



Beyond the Barcode: Strengthening digital verification of sugar-sweetened beverages in Bangladesh

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What's at stake?

Sugar-sweetened beverages (SSBs) are a growing public-health concern. Globally, SSB consumption contributes substantially to type 2 diabetes and cardiovascular disease.¹ SSB purchases can also displace household spending on food and other essential needs.² In Bangladesh, changing food environments and greater exposure to packaged foods and beverages make these risks increasingly relevant.³ At the same time, Bangladesh is strengthening food-safety and nutrition policy, including food-labelling reforms and digital verification of product certification. As Figure 1 shows, existing regulations already require barcodes, QR codes, BSTI certification marks and mandatory label information that can support product identification and verification. But information on a package protects consumers only when it is trustworthy and can be readily verified.

This leaves an important gap between information printed on a package and information that consumers can independently verify. At stake are consumers' trust in packaged products and regulators' ability to identify and act on potential non-compliance. Our assessment of more than 1,500 SSB products sold in urban and semi-urban areas within Dhaka district, Bangladesh, examines how well current packaging features support such verification.

KEY MESSAGES

- **Digital identifiers do not yet guarantee independent verification.** Barcodes, QR codes and certification marks are present on SSB packages, but they do not consistently connect consumers to authoritative product information.
- **Barcode searches often lead to commercial rather than independent sources.** Only 1 in 5 barcode searches reached an independent product database, limiting their usefulness as a public verification tool.
- **QR codes lack a consistent verification function.** They can direct consumers to manufacturer websites, promotional content or social media rather than a trusted regulatory record.
- **Bangladesh has important verification infrastructure, but access needs to be simpler.** BSTI provides an online certification-checking system, yet linking information on a package to an authoritative license record remains difficult for routine consumer use.
- **The policy opportunity is to connect, not simply add, information.** An interoperable **National Product Verification Platform**, building on existing regulatory systems, could provide a simple **scan-to-verify pathway** for consumers, retailers and regulators.

What Bangladesh's Regulations Require

Packaging information is designed to help consumers verify that products are genuine, safe and compliant.

 PACKAGE FEATURE	 LEGAL REQUIREMENT	 WHAT CONSUMERS SHOULD BE ABLE TO DO
 Barcode	 Product must carry a readable barcode.	 Identify the product through a trusted product database.
 QR Code	 Product packaging should include a QR code.	 Instantly verify product information and manufacturer.
 BSTI Certification Mark	 Licensed products must display a valid BSTI mark.	 Confirm the licence through the official BSTI database.
 Mandatory Label Information	 Packaging must provide required product information.	 Understand what they are buying (ingredients, origin, manufacturer, dates).
 The goal When these four elements work together, consumers can quickly identify a product, verify its authenticity and certification, and make informed purchasing decisions.  Stronger consumer protection, Safer markets. Better health.		

Source: Packaged Food Labeling Regulations, 2017 §4.5; Product Packaging Regulations, 2021 §5.1.9; BSTI Act, 2018 §15.1/§16; Food Safety Act, 2013 §32.c.

Figure 1: Key packaging and labelling requirements in Bangladesh and their role in enabling consumers to identify and verify products

Research Approach

We conducted a systematic shop-shelf survey to capture SSB products actually available in the retail market. From 11 January to 27 April 2026, products were collected across eight areas of Dhaka District—four urban (Khilgaon, Bangshal, Mohammadpur and Mirpur) and four semi-urban (Savar, Dhamrai, Dohar and Keraniganj). Our unique-pack sampling strategy was adapted from the TPackSS (Tobacco Pack Surveillance System).⁴ Enumerators began at the largest identifiable retail outlet in each area and continued through other eligible shops selling SSBs. Each outlet was geolocated and assigned a unique ID. A product-by-shop tracking matrix prevented duplicate collection within an area, and collection stopped when ten consecutive shops yielded no new unique products. Intact discarded packs were collected where available; otherwise, a new pack was purchased.

Each unique product was linked to its source outlet and assessed using a structured package-recording form informed by the INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support) food-labelling framework.⁵ We recorded

product and manufacturer/importer information, package characteristics, BSTI and other certification marks, barcodes and QR codes, ingredients and sweeteners, nutrition information, and marketing and health claims. Retail environment, including shop type, product placement and promotional activity, was also recorded. Electronic tools (KoBoToolbox⁶ and REDCap⁷), GPS-linked shop records and photographic documentation of SSB products enhanced traceability and data quality.

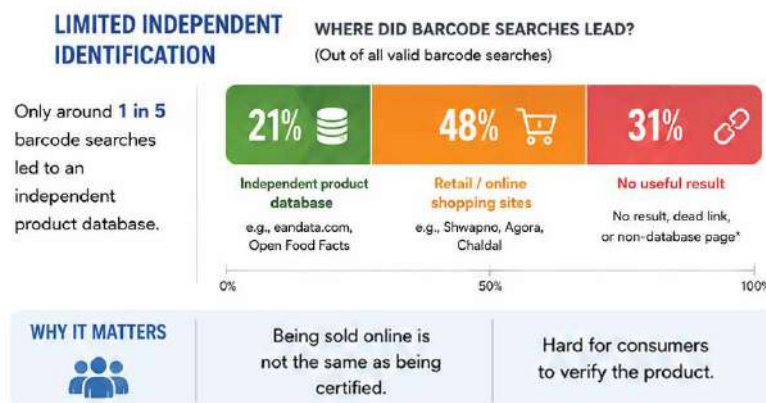
To evaluate public verifiability, we examined where valid product barcodes directed when searched online. Each barcode was searched on DuckDuckGo⁸, and the top five results were recorded. These results were classified by whether they linked to an independent product database, a retail or shopping site, an unrelated source, or yielded no useful information. Additionally, the destinations of QR codes and the presence of BSTI certification information were assessed. This approach measures practical public access to product information; it does not determine formal registration, regulatory compliance or whether a product is counterfeit.

What was found?

Across all three identifiers, the central issue was not whether information was present on the package, but whether it provided a clear route to an independent, authoritative record. The findings reveal three distinct weaknesses in the current verification pathway.

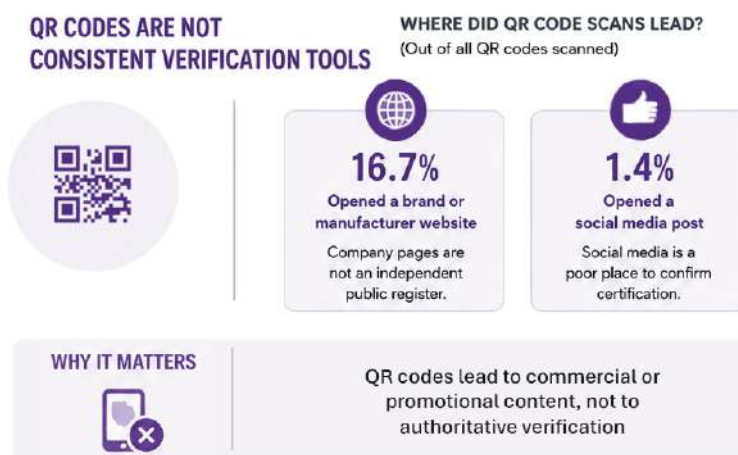
Finding 1 – Identification is not verification

The barcode results point to a reliance on commercial visibility rather than authoritative verification. A product appearing in an online shop may help consumers identify it, but it does not establish certification or regulatory status. The policy need is therefore a direct link between the identifier on the pack and a trusted regulatory record.



Finding 2 – QR codes lack a standard verification function

QR codes can provide instant access to information, but their value for consumer protection depends on where they lead. When destinations are controlled by brands or used for promotional content, the same visual tool can serve very different purposes. A regulatory verification function therefore needs a clearly defined, authoritative destination.



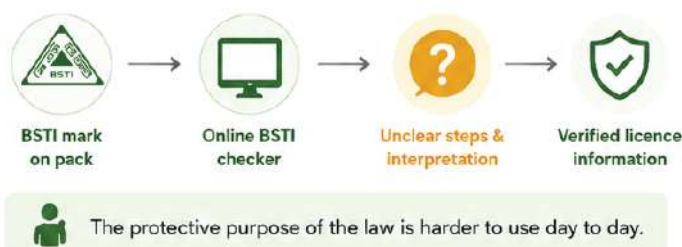
Finding 3 – The authoritative route is not yet easy to use

BSTI's online checker provides an important foundation for authoritative verification. The remaining challenge is usability: consumers need a simple way to move from the certification information printed on a pack to a current license record and understand what that record means. Making this pathway intuitive would increase the practical value of the existing system.

The findings point to a broader policy gap: **Bangladesh has several product-identification and certification features on SSB packaging, but they do not yet operate as a coherent public verification system.** Barcodes, QR codes and BSTI certification information could become much more useful if they connected consumers and regulators to a consistent, authoritative and easily accessible source of product information.

BSTI VERIFICATION REMAINS DIFFICULT TO USE ROUTINELY

An online checker exists, but clear public guidance on how to enter the mark and read licence details is lacking.



A practical policy solution

The policy opportunity is to turn existing identifiers into a connected verification pathway. Bangladesh can build on current BSTI and food-safety infrastructure through a National Product Verification Platform linking product identifiers, license status, manufacturer/importer information and relevant compliance records. The platform should be publicly accessible and mobile-friendly, with a secure QR code or barcode search leading to the same authoritative product record. Commercial search results and manufacturer-controlled pages can provide useful information, but should not substitute for regulatory verification.

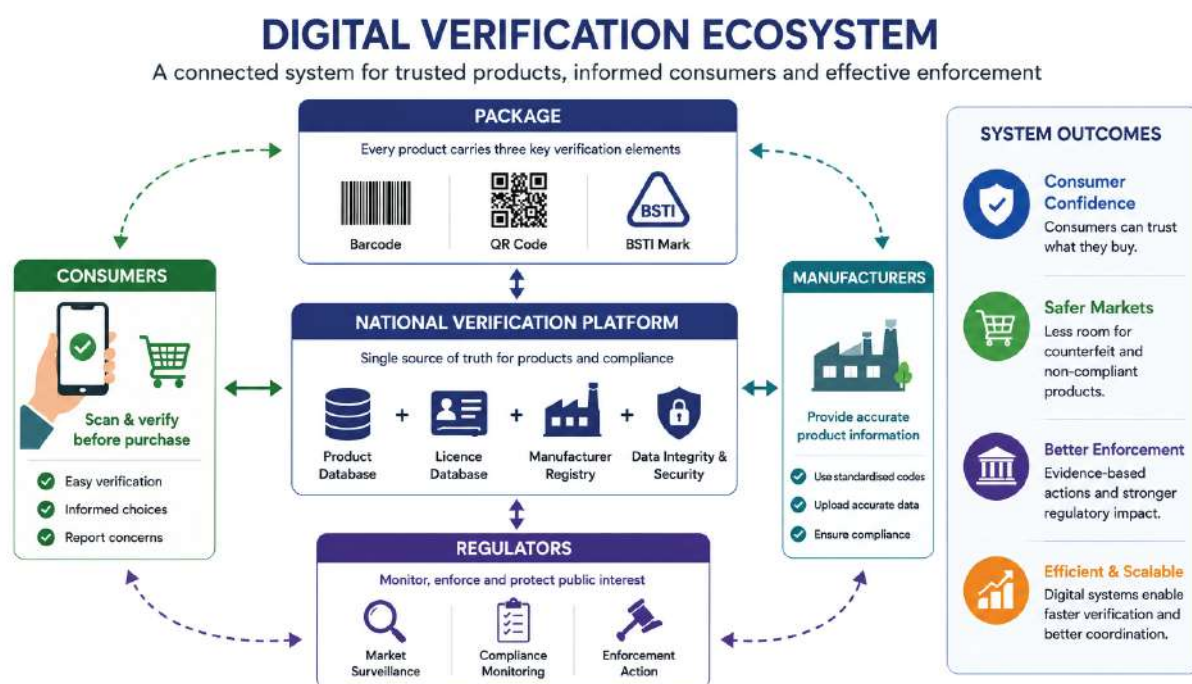


Figure 5: Proposed digital verification ecosystem for SSB regulation in Bangladesh

Recommendations

Turning digital identifiers into effective consumer-protection tools will require coordinated action across regulators, manufacturers and retailers. The immediate priority is to build on existing systems and make verification simple, consistent and authoritative.

- 1 Connect existing regulatory systems**
BSTI, BFSA and other relevant agencies should work towards interoperable product records so that barcodes, QR codes and certification information can connect users to a single authoritative source of verification.
- 2 Establish clear standards for digital verification**
Government should define the minimum information that a verification record should display; including product identity, manufacturer or importer, license/certification status and validity and clarify how packaging identifiers should link to these records.
- 3 Make verification easy for consumers**
Verification should require as few steps as possible. Scanning a code should provide a clear and understandable result, supported by simple public guidance on how to check and interpret certification information.
- 4 Bring manufacturers, importers and retailers into the system**
Manufacturers and importers should maintain accurate product information and link relevant packaging identifiers to authoritative records. Retailers can reinforce the system by checking products entering their supply chains and helping consumers access verification information.
- 5 Use verification to strengthen market surveillance**
A connected digital system could also support regulators and inspectors by enabling faster checks and helping identify products that may require further regulatory investigation.

Bangladesh does not need more information on packages alone—it needs a clearer connection between that information and trusted regulatory records. Building on existing BSTI and food-safety systems to create a simple, interoperable scan-to-verify pathway could turn barcodes, QR codes and certification marks from passive packaging features into practical tools for consumer protection and regulatory oversight.

Funding

This study is funded by the International Development Research Centre (IDRC).

Ethics Clearance

Ethical approval was granted by the Bangladesh Medical Research Council (Registration Number 65417072025; approved 29 December 2025).

Produced with support from ARK Foundation and the International Development Research Centre (IDRC). The observations and views expressed in this work are the sole responsibility of the author(s).

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