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Data Article

Random number datasets generated from statistical analysis of randomly sampled GSM recharge cards

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ABSTRACT

In this article, a random number of datasets was generated from random samples of used GSM (Global Systems for Mobile Communications) recharge cards. Statistical analyses were performed to refine the raw data to random number datasets arranged in table. A detailed description of the method and relevant tests of randomness were also discussed.

Specifications Table

Subject area	Statistics
More specific subject area	Random Sampling
Type of data	Table
How data was acquired	Collected at random from particular used GSM recharge cards

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Data format	Raw
Experimental factors	Test for randomness
Experimental features	Analysis of Variance (ANOVA), Chi-square test of goodness of fit, Chi-square test of independence
Data source location	Covenant University Mathematics Laboratory, Ota, Nigeria.
Data accessibility	All the data are in this data article.

Value of the data

- Can be used for educational purposes.
- The method of generation of the data and the data itself will be very helpful in low and middle-income countries where there are little or no computational random number generator for scientific purposes. This is because access to recharge cards is more likely than access to internet in those countries where there is inadequate access to internet to download large datasets caused by either epileptic power supply or lack of internet access. Some of the countries have inadequate internet infrastructure. Even when mobile phones are available, they cannot be compatible with the volume of datasets. See [1]. Also in low and middle-income countries, access to used recharged cards are at no or little cost.
- This research can serve as a cheap way of leveraging on the strong computational algorithms used by GSM companies to generate random datasets. The algorithms are assets through which revenue is accrued through the sale of recharge cards.

1. Data

The datasets are the table of random numbers in the raw excel file and the data grouped in four digits in the pdf file. The statistical tests for randomness are indications of the confidence in the reliability of the data for any given purpose.

2. Experimental design, materials and methods

Every attempt to construct a random number table must take into account that the table must be independent on any row or column. Furthermore, the data will not be found to follow any observed pattern(s). See [2–10] for details on other methodologies and results. The choice of using the used recharge cards of GSM network operator was based on the fact that their recharge cards are produced

Table 1
The frequency distribution of the digits of the raw datasets.

	A	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	**Total**
0	47	47	42	38	30	42	35	31	34	37	35	42	35	37	37	48	617
1	35	37	45	34	46	41	37	34	40	41	47	38	29	43	47	40	634
2	51	41	31	38	35	38	41	41	41	33	42	42	46	48	42	39	649
3	40	34	40	47	35	36	42	40	39	34	41	30	30	40	37	32	597
4	36	41	31	36	42	28	46	42	43	41	37	40	42	33	35	40	613
5	38	35	41	40	39	35	28	51	34	42	44	33	47	32	32	29	600
6	39	36	29	31	34	47	36	30	39	46	40	35	42	37	39	36	596
7	39	39	42	33	43	41	42	46	34	38	37	36	40	42	50	41	643
8	54	38	37	44	36	42	38	34	35	36	36	40	35	37	31	38	611
9	1	32	42	39	40	30	35	31	41	32	21	44	34	31	30	37	520