regarding control of alcohol sales to underage drinking	4.30	0.82	3	5
	5.coverage: Percentage of outlets that have been inspected by officers regarding restriction of alcohol sales in certain days	3.90	0.74	3	5
	coverage: Percentage of outlets that have been inspected by officers regarding restriction of alcohol sales in certain times	3.90	0.88	2	5
	7.coverage: Percentage of outlets that have been inspected by officers regarding restriction of alcohol sales to underage drinking	4.20	0.79	3	5
	8.intensity: Percentage of reported cases that have been prosecuted	3.60	1.07	2	5
	law enforcement of control of alcohol advertisement to reduce alcohol consumption				
	1.intensity: Frequency of law enforcement in social event or festival at provincial level	4.00	0.71	3	5
	2.intensity: Frequency of online monitoring of alcohol advertisement violation	3.78	0.97	2	5
	3. intensity: Frequency of outlet inspection regarding alcohol advertisement control	4.00	1.12	2	5
	4.coverage: Percentage of alcohol outlets have been inspected regarding alcohol advertisement control	4.00	1.00	2	5
	5.intensity: Percentage of reported cases that have been prosecuted	3.89	1.05	2	5
	law enforcement of control of alcohol advertisement to reduce alcohol-related harm				
	1.intensity: Frequency of law enforcement in social event or festival at provincial level	3.89	0.93	3	5
	2.intensity: Frequency of online monitoring of alcohol advertisement violation	3.67	1.00	2	5
	3. intensity: Frequency of outlet inspection regarding alcohol advertisement control	3.89	1.17	2	5
	4.coverage: Percentage of alcohol outlets have been inspected regarding alcohol advertisement control	3.89	1.05	2	5
	5.intensity: Percentage of reported cases that have been prosecuted	3.78	1.09	2	5

Weight scores

Variable	effectiveness to reduce alcohol consumption	Mean	Std. Dev.	Min	Max
	implementation mechanism that affect level of enforcement, for implementation of drink-driving at provincial level				
	Establishment of Sub-Committee on Provincial Road Safety Committee on Law enforcement	4.10	0.74	3	5
	Number of officers who enforce drink-driving measures per driving license	4.10	1.10	2	5
	Number of officers who support implementation of drink-driving measures per driving license	3.80	1.03	2	5
	Budget for law enforcement per capita	4.00	1.15	2	5
	Sufficiency of alcohol breathalysers	4.30	0.67	3	5
	Number of alcohol breathalyser per 100 000 driving licenses	4.30	0.67	3	5
	implementation process related to mechanism for implementation of drink-driving at provincial level				
	frequency of having agenda on drink-driving in on Provincial Road Safety Committee meeting or Sub-Committee on Provincial Road Safety Comm	3.60	1.17	1	5
	Using evidence-based action, using evidence for decision making, planning, and action	3.89	1.05	2	5
	Number of staff who trained on law content and law enforcement	3.80	1.03	2	5
	Number of activities on providing education/raising awareness for public and outlets	3.60	1.17	1	5
	law enforcement of drink-driving measures to results alcohol consumption and alcohol-related harm				
	reducing alcohol consumption				
	Intensity: Frequency of law enforcement (intensity)	4.60	0.52	4	5
	coverage: Percentage of drivers who experienced alcohol breath test	4.20	1.03	2	5
	reducing alcohol-related harms				
	Intensity: Frequency of law enforcement (intensity)	4.70	0.48	4	5
	coverage: Percentage of drivers who experienced alcohol breath test	4.30	1.06	2	5
	alcohol taxation policy				
	indicators on mechanism affecting level of enforcement, focusing on implementation of alcohol taxation at provincial level				
	Number of officers who enforces Excise Act 2017 regarding alcohol taxation per alcohol outlets	4.00	0.89	3	5
	Number of officers who support implementation of Excise Act regarding alcohol taxation per alcohol outlets	3.83	0.98	3	5
	Using evidence-based action, using evidence for decision making, planning, and action	4.00	1.10	2	5
	Number of staff who trained on law content and law enforcement	3.83	1.17	2	5
	Number of activities on providing education/raising awareness for public and outlets	3.33	1.63	1	5
	impact on reducing alcohol consumption				
	intensity:Frequency of law enforcement among alcohol outlets	4.00	0.89	3	5
	Coverage: Percentage of outlets that have been inspected by officers	4.00	0.89	3	5
	impact on reducing alcohol-related harms				
	intensity:Frequency of law enforcement among alcohol outlets	3.71	0.95	3	5
	Coverage: Percentage of outlets that have been inspected by officers	3.71	0.95	3	5

Step for creating the index

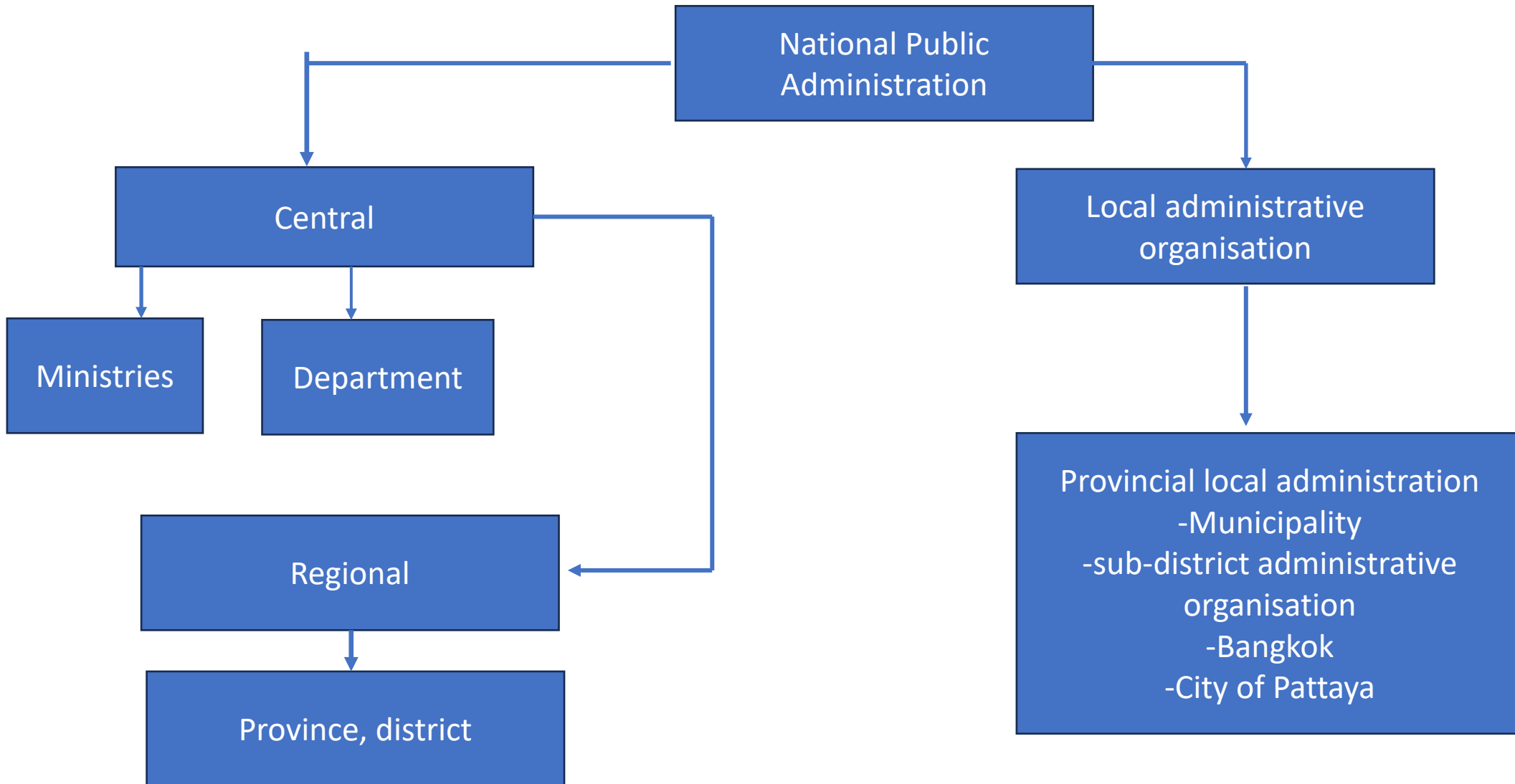
- 1. Conceptualization of the framework
- 2. Selecting and finalization of the indicators/validation of the indicators
- 3. Collection data
- 4. dealing with missing data: neighboring-province replacement, and median replacement
- 5. normalization of data (tertile method)
- 6. generating the index and weight of domain and indicators (expert opinion, and equal weight)



Background

- **Scientific evidence for Policy Changes**
 - Indices are one of policy advocacy tools and technical tools to track the progress of alcohol control policy
 - Majorities of studies that generated alcohol control policy indices, investigated stringency of alcohol policy at national levels, few integrated implementation policy into the index domains
 - None of studies created policy implementation at **sub-national levels where alcohol control laws usually enforce**

Public Administration in Thailand



Indicators

- Political Capacity 4
- Technical Capacity 2
- Operational Capacity 11
- Implementation Process 29

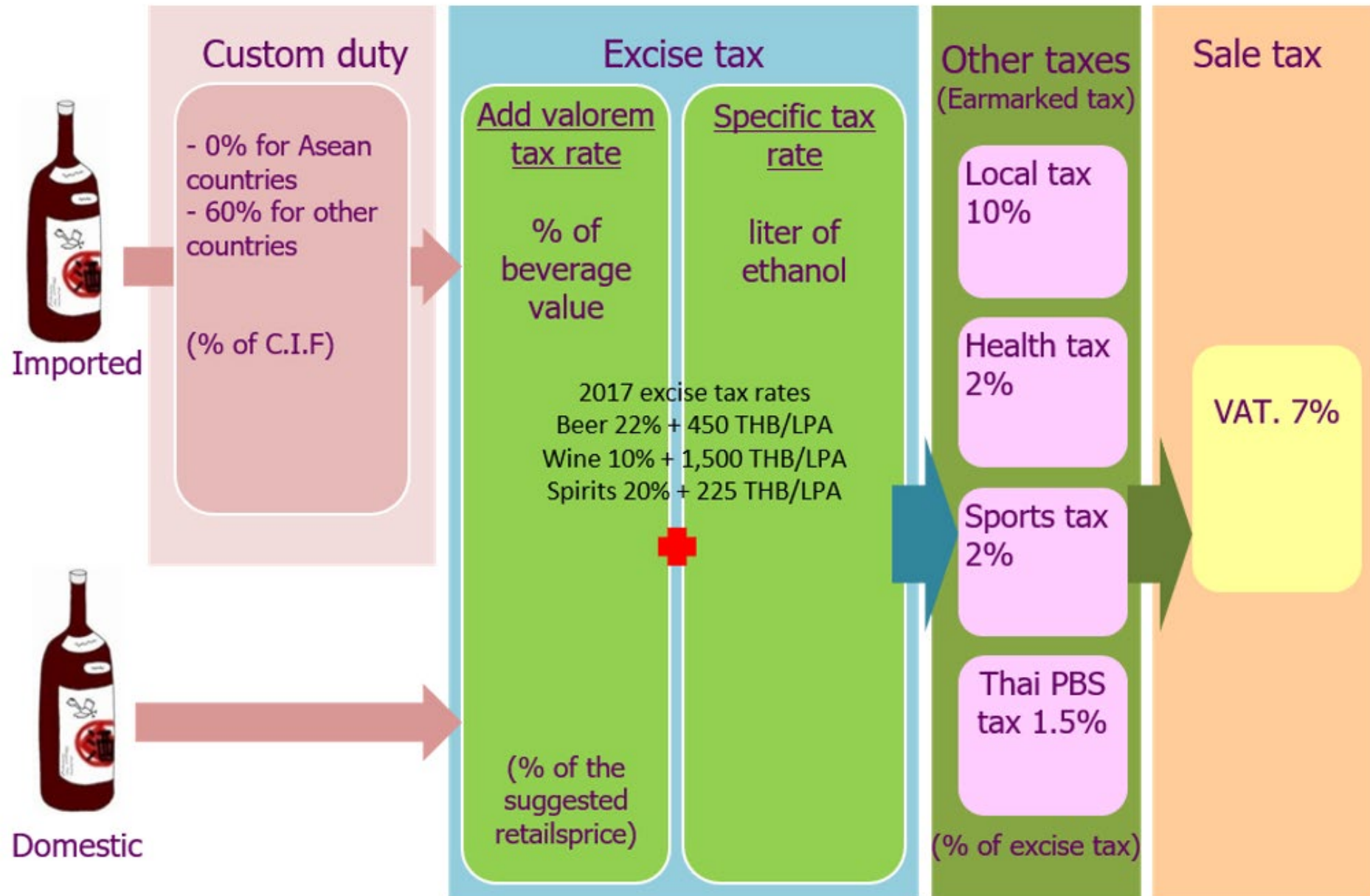


Figure1: Current taxation structure in Thailand

Age standardised alcoholic liver cirrhosis

- Estimated death rates by age group (death/population)
- Using death rates to estimate expected deaths in general population (death rates*population by age group)
- Age standardised aged-standardised mortality (total expected deaths/total population)