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Data Article

Dataset on discarded cigarette packs in Mongolia

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ABSTRACT

This dataset documents the variety of discarded cigarette packs available in Mongolia, specifically in the capital city (Ulaanbaatar) and 2 provinces (Dornod and Bayan Ulgii). Both of these provinces border China and the Russian Federation. Discarded cigarette packs were collected from the ground or from the top of waste bins. Packs were collected over three rounds of data collection (round 1: April 2017, round 2: August/September 2017 and round 3: May/June 2018). 7494 packs were collected in round 1, 5852 packs in round 2 and 6258 packs in round 3. The dataset consists of 25 variables which describe each pack in detail, including information on excise tax stamps, health warnings, tar and nicotine levels, brand name, name of manufacturer, and importer, among others. This data is freely available on the DataFirst data repository (https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/772) after creating a user profile. This data was used for a research article titled "The impact of tax increases on illicit cigarette trade in Mongolia" which was published by *Tobacco Control* in 2019 (https://tobaccocontrol.bmj.com/content/early/2019/06/18/tobaccocontrol-2018-054904). The paper is co-authored by Ross H, Vellios N, Batmunkh T, Enkhtsogt M and Rossouw L.

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Specifications Table

Subject area	Public health
More specific subject area	Tobacco control
Type of data	Excel file
How data was acquired	Discarded empty cigarette packs were collected from the street or from on top of waste bins.
Data format	Raw
Experimental factors	Primary data collection was performed and pack features recorded directly from discarded packs.
Experimental features	This is a stratified two-stage cluster sample, with three rounds of data.
Data source location	Ulaanbaatar, Bayan Ulgii and Dornod; Mongolia.
Data accessibility	This data is available from DataFirst (https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/772). The data is freely available after creating a user profile.
Related research article	Ross H, Vellios N, Batmunkh T, Enkhtsogt M and Rossouw L. The impact of tax increases on illicit cigarette trade in Mongolia. Tobacco Control 2019. In press.

Value of the Data

- The dataset provides an overview of cigarette brands, manufacturers and importers present in Mongolia.
- The dataset can be used to assess which graphic health warnings are most common in Mongolia. The data contains detailed information on graphic health warnings, including their size (in proportion to the total package size) and specific images.
- This dataset can be used to see if the required health warning, nicotine and tar content on cigarette packages are being implemented according to Mongolian laws on cigarette packaging.
- Any additional promotional content displayed on cigarette packs is recorded. This can be used to identify pack design features and marketing strategies that might violate Mongolia's packaging requirements. They can also be used to see what strategies the tobacco industry is now using to market cigarettes.
- The dataset can contribute to global databases on cigarette packs. It compliments existing datasets on cigarette packs, such as the John Hopkins School of Public Health's Tobacco Packs Surveillance System.

1. Data

Discarded cigarette packs were collected in Mongolia over three rounds of data collection: April 2017, August/September 2017 and May/June 2018. Packets were collected in the capital city of Ulaanbaatar (subdivided into districts Bagakhangai, Baganuur, Bayangol, Bayanzurkh, Chingeltei, Khan Uul, Nalaikh, Songinokhairkhan and Sukhbatar), as well as two border-provinces, Bayan Ulgii and Dornod. The districts and the provinces are then further subdivided into Khoroos and Baghs respectively. The 9 districts in Ulaanbaatar consist of a total of 152 Khoroos. Dornod and Bayan Ulgii provinces consist of 10 and 12 Baghs, respectively. 7494 packs were collected in round 1, 5852 in round 2 and 6257 in round 3 (see Fig. 1).

2. Experimental design, materials, and methods

2.1. Survey design

Collecting discarded cigarette packs has been used predominantly in the United States as a method to measure illicit trade [1–4]. However, there are incidences of studies being done in low- and middle-income countries (LMICs), specifically Poland [5] and South Africa [6].

The survey was designed after consulting with a Mongolian partner on the legal requirements of cigarette packs in the country.

2.2. Sample selection and data collection

This is a stratified two-stage cluster sample, with strata defined by region (for Bayan Ulgii and Dornod) and district (for Ulaanbaatar). This amounts to a total of 11 strata. The primary sampling units

Fig. 1. Cigarette pack with tax stamp and 50% graphic health warning (impaired fetal growth).

(PSU) are baghs (Bayan Ulgii and Dornod) or Khoroos (Ulaanbaatar). The secondary sampling units (SSU) is packs. PSU selection is described in depth in Ross et al., 2019. The final number of PSU and SSU selected is displayed in Table 1.

Table 1
Locations where packs were collected.

Strata	Province/City	Districts	Total number of Khoroos/Baghs available	Number of Khoroos/Baghs selected (PSU)	Packets collected in each round (SSU)			
					Round 1	Round 2	Round 3	Total
1	Ulaanbaatar	Bagakhangai	2	2	104	63	82	249
2	Ulaanbaatar	Baganuur	5	2	165	125	167	457
3	Ulaanbaatar	Bayangol	23	8	637	641	806	2084
4	Ulaanbaatar	Bayanzurkh	28	9	723	650	812	2185
5	Ulaanbaatar	Chingeltei	19	6	479	519	528	1526
6	Ulaanbaatar	Khan Uul	16	5	407	378	417	1202
7	Ulaanbaatar	Nalaikh	7	2	61	147	148	356
8	Ulaanbaatar	Songinokhairkhan	32	11	1144	886	936	2966
9	Ulaanbaatar	Sukhbaatar	20	7	555	542	623	1720
10	Bayan Ulgii		13	12	1592	1325	1031	3948
11	Dornod		10	10	1627	576	708	2911

Table 2
List of variables.

Variable name	Description	Round 1		Round 2		Round 3	
		Mean/Proportion	Observations	Mean/Proportion	Observations	Mean/Proportion	Observations
pack_ID	Unique identifier	NA	7494	NA	5852	NA	6258
date_collected	Date packet collected: day/month/year	NA	NA	NA	NA	NA	NA
city/district	The nine districts of Ulaanbaatar (UB, BKh = Bagakhangai, UB, BN = Baganuur, UB, BG = Bayangol, UB, Bz = Bayanzurkh, UB, Ch = Chingeltei, UB, KhU = Khan Uul, UB, Na = Nalaikh, UB, SKh = Songinokhairkhan, UB, SB = Sukhbaatar)	NA	4275	NA	3951	NA	4519
province	Two provinces outside Ulaanbaatar (DO = Dornod, BU = Bayan Ulgii)	NA	3219	NA	1901	NA	1739
number_of_khoroo/bagh	Khoroo (Ulaanbaatar) or Bagh (Dornod and Bayan Ulgii) identifier	NA	7494	NA	5852	NA	6258
brand	Name of brand	NA	7494	NA	5852	NA	6258
tax_stamp	Is there a Mongolian tax stamp? (1 = yes; 0 = no)	81%	7494	82%	5852	88%	6258
signs_of_tax_stamp	Are there marks indicating that a tax stamp was originally on the pack? (1 = yes; 0 = no)	24%	1458	24%	1036	49%	771
foreign_tax_stamp	Is there a foreign tax stamp? (1 = yes; 0 = no)	1%	7494	2%	5852	1%	6258
pw	Does the pack have a pictorial warning? (1 = yes; 0 = no)	98%	7494	98%	5852	99%	6258
pw_50_front	Is the pictorial warning covering 50% of the front of the pack? (1 = yes; 0 is on the pack= no)	98%	7494	98%	5852	99%	6258
pw_50_back	Is the pictorial warning covering 50% of the back of the pack? (1 = yes; 0 is on the pack= no)	98%	7494	98%	5852	99%	6258
pw_type	Which pictorial warning is on the pack? (0 = no health warning, 1=beauty, 2= cancer, 3= impotence, 4= gangrene, 5= smoking kills, 6= impaired fetal growth, Other)	NA	7494	NA	5852	NA	6258
health_warning_in_mongolian	Is the health warning written in Mongolian? (1 = yes; 0 = no)	97%	7494	97%	5852	99%	6258
		99%	7494	99%	5852	100%	6258

health_warning_printed_front_and_back	Is the health warning message printed on front and back of the pack? (1 = yes; 0 = no)						
manufacturer	Name of manufacturer	NA	7494	NA	5852	NA	6258
country_of_manufacturer	Country of manufacturer	NA	7494	NA	5852	NA	6258
importer	Name of importer	NA	5750	NA	5017	5256	6258
country_of_importer	Country of importer	NA	5750	NA	5017	5256	6258
tar	Content of tar per cigarette (measured in milligrams)	7.69	7446	7.23	5839	7.12	6231
nicotine	Content of nicotine per cigarette (measured in milligrams)	0.68	7446	0.62	5838	0.62	6231
sale_in_Mongolia_allowed	A note saying the cigarette is allowed for sale in Mongolia (1 = yes; 0 = no)	74%	7494	83%	5017	83%	5291
promo_content	Does the pack include an additional image, message or other information on the outside or inside of the tobacco box or package to attract the consumers attention? (1 = yes; 0 = no)	41%	7494	50%	5017	57%	5291
promo_content_decription	If yes, describe the image or write the text	NA	3056	NA	2926	NA	3540
other_features	Notes – other features of the pack – e.g. “Duty Free” sign, health warning in a foreign language (e.g. Russian, Chinese), foreign tax stamp, etc.	NA	149	NA	149	NA	74

In order to generate results representing the entire sampled areas, we calculated post-stratification weights by multiplying the inverted probabilities of selecting a Khoroo/Bagh and a pack, taking into account the smoking prevalence and the average number of cigarettes smoked per day by a smoker. The calculation of these weights is explained in appendix 2 of the research article. The weights are available on request.

2.3. Data collection

Discarded cigarette packs were collected either on the ground or at the top of waste bins. Field-workers started collecting packs in the main market/shopping centre in each Khoroo/Bagh. Field-workers stopped when they reached a distance from the starting point where no additional packs were to be found. If the team had not reached the daily quota for the area, they continued to another starting point in the same Khoroo/Bagh. Round 1 fieldworkers kept a detailed diary of their routes and took pictures of the points of departure so that the fieldworkers in round 2 and 3 could follow the same routes. Data capturers recoded pack information into Excel.

2.4. Variable definition

The dataset consists of 25 variables that describe features of the collected cigarette packs (Table 2). The unique-identifier is labeled “pack_ID” and each round of data has an identifying prescript. For example, pack_ID will be w1_pack_ID in round 1, w2_pack_ID in round 2, w3_pack_ID in round 3. Each variable has a prefix depending on which round of data the variable refers to.

2.5. Storage of cigarette packs

The cigarette packs collected during all 3 rounds will be stored at the National Cancer Council of Mongolia, Ulaanbaatar, Mongolia for 2 years following final data collection (June 2018).

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Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.dib.2019.104452.

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