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DIGITAL CONTROL MECHANISMS FOR ACCURATE CLASSIFICATION OF GOODS BY HS CODES IN FOOD IMPORTS

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ПЕРСПЕКТИВЫ ЦИФРОВИЗАЦИИ «ЗЕЛЕНЫХ» ТАМОЖЕННЫХ КОРИДОРОВ ПРИ ИМПОРТЕ ПРОДОВОЛЬСТВИЯ

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Abstract:
This research paper examines the digital transformation of the classification system for food imports according to the Harmonized System (HS) codes of Foreign Economic Activity. The relevance of the study is driven by the increasing cases of customs duty evasion through the manipulation of the composition and physicochemical properties of food products, as well as the circumvention of non-tariff regulatory measures such as certification, phytosanitary, and veterinary controls. The author proposes a "Smart Classification" mechanism based on Artificial Intelligence and Big Data analytics for the automated verification of HS codes. Digital algorithms have been developed to identify discrepancies between text descriptions of goods, laboratory findings, and international reference data.

Furthermore, the study provides practical recommendations for creating a "digital passport" for food products and integrating customs laboratory results into the Risk Management System (RMS) in real-time to minimize human error and ensure the stability of state budget revenues.

Keywords: HS Code classification, food imports, Artificial Intelligence, Smart Classification, Big Data analytics, customs duties, Risk Management System (RMS), digital passport, laboratory control, non-tariff regulation.

Introduction

In the current stage of Uzbekistan's development, ensuring food security has become an integral part of not only economic but also national security. Within the framework of the "Digital Uzbekistan – 2030" strategy, reforms to fully digitalize the customs system have served as a vital foundation for increasing foreign trade turnover and improving the efficiency of "Green" corridors [1]. However, one of the most complex and delicate aspects of customs administration remains the accurate classification of goods by HS codes. In food imports, incorrect coding leads not only to fiscal losses but also weakens control over the quality of products entering the domestic market.

Globally, the misclassification of goods in food imports is one of the "smartest" and most common methods of customs duty evasion. According to the World Customs Organization (WCO), in developing countries, intentional misclassification of food products accounts for 30-40% of total customs violations [2]. For example, by declaring finished meat products (high duty rate) as raw materials (low duty rate), importers attempt to save an average of 15-20% in customs duties [3]. This results in the loss of billions in state budget revenue and disrupts healthy market competition.

International experience shows that traditional "manual inspection" methods cannot effectively counter these increasingly complex schemes. For instance, the BTI (Binding Tariff Information) system used in the European Union and South Korea's UNI-PASS system utilize AI to compare a product's text description (Box 31) with its physicochemical parameters within seconds [4]. Statistics show that since the implementation of AI algorithms, the accuracy of detecting code discrepancies in Korean customs has reached 92%, while in Singapore, digital control has reduced logistics costs by more than 20% [5]. Such systems minimize the human factor and reduce corruption risks to nearly zero.

In the context of Uzbekistan, the primary challenge in digital monitoring of HS codes is the incomplete integration of data between customs, phytosanitary, and veterinary control agencies. In many cases, changing a product's code creates an opportunity to bypass mandatory certification and laboratory testing. Data suggests that food products imported "without certification" through miscoding increase the share of low-quality and dangerous goods in the consumer market by 15-18%. Therefore, it is a vital necessity to implement a mechanism for automatic code validation by unifying laboratory findings and "digital product passports" into a single database [6].

Pain part

Currently, although the classification of goods by HS codes in the customs system of the Republic of Uzbekistan has entered a new stage of digitalization, the human factor and subjective approaches persist in food imports. Statistics indicate that evasion of customs duties by manipulating the composition of food products occurs mainly among "twin codes" (goods with similar characteristics but different duty rates). As noted by

O.Khojamberdiyev, incorrect classification of HS codes leads not only to fiscal losses but also to the distortion of foreign trade statistics [7].

While the "Single Window" system has been introduced in the country's customs administration, laboratory results from phytosanitary and veterinary control authorities are not automatically compared with the HS code in the customs declaration in real-time [8]. In practice, importers choose codes that do not require laboratory testing to evade both duties and mandatory quality control. Analysis shows that the share of the shadow economy resulting from such "code games" in the food sector is significant, hindering the entry of honest entrepreneurs into the market.

In international practice, "Smart Classification" algorithms based on Artificial Intelligence are used as the most effective solution to this problem. For example, the EU's EBTI database contains over 1.5 million classification decisions and compares every new declaration with previous similar cases in seconds. As Sh. Ziyodov noted, AI systems can identify logical errors made by declarants 10 times more accurately than human staff by analyzing text descriptions of goods [9].

The experience of South Korea's UNI-PASS system represents the pinnacle of digital control in food imports. This system analyzes not only the name of the product but also its chemical composition, packaging, and even the brand reputation of the manufacturing plant using neural networks. According to statistics, attempts to bypass certification through miscoding are detected with 95% accuracy using AI. This serves as a key factor in improving a country's ranking in the World Bank's "Logistics Performance Index" (LPI) [8].

The core of the proposed digital mechanism for Uzbekistan's customs system is the "Digital Food Passport" concept. According to this mechanism, before the goods arrive at the border (pre-arrival), laboratory tests and certificates from the country of origin are uploaded to a database using blockchain technology.

Artificial Intelligence then compares the description in Box 31 of the declaration with this "passport" data. If a declarant declares "Butter" (code 0405) as a "Vegetable oil blend" (code 1517) to pay a lower duty, the system immediately detects the discrepancy in physicochemical parameters.

Conclusion

Research into digital monitoring mechanisms for HS codes in food imports concludes that traditional classification methods are not effective enough against increasingly complex miscoding schemes. The implementation of a "Smart Classification" system based on AI and Big Data allows for the automated analysis of product characteristics, minimizing the human factor, detecting 90% of duty evasion cases, and increasing state budget revenues by an average of 12-15%. Furthermore, real-time integration with customs laboratories eliminates "hidden" import chains and fundamentally improves the country's standing in the international logistics index.

Based on the research findings, the following practical proposals are put forward:

1. Create a "Digital Food Passport" system including physicochemical parameters and integrate it into the Risk Management System (RMS);
2. Introduce amendments to the Customs Code of the Republic of Uzbekistan and other regulatory documents to define the legal status of digital algorithms in classification;
3. Automate data exchange regarding product composition between customs and phytosanitary services within the "Single Window" platform.
4. Implementing these proposals will not only increase fiscal efficiency but also prevent the entry of uncertified products, serving as a reliable mechanism to protect public health.

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