

Leigh Coney¹, Amy Peacock¹, Daan van der Gouwe², Laura Smit-Rigter², Nadia Hutten², Mireia Ventura³, Adrià Quesada³, Monica J. Barratt⁴, 1

¹ National Drug and Alcohol Research Centre, UNSW Sydney, NSW, Australia, ² Drugs Information and Monitoring System (DIMS), Trimbos Institute, Netherlands Institute of Mental Health and Addiction, Utrecht, the Netherlands, ³ Energy Control (ABD). Barcelona (Spain) C/ Llibertat, 27. 08012 Barcelona, Spain, ⁴ Social Equity Research Centre and Digital Ethnography Research Centre, RMIT University, Melbourne, Vic, Australia.

Background

- Illicit drug use can cause significant harms, with composition of drugs a critical factor (1). Strength and adulteration affect risk.
- Cryptomarkets may yield higher strength, less adulterated drugs due to transparency, competition, and customer feedback (2).

Aim

- To compare matching advertised substance, strength and adulteration of drugs from cryptomarkets vs offline.

Methods

- **Data:** Drug checking services in Netherlands (DIMS) and Spain (Energy Control) from 2016-2021.
- **Cases:** MDMA tablets (n=36,065), MDMA powder (n=6,179), cocaine (n=11,419), amphetamine (n=6,823), methamphetamine (n=293), LSD (n=1,817).
- **Measures:**
 - Matching advertised substance (containing any amount of expected drug)
 - Strength (% , mg, mcg)
 - Any adulteration (yes/no)
 - Number of adulterants
- **Analysis:**
 - Regression models controlling for year and service.

Table 1. Number of samples of substances submitted from cryptomarket and offline sources for each drug type

Drug type	Source	Samples submitted
MDMA Tablets (n=36,065)	Cryptomarket	833
	Offline	35,232
MDMA Powder (n=6,179)	Cryptomarket	522
	Offline	5,657
Cocaine (n=11,419)	Cryptomarket	543
	Offline	10,876
Amphetamine (n=6,823)	Cryptomarket	414
	Offline	6,409
Methamphetamine (n=293)	Cryptomarket	35
	Offline	258
LSD (n=1,817)	Cryptomarket	402
	Offline	1,415

Results

- Cryptomarket drugs **more** likely to match advertised substance for MDMA tablets, powder, cocaine, LSD.
- Cryptomarket MDMA powder, cocaine, methamphetamine **higher** strength. MDMA tablets, amphetamine **lower** strength.
- Cryptomarket MDMA powder, cocaine **less** likely adulterated. Amphetamine, LSD **more** likely adulterated.
- Cocaine from cryptomarkets had **fewer** adulterants

Table 2. Comparison of source for likelihood of matching advertised substance after controlling for year, and service.

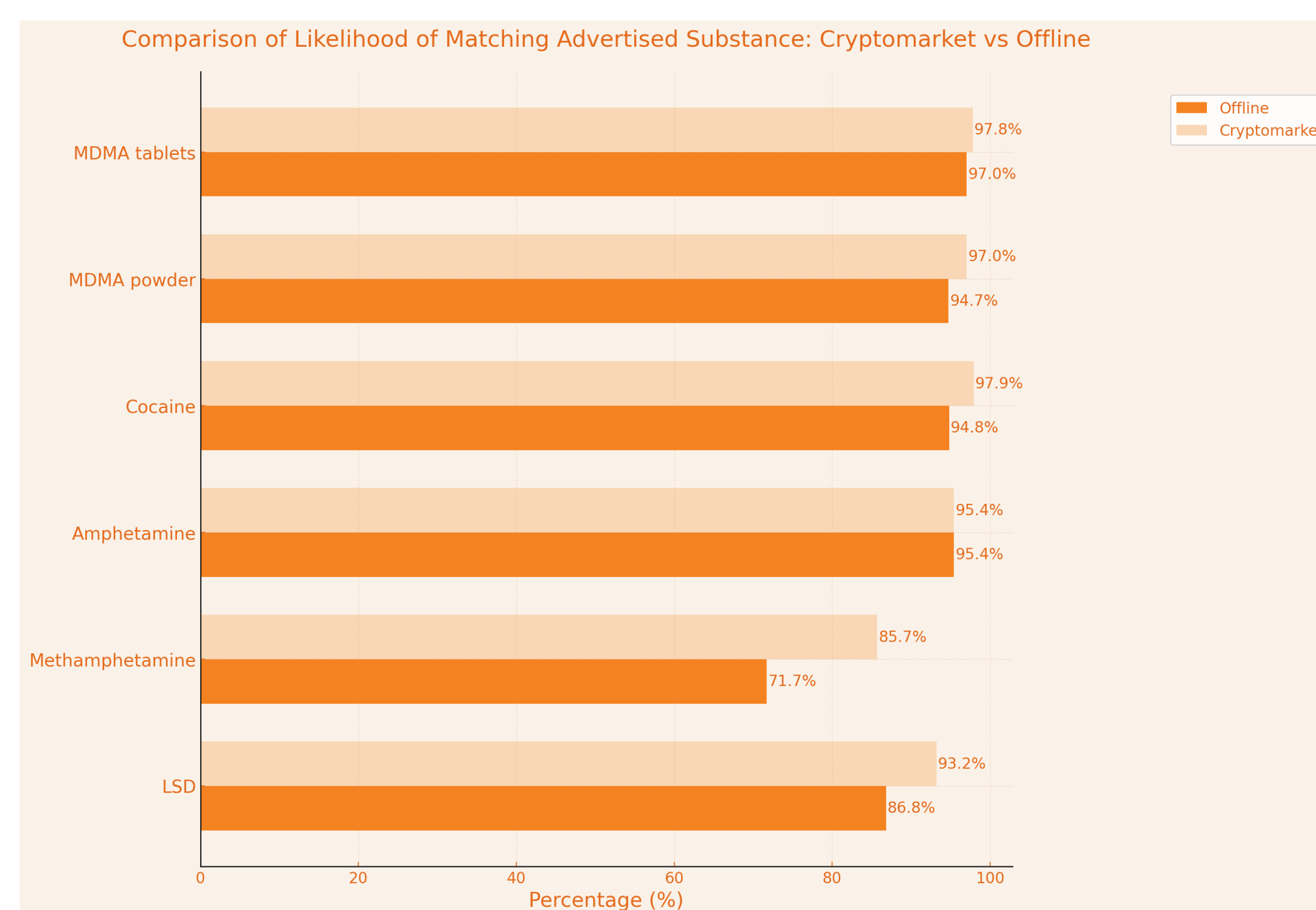


Table 2. Comparison of strength after controlling for year, and service.

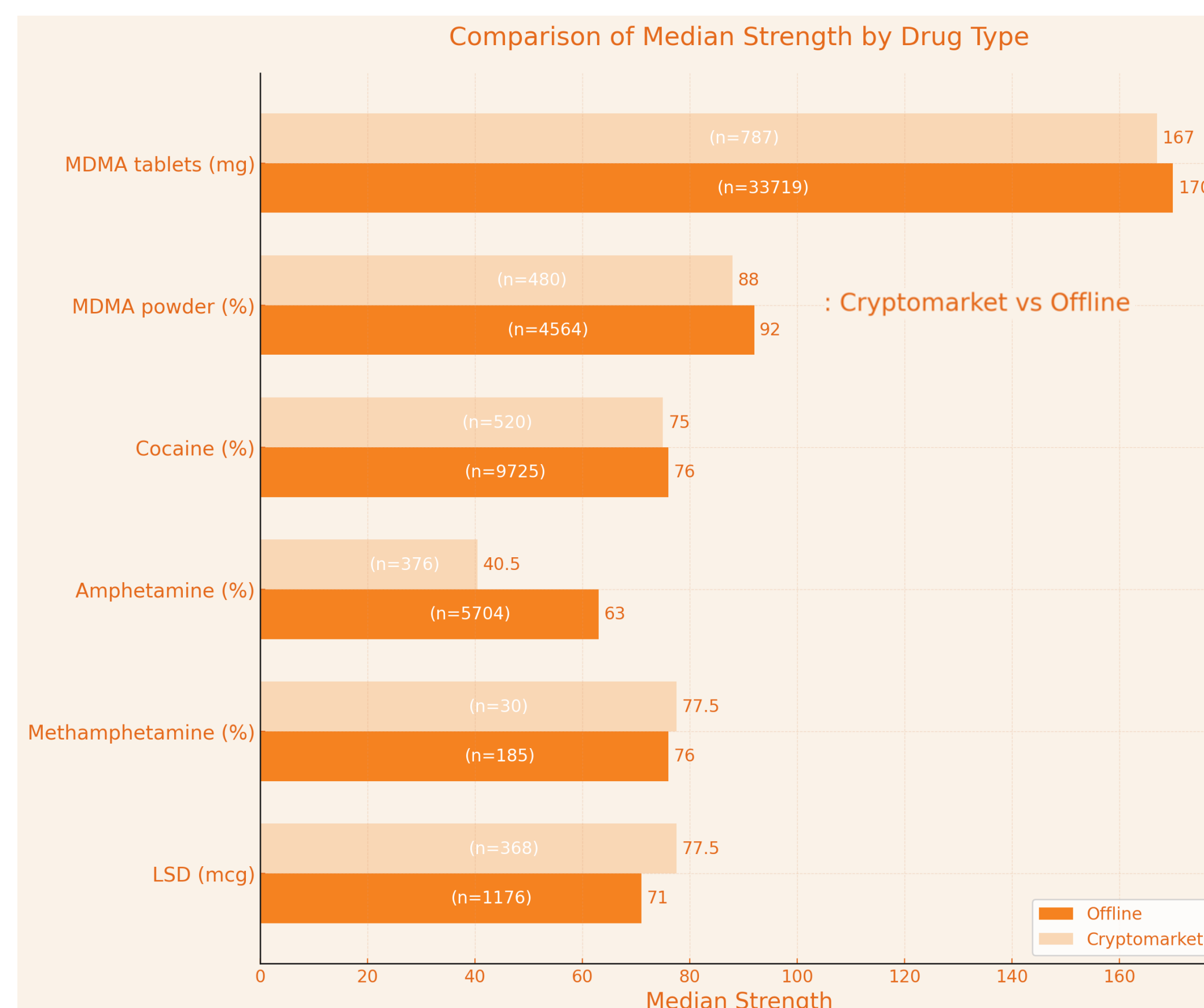
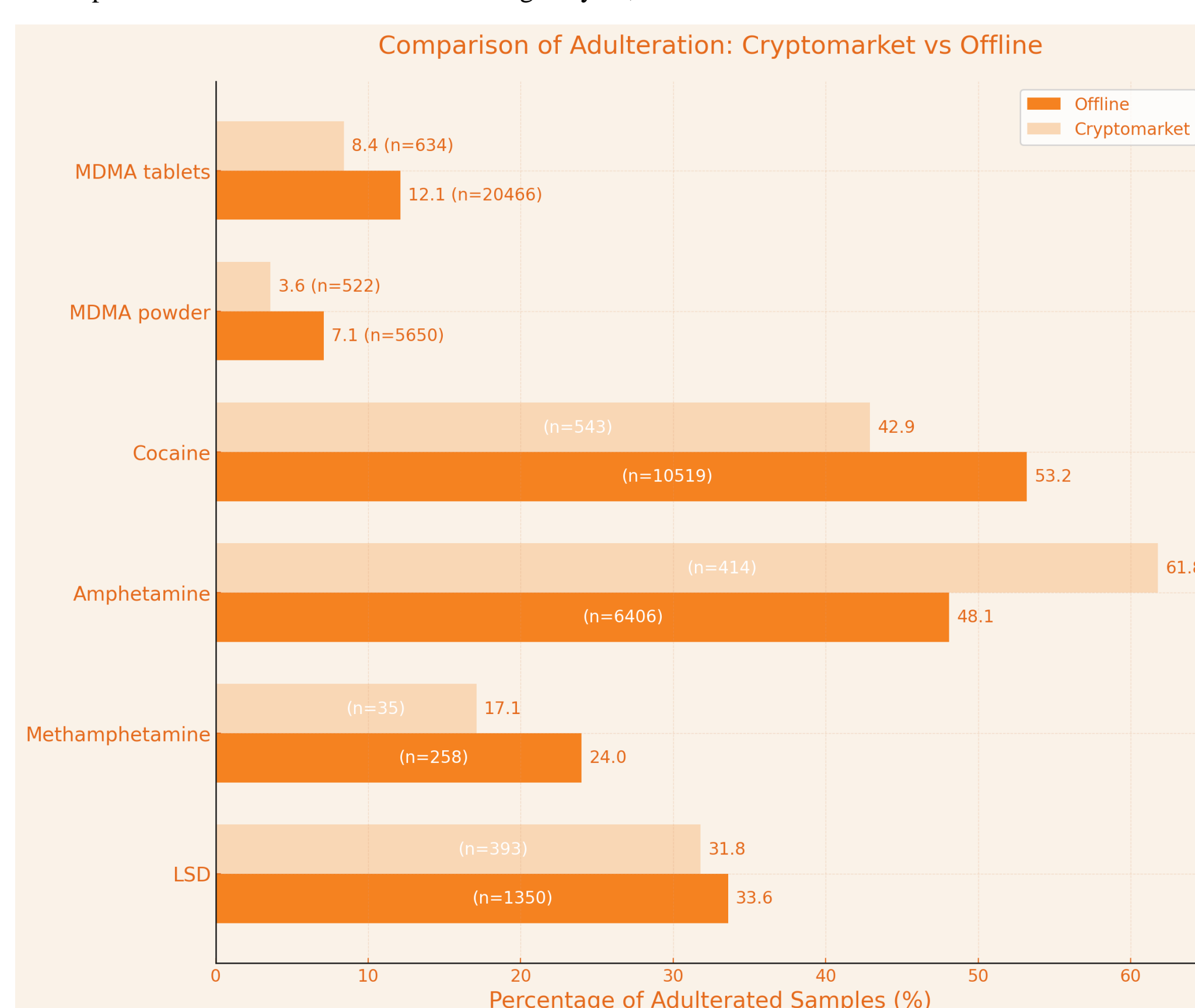


Table 2. Comparison of adulteration after controlling for year, and service.



Implications

- Customer review systems on cryptomarkets may encourage higher strength to attract positive ratings.
- Indicates potential for market dynamics to impact quality.
- Emphasises need for tailored harm reduction by source.
- Suggests expanded drug checking services are vital.

Limitations

- Smaller cryptomarket sample limits diversity.
- Cryptomarket samples can be constrained by a few dominant vendors.
- Samples combine Netherlands and Spain markets.
- Adulteration not weighted by proportion or risk.

Conclusion

- Relationships are drug-specific, highlighting complexity
- Findings indicate transparency and competition may impact quality
- Tailored harm reduction needed based on drug source
- Future research could further explore market dynamics
- Findings support potential benefits of regulated drug production

References

1. Degenhardt L, Hall W. Extent of illicit drug use and dependence, and their contribution to the global burden of disease. *The Lancet*. 2012;379(9810):55-70.
2. Tzanetakis M, Kamphausen G, Wersé B, von Laufenberg R. The transparency paradox. Building trust, resolving disputes and optimising logistics on conventional and online drugs markets. *International Journal of Drug Policy*. 2016;35:58-68.