**Research report**

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ENERGY THEFT

# Energy Theft: A Full Research Brief

## **Abstract**

Energy theft—most commonly the unauthorized consumption of electricity via illegal connections, meter bypass/tamper, and billing fraud—is a major driver of non-technical losses (NTL) in power systems. It erodes utility revenues, degrades network reliability, raises tariffs for honest consumers, and creates severe safety risks. This brief defines the problem, quantifies its scale, reviews methods of theft and their impacts, surveys detection & deterrence approaches (from audits and AMI analytics to modern ML), outlines legal/policy frameworks with a Nigeria-focused case study, and closes with a practical, staged mitigation roadmap and research gaps. Key points and recent policy updates are cited. [World Bank PPP](https://ppp.worldbank.org/legislation-regulation/laws/theft-nontechnical-loss?utm_source=chatgpt.com)[PRS Legislative Research](https://prsindia.org/policy/analytical-reports/impact-of-ujwal-discom-assurance-yojana-uday?utm_source=chatgpt.com)[World Bank Open Data](https://data.worldbank.org/indicator/EG.ELC.LOSS.ZS?utm_source=chatgpt.com)[The Guardian Nigeria](https://guardian.ng/news/nerc-imposes-stricter-penalties-for-prepaid-meter-tampering-bypass/?utm_source=chatgpt.com)[PLACNG](https://placng.org/i/wp-content/uploads/2023/06/Electricity-Act-2023.pdf?utm_source=chatgpt.com)

## **1) Definitions & Scope**

* **Technical losses**: physical/engineering losses (e.g., line I²R, transformer core).
* **Non-Technical losses (NTL)**: commercial/administrative losses, chiefly **energy theft** (illegal connections, meter bypass/tamper), plus billing/collection errors and unmetered usage. Utilities and multilaterals classify theft as a principal NTL component. [World Bank PPP](https://ppp.worldbank.org/legislation-regulation/laws/theft-nontechnical-loss?utm_source=chatgpt.com)

## **2) Global Scale & Context**

* Many emerging markets report **AT&C losses** (aggregate technical & commercial) above 20%, with theft a large share. India’s average AT&C losses for state DISCOMs were ~21% in 2019–20 despite reforms under UDAY. [PRS Legislative Research](https://prsindia.org/policy/analytical-reports/impact-of-ujwal-discom-assurance-yojana-uday?utm_source=chatgpt.com)
* World Bank indicators show persistent **transmission & distribution (T&D) losses** worldwide (varies widely by country), reflecting both technical constraints and NTL. [World Bank Open Data](https://data.worldbank.org/indicator/EG.ELC.LOSS.ZS?utm_source=chatgpt.com)
* Examples of high NTL focus:  
  + **Pakistan**: recurring crackdowns; regulator NEPRA has estimated large shares of distributed electricity lost/pilfered. [Bloomberg](https://www.bloomberg.com/news/articles/2023-11-01/pakistan-cracks-down-on-power-theft-to-reform-debt-laden-economy?utm_source=chatgpt.com)[SAMAA TV](https://www.samaa.tv/2087331803-anti-electricity-theft-campaign-recovers-rs152b-since-september-2023?utm_source=chatgpt.com)
  + **India**: reforms and feeder metering/UDAY targets to curb AT&C losses. [PRS Legislative Research](https://prsindia.org/policy/analytical-reports/impact-of-ujwal-discom-assurance-yojana-uday?utm_source=chatgpt.com)[CSTEP](https://cstep.in/publications-details.php?id=619&utm_source=chatgpt.com)

Growing electricity demand intensifies the revenue and reliability stakes of NTL control. [IEA](https://www.iea.org/reports/electricity-2024/executive-summary?utm_source=chatgpt.com)

## **3) How Energy Theft Happens**

Typical patterns along the **customer–meter–network** chain:

1. **Illegal connections** before the meter (direct taps).
2. **Meter tampering/bypass**: magnets, neutral shifting, CT/PT manipulation, firmware/port exploits for smart meters, reverse energy, phase swaps.
3. **Commercial fraud**: collusive under-billing, “no-read” estimates, ghost customers.
4. **Infrastructure theft**: conductor/copper theft causing outages & hazards. [World Bank PPP](https://ppp.worldbank.org/legislation-regulation/laws/theft-nontechnical-loss?utm_source=chatgpt.com)[Courier Mail](https://www.couriermail.com.au/news/queensland/copper-theft-hotspots-revealed-thieves-costing-queenslanders-thousands-of-dollars-in-damage/news-story/7a485ea091570f97198874a92d514ca6?utm_source=chatgpt.com)

**Safety impacts** include electrocution, fires, and equipment damage; several studies and case reports document fatalities and serious incidents tied to illegal connections and unsafe wiring. [ScienceDirect](https://www.sciencedirect.com/science/article/pii/S0301421522006309?utm_source=chatgpt.com)[Electrical & Power Review](https://www.eprmagazine.com/case-study/discovering-origins-of-electrical-fires-and-electrocutions/?utm_source=chatgpt.com)

## **4) Impacts**

* **Financial**: direct revenue loss, increased cost of supply, worsened DISCOM cashflows, stranded payables to generators. [CSTEP](https://cstep.in/publications-details.php?id=619&utm_source=chatgpt.com)
* **Operational**: distorted load forecasts, poor voltage profiles, overloading on theft-heavy feeders, higher technical losses due to unauthorized load growth.
* **Customer & welfare**: tariff pressure on paying customers; worse reliability where utilities ration supply to manage losses. [World Bank Open Data](https://data.worldbank.org/indicator/IC.FRM.OUTG.ZS?utm_source=chatgpt.com)
* **Safety & societal**: injuries/fatalities, fires, and criminal networks around copper and equipment theft. [Courier Mail](https://www.couriermail.com.au/news/queensland/copper-theft-hotspots-revealed-thieves-costing-queenslanders-thousands-of-dollars-in-damage/news-story/7a485ea091570f97198874a92d514ca6?utm_source=chatgpt.com)

## **5) Detection & Deterrence Toolkit**

### **A. Traditional & AMI-based Operational Controls**

* **Feeder & DT energy balance**: compare substation/feeder input with sum of billed metered energy (by feeder/DT).
* **High-loss feeder targeting** with **feeder metering** and periodic audits.
* **Advanced Metering Infrastructure (AMI)** & head-end/MDMS analytics:  
  + Tamper flags (cover open, reverse current, magnetic, neutral disturbance), outage/restoration logs.
  + **Load shape anomaly** detection; zero/minimal consumption with power availability; night-only loads; weekend spikes.
  + **Theft heatmaps** at transformer/feeder granularity to focus field teams.
  + Vendor solutions and utility case studies emphasize NTL analytics embedded in AMI platforms. [trilliant.com](https://trilliant.com/detecting-energy-theft-or-loss-at-the-source-trilliants-non-technical-loss-analytics/?utm_source=chatgpt.com)

### **B. Data Science & ML (research frontier)**

* **Supervised learning** on labeled theft cases; **class imbalance** handled via resampling/augmentation (e.g., LoRAS).
* **Deep learning** (CNN/LSTM/transformers) for time-series signatures; recent work shows improved accuracy with real utility datasets. [Nature](https://www.nature.com/articles/s41598-025-93140-z?utm_source=chatgpt.com)
* **Ensemble models** (RF/XGBoost/stacking) remain strong baselines; feature engineering from AMI intervals and events is critical. [ScienceDirect](https://www.sciencedirect.com/science/article/abs/pii/S0378779620307021?utm_source=chatgpt.com)
* **Unsupervised & semi-supervised**: clustering, isolation forests, autoencoders for anomaly discovery where labels are scarce.
* **Graph analytics**: detect improbable flows on network topology (substation→feeder→DT→meter).
* **Privacy & fairness**: minimize PII, ensure due process before penalties.

Emerging research also explores **bio-inspired approaches** (e.g., artificial immune systems) for multi-type theft detection on smart grids. [ScienceDirect](https://www.sciencedirect.com/science/article/abs/pii/S1874548225000010?utm_source=chatgpt.com)

### **C. Field & Commercial Measures**

* **Targeted inspections** guided by analytics, sealed service drops, tamper-evident enclosures.
* **Prepaid metering & vending controls**; remote disconnect/reconnect on AMI.
* **Customer engagement**: amnesty windows to regularize connections, lifeline tariffs, and education campaigns to reduce incentives for bypass.

## **6) Legal & Regulatory Frameworks (Nigeria focus)**

* **Electricity Act 2023 (Nigeria)** consolidates sector laws, enabling multi-tier market structures and reinforcing regulatory powers—providing a legal basis for enforcement against tampering and unauthorized access. [PLACNG](https://placng.org/i/wp-content/uploads/2023/06/Electricity-Act-2023.pdf?utm_source=chatgpt.com)
* **NERC orders on theft and tampering**: In **January 2025**, NERC’s **Amended Order on Unauthorised Access, Meter Tampering, and Bypass** increased administrative fines (₦100k–₦300k by customer class) and imposed **450–600% of last recorded consumption** for Maximum Demand offenders, strengthening deterrence relative to the 2017 order. [The Guardian Nigeria](https://guardian.ng/news/nerc-imposes-stricter-penalties-for-prepaid-meter-tampering-bypass/?utm_source=chatgpt.com)[energyplanets.org](https://www.energyplanets.org/nigeria-introduces-stiffer-penalties-for-electricity-theft-to-combat-revenue-loss/?utm_source=chatgpt.com)
* **Utility enforcement**: Nigerian DISCOs (e.g., Ikeja Electric) publicly warn of prosecution; laws allow imprisonment for interference with licensed works. [ikejaelectric.com](https://www.ikejaelectric.com/ie-talks-tough-on-energy-theft-reaffirms-penalties-for-offenders-lagos-nigeria-july-22-2024/?utm_source=chatgpt.com)

*Comparative note*: Many countries criminalize meter interference and enable rapid administrative penalties; Pakistan and India pair enforcement with feeder metering, revenue-linked incentives, and community campaigns. [PRS Legislative Research](https://prsindia.org/policy/analytical-reports/impact-of-ujwal-discom-assurance-yojana-uday?utm_source=chatgpt.com)[SAMAA TV](https://www.samaa.tv/2087331803-anti-electricity-theft-campaign-recovers-rs152b-since-september-2023?utm_source=chatgpt.com)

## **7) Case Study Sketches**

### **Nigeria (urban feeders)**

Symptoms: high billed-vs-measured gap, clusters of zero/low consumption with normal voltage, frequent tamper flags.  
 Actions that work: AMI rollouts on worst 20% feeders; transformer-level balancing; audit blitz informed by heatmaps; enforce NERC order with documented due process; customer amnesties to onboard to prepaid; socialized messaging on safety/penalties. [The Guardian Nigeria](https://guardian.ng/news/nerc-imposes-stricter-penalties-for-prepaid-meter-tampering-bypass/?utm_source=chatgpt.com)

## **Snapshot (why it matters now)**

* **Non-technical losses (NTL)**—especially energy theft (illegal connections, meter bypass/tamper)—are a core driver of Nigeria’s high ATC&C losses and cash shortfalls. NERC’s **Q4-2024** report shows ATC&C losses remain acute on several feeders/DisCos, undermining remittances to the market. [NERC](https://nerc.gov.ng/wp-content/uploads/2025/03/2024_Q4-Report.pdf?utm_source=chatgpt.com)
* **Metering gap** remains large (roughly half of customers are still unmetered), which fuels estimated billing disputes and incentivizes theft; government has pursued mass metering but execution has lagged. [Reuters](https://www.reuters.com/business/energy/nigeria-procure-35-mln-electricity-meters-2024-raise-revenue-2024-06-07/?utm_source=chatgpt.com)[Vanguard News](https://www.vanguardngr.com/2024/11/nigerias-metering-gap-stands-at-50-nerc/?utm_source=chatgpt.com)
* **Regulatory bite increased on 22 Jan 2025**: NERC’s **Amended Order on Unauthorised Access, Meter Tampering and By-Pass** tightened penalties and reconnection conditions, aligned with the **Electricity Act 2023**. [NERC+1](https://nerc.gov.ng/media/amended-order-on-unauthorised-access-meter-tampering-and-by-pass/?utm_source=chatgpt.com)[PLACNG](https://placng.org/i/wp-content/uploads/2023/06/Electricity-Act-2023.pdf?utm_source=chatgpt.com)

## **What counts as “energy theft” (Nigeria)**

* **Illegal connections** before the meter; **meter bypass/tampering** (neutral shift, magnets, CT/PT manipulation, firmware exploits); **collusive under-billing**; and **unmetered consumption** beyond permitted categories. Nigeria’s **Electricity Act 2023** and NERC regulations criminalize interference with licensee works/meters and empower DisCos to disconnect unauthorized connections. [FAOLEX](https://faolex.fao.org/docs/pdf/nig218782.pdf?utm_source=chatgpt.com)[NERC](https://nerc.gov.ng/media/amended-order-on-unauthorised-access-meter-tampering-and-by-pass/?utm_source=chatgpt.com)

**Penalties & enforcement (2023–2025):**

* The **Electricity Act 2023** prescribes fines and/or imprisonment for interference with meters/works and other electricity offences; NERC has also emphasized sanctions in guidance and public notices. [FAOLEX](https://faolex.fao.org/docs/pdf/nig218782.pdf?utm_source=chatgpt.com)[Nairametrics](https://nairametrics.com/2023/09/28/nerc-unveils-stringent-penalties-for-electricity-offences-under-the-electricity-act/?utm_source=chatgpt.com)[TheFact Daily](https://thefact.ng/criminalizing-energy-theft-what-consumers-must-know-about-the-electricity-act/?utm_source=chatgpt.com)
* The **Amended NERC Order (effective 22 Jan 2025)** replaces the 2017 order, allowing DisCos to **disconnect without notice** for unauthorized access/tampering and to require **administrative charges (incl. meter replacement) and reconnection fees**, scaled by customer class. [NERC](https://nerc.gov.ng/media/amended-order-on-unauthorised-access-meter-tampering-and-by-pass/?utm_source=chatgpt.com)
* DisCos (e.g., **Ikeja Electric**) publicly warn of **prosecution** for energy theft and cite the NERC Order as legal backing. [ikejaelectric.com](https://www.ikejaelectric.com/ie-talks-tough-on-energy-theft-reaffirms-penalties-for-offenders-lagos-nigeria-july-22-2024/?utm_source=chatgpt.com)[The Nation Newspaper](https://thenationonlineng.net/ikeja-electric-goes-hard-on-energy-theft/?utm_source=chatgpt.com)

## **Scale & drivers inside Nigeria**

* **ATC&C losses**: NERC’s **Q4-2024** quarterly report details significant gaps across DisCos, with some posting loss figures far above targets—confirming theft-heavy feeders and weak collections as persistent pain points. [NERC](https://nerc.gov.ng/wp-content/uploads/2025/03/2024_Q4-Report.pdf?utm_source=chatgpt.com)
* **Metering gap**: Reuters reported **~7 million of 13 million** customers unmetered (June 2024); plans for **3.5M meters** in 2024 and a 5-year program for **10M meters** were announced, but delivery has been uneven. Later reporting and NERC commentary continue to flag the gap near **~50%** into late-2024/2025. [Reuters](https://www.reuters.com/business/energy/nigeria-procure-35-mln-electricity-meters-2024-raise-revenue-2024-06-07/?utm_source=chatgpt.com)[Vanguard News](https://www.vanguardngr.com/2024/11/nigerias-metering-gap-stands-at-50-nerc/?utm_source=chatgpt.com)
* **Tariff pressures**: Tariff adjustments (e.g., targeted Band A changes in 2024/2025) seek to curb subsidies, but losses and poor collections still strain cashflows—raising the salience of NTL control for sector viability. [Reuters](https://www.reuters.com/world/africa/nigeria-cuts-electricity-subsidies-by-35-after-tariff-hike-2025-04-17/?utm_source=chatgpt.com)[Businessday NG](https://businessday.ng/energy/article/nigeria-retains-west-africas-lowest-power-tariff-trophy-despite-mounting-debts/?utm_source=chatgpt.com)

**Why theft persists:**

1. affordability gaps and supply unreliability; 2) large unmetered base (estimated billing disputes); 3) weak mapping of meters to DT/feeder; 4) limited tamper-resistant hardware in high-risk areas; 5) sporadic field enforcement.

## **How theft shows up (field patterns)**

* **Feeder/DT energy imbalance** far above technical norms.
* **AMI tamper events** (cover open, reverse energy, magnetic tamper, neutral disturbance).
* **Suspicious load shapes**: zero/minimal use with normal voltage, night-only spikes, abrupt consumption drops post-meter installation.
* **Clusters of estimated bills** with low/no vending on prepaid corridors.

## **What’s working in Nigeria (and should scale)**

### **1) Regulatory & commercial controls**

* Apply the **Jan-2025 NERC Order** rigorously: instant disconnection for unauthorized access, **admin charges + meter replacement** + reconnection conditions; maintain clear, documented due process for appeals. [NERC](https://nerc.gov.ng/media/amended-order-on-unauthorised-access-meter-tampering-and-by-pass/?utm_source=chatgpt.com)
* Enforce **Electricity Act 2023 offences** (tampering, interference with works) with actual prosecutions in repeat/egregious cases to build deterrence. [FAOLEX](https://faolex.fao.org/docs/pdf/nig218782.pdf?utm_source=chatgpt.com)

### **2) Metering and topology discipline**

* **Feeder/DT metering** and **customer-to-DT mapping** (NERC MAP regs require association of meters to feeders/DTs)—this underpins energy balancing and targeted inspections. [NERC](https://nerc.gov.ng/wp-content/uploads/2018/03/NERC%20MAP%20Regulation%202018.pdf?utm_source=chatgpt.com)
* **Secure metering hardware** in theft-dense clusters: tamper-evident boxes, armored service drops, locked pillars, and split smart meters where appropriate.

### **3) Data-driven targeting**

* Use AMI/MDMS to build **theft heatmaps** at DT/feeder level, prioritize top-loss pockets; combine interval data + tamper flags + vending anomaly scores to raise inspection hit-rates.

### **4) Customer-side measures**

* **Amnesty windows** to regularize illegal connections onto prepaid; simplify vending/account linking; **lifeline/targeted support** for low-income customers to reduce bypass incentives.

## **Practical 6–12 month roadmap (for a DisCo/state regulator)**

**Phase 0 (Weeks 0–4): Baseline**

* Reconcile **feeder/DT/customer mapping**; compute feeder/DT energy balance; publish top-20 loss hotspots.

**Phase 1 (Months 1–3): Quick wins**

* Deploy **feeder/DT meters** where missing; lock down metering points.
* Roll out **rule-based analytics**: zero-use with supply, reverse energy, repeat tamper flags, abnormal vending (prepaid).
* Launch **targeted inspections** on top-risk clusters; enforce **NERC Order** reconnection conditions (admin charges + replacement). [NERC](https://nerc.gov.ng/media/amended-order-on-unauthorised-access-meter-tampering-and-by-pass/?utm_source=chatgpt.com)

**Phase 2 (Months 3–9): Scale**

* Ramp **prepaid/smart metering** to worst feeders (align with national metering programs; leverage private financing where federal rollouts slip). [Reuters](https://www.reuters.com/business/energy/nigeria-procure-35-mln-electricity-meters-2024-raise-revenue-2024-06-07/?utm_source=chatgpt.com)
* Introduce **ML scoring** (ensemble/XGBoost + time-series features) to refine target lists; weekly “heatmap to field” cadence.

**Phase 3 (Months 6–12): Structural**

* Hardening works (split meters, sealed boxes) in chronic theft zones; **community engagement** (safety + penalties + amnesty stories).
* Tighten **commercial controls**: mandatory AMI reads, exception-based field visits, and audit trails.

**KPIs to track (monthly):**

* Feeder NTL% and DT loss% (targeted feeders).
* **Billed energy uplift** and **collection efficiency**.
* **Tamper events per 1,000 meters** and **repeat-offender rate**.
* **Inspection hit-rate** (confirmed cases / visits).
* **New meters installed** & **vending activation rate** in target areas.

## **Risks, fairness & safety**

* **False positives**: Use multiple evidence points (tamper + load shape + field photos) before sanctions; maintain an **appeals path** per Customer Protection Regulations. [NERC](https://nerc.gov.ng/media/amended-order-on-unauthorised-access-meter-tampering-and-by-pass/?utm_source=chatgpt.com)
* **Affordability**: Pair enforcement with lifeline/targeted support to avoid pushing vulnerable customers to bypass.
* **Safety**: Illegal connections cause shocks/fires—coordinate with state safety agencies and publish hazard takedowns to build public support. DisCos have been vocal on prosecution and safety messaging. [ikejaelectric.com](https://www.ikejaelectric.com/ie-talks-tough-on-energy-theft-reaffirms-penalties-for-offenders-lagos-nigeria-july-22-2024/?utm_source=chatgpt.com)[The Nation Newspaper](https://thenationonlineng.net/ikeja-electric-goes-hard-on-energy-theft/?utm_source=chatgpt.com)

## **One-page policy checklist (Nigeria, 2025)**

* **Use the 22-Jan-2025 NERC Order** as the operational rulebook for tamper/bypass cases (disconnect, admin charges, reconnection conditions). [NERC](https://nerc.gov.ng/media/amended-order-on-unauthorised-access-meter-tampering-and-by-pass/?utm_source=chatgpt.com)
* **Enforce the Electricity Act 2023**: prosecute interference with meters/works in repeat/serious theft clusters. [FAOLEX](https://faolex.fao.org/docs/pdf/nig218782.pdf?utm_source=chatgpt.com)
* **Close the mapping gap** (meter→DT→feeder) per MAP regulations; publish quarterly hotspot dashboards. [NERC](https://nerc.gov.ng/wp-content/uploads/2018/03/NERC%20MAP%20Regulation%202018.pdf?utm_source=chatgpt.com)
* **Prioritize metering where losses are highest**; align with national procurement but don’t wait for it—use private/DisCo financing where feasible. [Reuters](https://www.reuters.com/business/energy/nigeria-procure-35-mln-electricity-meters-2024-raise-revenue-2024-06-07/?utm_source=chatgpt.com)
* **Tie inspections to analytics** (not complaints alone) and measure hit-rate; communicate amnesty + penalties clearly.

## **Sources & further reading**

* **NERC**: *Amended Order on Unauthorised Access, Meter Tampering & By-Pass* (effective **22 Jan 2025**) and explainer page. [NERC+1](https://nerc.gov.ng/wp-content/uploads/2025/02/Amended-Order-on-Unauthorised-Access-Meter-Tampering-and-By-Pass-.pdf?utm_source=chatgpt.com)
* **Electricity Act 2023** (full text summaries). [PLACNG](https://placng.org/i/wp-content/uploads/2023/06/Electricity-Act-2023.pdf?utm_source=chatgpt.com)[FAOLEX](https://faolex.fao.org/docs/pdf/nig218782.pdf?utm_source=chatgpt.com)
* **NERC Q4-2024 Quarterly Report** (ATC&C performance). [NERC](https://nerc.gov.ng/wp-content/uploads/2025/03/2024_Q4-Report.pdf?utm_source=chatgpt.com)
* **Metering gap & mass metering**: Reuters (June 7, 2024) and local reporting. [Reuters](https://www.reuters.com/business/energy/nigeria-procure-35-mln-electricity-meters-2024-raise-revenue-2024-06-07/?utm_source=chatgpt.com)[Vanguard News](https://www.vanguardngr.com/2024/11/nigerias-metering-gap-stands-at-50-nerc/?utm_source=chatgpt.com)
* **DisCo enforcement messaging**: Ikeja Electric notices & local press. [ikejaelectric.com](https://www.ikejaelectric.com/ie-talks-tough-on-energy-theft-reaffirms-penalties-for-offenders-lagos-nigeria-july-22-2024/?utm_source=chatgpt.com)[The Nation Newspaper](https://thenationonlineng.net/ikeja-electric-goes-hard-on-energy-theft/?utm_source=chatgpt.com)
* **Tariff context & subsidies (2024–2025)**: Reuters; BusinessDay. [Reuters](https://www.reuters.com/world/africa/nigeria-cuts-electricity-subsidies-by-35-after-tariff-hike-2025-04-17/?utm_source=chatgpt.com)[Businessday NG](https://businessday.ng/energy/article/nigeria-retains-west-africas-lowest-power-tariff-trophy-despite-mounting-debts/?utm_source=chatgpt.com)
* **MAP Regulation (2018)** for meter-to-DT/feeder association. [NERC](https://nerc.gov.ng/wp-content/uploads/2018/03/NERC%20MAP%20Regulation%202018.pdf?utm_source=chatgpt.com)

**Appendix**

# Appendix



## References

Check what reference style your organization typically uses. Below is an example of the format for citing references called APA. Other common formats include MLA and Chicago Style.

### Examples

Lastname, A. (Year). *Book Title.* Publisher. DOI

Lastname, A., Lastname, B., & Lastname, C. (Year). Article title. *Journal Title, Volume#*(Issue#), Page(s)#. DOI

Lastname, A. (Year, Month Day). *Title.* Site Name. URL

## Supplementary materials

| File | Notes |
| --- | --- |
| File | Add additional context or detail |

| File | Files could include surveys, questionnaires, data tables |
| --- | --- |

| File | And any other research materials |
| --- | --- |