

9th Meeting of the Expert Group on ICT Household Indicators

E-Waste Subgroup Report

16th of September of 2021



Context

E-waste is a growing concern across many regions of the world; however, data availability on E-waste is still very scarce.

The 8th Meeting of the ITU Expert Group on ICT Household Indicators (EGH), which took place virtually on 14-18 September 2020, agreed to create a sub-group within EGH to address the measurement of electronic waste (e-waste) within the context of household surveys

Objective: The sub-group will discuss ways in which issues relevant to e-waste might be measured within the framework of household surveys, and make proposals to the EGH in this regard. Such issues might include for example survey questions related to the duration of use of ICT devices, and/or questions about the way in which they are disposed of when no longer used, etc

Focus on the work :

- Definition of the indicators
- Questionnaire research
- Creation and discussion of a draft questionnaire.



Definition of the indicators

**How to
measure E-
Waste**

1. Electronic Equipment put on Market (Kg/Inh)
2. E-Waste Generated (Kg/Inh)
3. E-Waste Recycled (Kg/Inh)
4. E-Waste Recycling Rate
Generated/Recycled (%)

E-Waste

Refers to all electrical and electronic equipment (EEE) and its parts that have been discarded by its owner as waste without the intent of re-use.



United Nations University “ideal” Approach

⦿ Focused on the disposal patterns of all the EEE present in households:



Questions:

- Was it second-hand?
- Which of these 54 types of e-waste did you dispose during the last year?
- How many units per e-waste category did you dispose of?
- What was the approximate age when you discarded it
- How did you discard the product?



Main concerns of members of the subgroup

- **Main concern:** UNU's approach is meant to be ideal, yet countries which could be interested in adding the module may have issues because of its length:

**More Questions= Higher
Costs
&
Less possibility of inclusion**

UNU had also two other approaches:

- Questions are asked by e-waste categories and not equipment, **trading accuracy for feasibility.**
- The number of questions is shortened, **trading completeness for feasibility.**

Other concerns were also raised:

- E-waste collection and **recycling practices may significantly vary across countries**, raising concerns about their inclusion as response options in some questions.
- Some questions needed respondents to **have prior knowledge about recycling practices**, making it difficult to include them for some countries whose inhabitants may not be able to easily understand core concepts.
- The list of items inquired by the questionnaires had **equipment that are not common to every country**. Since most NSOs have limited budgets, the inclusion of unusual devices could be inefficient.



Possible solutions

- Given the barriers and concerns identified, the members of the sub-group suggested to have a deeper look at questionnaires on e-waste (included on household ICT Surveys) as well as an academic review to identify the types of questions that could be included in an e-waste module questionnaire:

Discard Behaviour

Questions related to the activities undertaken by respondents once they have decided to dispose a device.

Example: how did you discard the product? (warranty, sold to someone, disposed by garbage collection center, etc.)

Reasons to Dispose

Questions related to the reasons respondents have to dispose certain equipment.

Example: what was the equipment approx. age when you decided to discard it?

Knowledge and Awareness

Questions to understand prior commitment towards and knowledge of recycling patterns.

Example: Did you consider eco-design as an important characteristic when you bought the device?

Possession

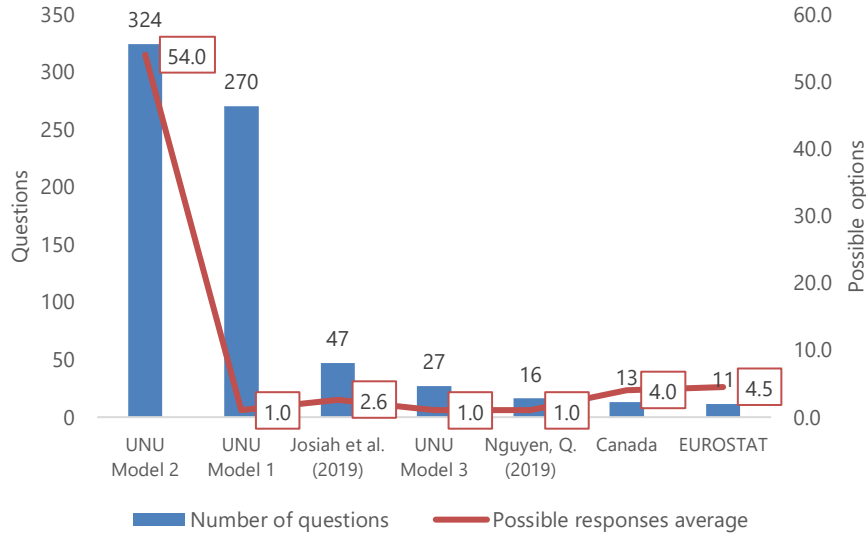
Questions related to certain devices and equipment ownership.

Example: which of these types of E-Waste did you dispose during the last year? (Laptops, freezers, electric saws, cellphones, etc.)

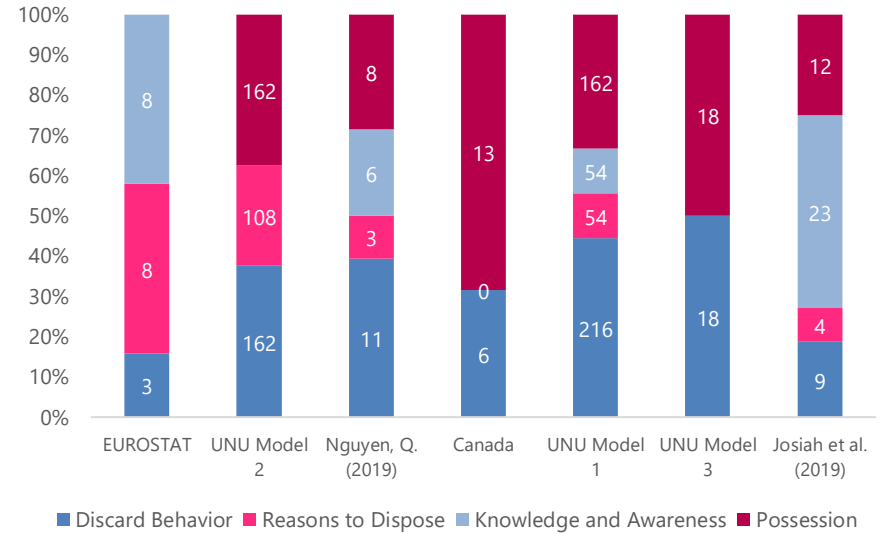
Results of the research

- The number of questions vary across sources and strategies, having a major focus on Discard Behavior and Possession.

Number of questions and possible response options average by questionnaire



Number of questions by source and E-Waste data collection approach



Note 1: If a question can be answered by selecting multiple options, we count each option as a different question due to comparability with other questionnaires.

Note 2: Some questions were counted within more than one strategy and, therefore, the amount of questions per source may not match with the total amount of questions.



Progress

Taking into account the research made by members, an initial output of a questionnaire of two modules has been shared.

The first part is a panel questionnaire comprised of **5 questions to collect information on 10 to 12 devices**. The devices selection criteria are their importance in terms of material value and environmental impact*.

- The second part of the template is designed to collect information about **e-waste awareness of recycling and disposal practices**.

Possession, Disposal Patterns, and Reasons to Dispose.

- Since relevant indicators to measure E-Waste need granular data to be useful, the findings suggested that the use of a **panel questionnaire model** would be the best comprehensive answer to the challenge.
- The rest of the inquired **equipment could be grouped as categories** based on UNU's Guidelines on Classification, Reporting and Indicators.

Awareness

- Since information about knowledge and awareness of recycling and e-waste disposal practices is useful to inform public policy decision-making, it may be worthwhile **including questions to understand why people dispose the electronic waste in the way they do**.

*The proposed template contains the equipment that is usually included, yet we advise further discussion on the matter. The current proposed devices are mobile phones, laptops, desktops, tv/pc screens, video game consoles, printers and fac machines, smart refrigerators/freezers, other small devices (keyboards, mouses, headphones, earpieces, digital camaras, MD player, radio/video cassette recorder, simple telephone)

Possession, Disposal Patterns, and Reasons to Dispose section Template

- This approach requires to formulate the questions for each selected equipment and categories. Therefore, we propose 5 single choice questions for each of the selected devices:

Question	Response options
Number of products disposed in the last 12 months	Number of disposed products
How did you dispose it?	<ul style="list-style-type: none"> a. Brought to an e-waste recycling center b. Picked up by an e-waste recycling center c. Collection by a door-to-door (informal) worker d. Bring to Municipal Collection Point e. Municipality pick-up at home f. Picked up the installer or company that sold me the product g. Sold online, or given away for free h. Sold to a refurbisher or repair shop i. Disposed of in the mixed residual waste bin j. Disposed of in another type of waste (plastic or metal waste) k. Returned with warranty substitution l. Do not remember/do not know
Was it second hand?	<ul style="list-style-type: none"> a. Yes b. No
Age of the products disposed	Number of years.
Why did you dispose it?	<ul style="list-style-type: none"> a. It was broken b. It was too old c. I no longer need it d. I needed an upgrade

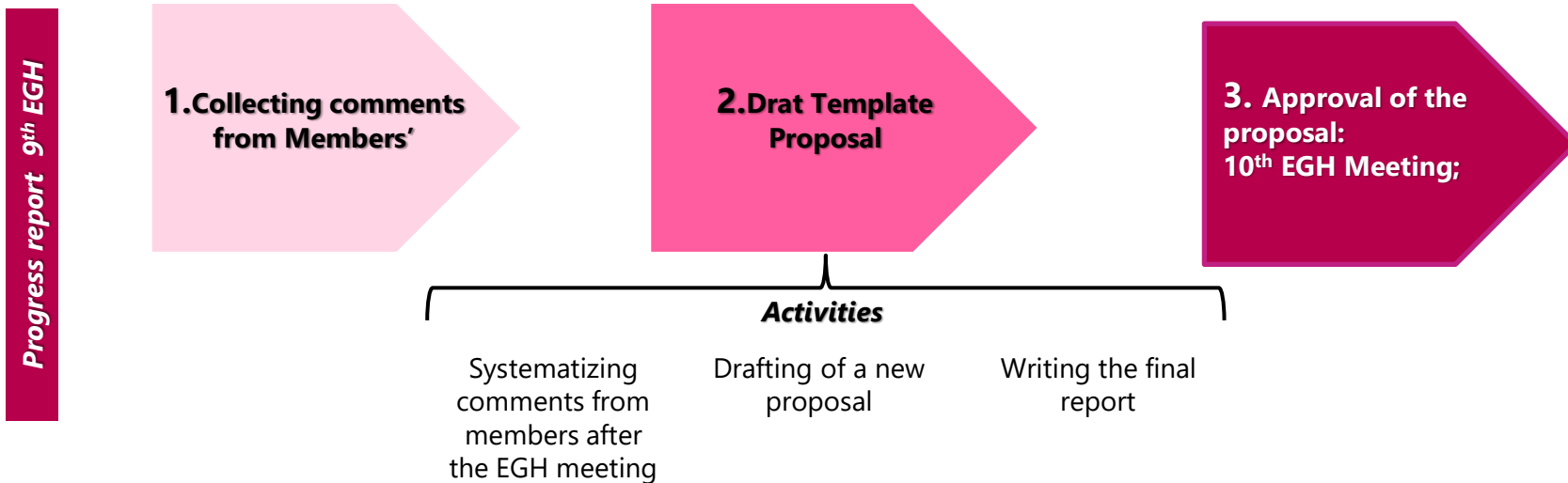


Awareness Section Template

- ◉ We then propose 5 additional questions presented in other surveys:

Question	Response options
Do you know what electronic waste or E-Waste is?	a. Yes b. No
What prevented you from delivering your E-Waste to collection points or recycling centers?	a. Lack of drop-off containers nearby b. Lack of knowledge about proper e-waste recycling c. Lack of vehicles d. Lack of time e. Do not care
How much do you know about the material used in e-waste and its toxic effect on human health?	Rate 0-10
How much do you know about the material used in e-waste and its toxic effect on the environment?	Rate 0-10
How much do you know about the material used in e-waste and its possible uses if recycled?	Rate 0-10

The work ahead



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