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Research paper

Food products labeling in Georgia: problems and solutions

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Abstract

The Georgian legislation is a very clear regarding food labeling and completely shares the regulations and fundamental principles of all EU member states at formal level, but there are no effective mechanisms and institutions in place to react to the violation of the established regulations of the law, as well as to be responsible on the increase of public awareness, raising the food purchase and consumption culture. The aim of the thesis is to show problems in the Georgian food market in terms of fulfillment of fundamental norms envisaged under the EU Association Agreement. Qualitative research methodology - Observation method was used for data gathering. Observation was conducted in agricultural hypermarkets of Tbilisi. The situation in Georgia in terms of food labeling norms is quite complicated. The fundamental rules are met in no object of food sales, the information printed on food products creates the obscure presentation for customers regarding its content and suitability, the level of awareness of consumers is very low, consumers are not interested in details about the label information. The consumers focus on the price of products not on the information about its characteristics. Despite regulations that exists on formal level and existence of National Food Agency and also several active projects within partnership with European Union, situation in Georgia is complicated with lack of information from consumers and spurning food safety norms from their side. It is important to increase consumers awareness and actively turning them into those processes.

Keywords: *Food Labeling; Healthy Behavior; Marketing Research; Georgia.*

1. Introduction

On September 30, 2016 Europe Foundation ended project, which contemplated food safety and improvement of consumers rights in Georgia and Moldova (Berdzuli, 2016). The project funded by European Union and Swedish International Development Cooperation Agency. After implementation of the noted project the law about food safety and practice, showed positive changes, which reflected in product labeling and transparent inspection of food industries. The project also aimed to raise social awareness about food products safety and improving skills of employees in this field (Emerson and Kovziridze, 2016).

Georgian public agencies took in count 18 recommendations, worked out during the mentioned project. For example, the Government of Georgia confirmed technical regulations about milk and dairy products, which prohibited adding product names on labels of products, which contains vegetable fat. During the project Europe Foundation and its partner organizations make regular monitoring of food safety and as a result of evaluation they define how the duties taken by the government within the EU-Georgia Association Agreement are fulfilled.

In terms of food safety, monitoring is carried out by project grant recipient organizations, which replied to more than 2500 direction from consumers. In total 260 cases of food safety violation and mislabeling, from which 145 cases were corrected personally by the entrepreneur or by interference from public department (EF, 2017).

The web page www.momxmarebeli.ge exists in Georgia, which is dedicated to consumer rights protection. These web page has 703 000 members, which is not that much in a relation to the population of the country (KCR, 2013).

The one of the most important parts in terms of food safety is food label. The information on the label gives consumer the ability to define how the product corresponds with their demands (Lysenko, 2014; Wickham and Carbone, 2018; Okoye et al., 2015; Türközü et al., 2017; Phull, 2015). It is important that all mandatory demands must be maintained while labeling and consumers must have opportunity to get exhaustive information about the product they buy and use every day. Food label must be giving opportunity for everyone to make an informed decision about product before purchasing it (Ganpat et al., 2018).

There are a lot of problems with food safety and labeling in Georgia (Meskhia, 2016). Despite the fact, that the legislation has improvedon formal and judicial level, still in practice we face violations, low social awareness, which as a result still gives opportunities to different food manufacturers to avoid mandatory requirements and whilefocusing on profit and lowering the expenditure, they produce low prime cost production, which can be later soled in lower prices (Todua, 2017). Following the socio-economic condition of the country (Asatiani and Verulava, 2017; Verulava and Dangadze, 2018; Verulava, 2018), the majority of the population is guided by the price, while purchasing foodstuffs (EF, 2017). The lower the price, the higher is the consumption of the product. This peculiarity of customer market is considered by all active food manufacturers in the country. Lower priced products have much higher requirement from customers than high quality products, correspondingly the focus from the manufacturer is transferred on price instead of quality (Hong and Lee, 2018; Mahesh et al., 2018).

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From the perspective of food safety, the most important thing is informed society, because without informed consumer it is impossible to fulfill the food safety requirements (Alpert, 2015). In case of food safety and labeling the most problematic products are dairy and meat products. Labeling beef in European Union started after spreading Bovine Spongiform Encephalopathy. Up to 100 people died because of this disease, which causes dismantle of brain cells (Fox and Peterson, 2002). Countless amount of money was spent to prevent selling mad cows' meat. Lots of money was spent on revealing the diseased animal and its prevention. The brainpan, the brain, the spinal cord, eyes, the spinal cord fluid, the intestines, spleen were prohibited from selling. Veterinary inspection became mandatory for every animal to be taken out for selling and slaughtering. Meat labeling became mandatory, with referring the place of slaughter and time (Urotadze and Mghebrishvili, 2016).

Currently meat producers in all EU member countries are obliged to have implemented traceability on every stage of commodity chain.

Company – "Marshe", which appeared on Georgian market at 2012, offers consumers more than 2000 product names, including: semi-processed goods, fish, buns and rolls and various sausages. The company was the first to introduce traceability in Georgia (Todua, 2014).

The scheme of traceability works as follows: The supplier takes livestock meat from certified slaughterhouse, formed N2 (form N2 is the identification of supplier and slaughterhouse). The warehouse fills in the check list with dates and supplier shipment number. If the supplier does not have shipment number, the company gives it its own inner number. Veterinary checks temperature and takes sample for laboratory analysis. Meat moves to semi-processed goods and sausage section, where technologist fills in the check list with all ingredients (name, shipment number and quantity) for the final product. The final product gets control number, production date and expiration date (GL, 2012).

Company "Marshe" started cooperation with such international franchisee as Wendy's, Dunkin Donuts, Domino's Pizza, Old Wild West, Hard Rock Café. The company won governmental tender for supplying army and police. The company is going to start export with Azeri, Ukrainian and Polish markets. "Marshe" exports meat to Poland, but because Georgian meat producers do not have determined traceability, "Marshe" is forced to bring in meat for export from EU.

1.1. Labeling of beef and food traceability

One of the most important parts in food traceability is beef labeling. Government of Georgia approved "The Technical Regulations about beef and meat products labeling rule." According to the regulation business operator is obliged to label meat and meat products on every stage of production, processing and distribution. Business operator which produces and implements meat is obliged to have traceability system, by which the connection between meat and separate animal or animals will be determined.

It is mandatory that labeling system must provide connection between butcher's meat, the quarter of butcher's meat, slices of meat and separate animal. Information on label must be complete, understandable and easy to read for the consumer.

According to the technical regulations it is mandatory to label meat, meat shipment component, minced meat, cut of beef, also cut packed meat and unpacked meat. So that not a single slice of beef would be sold without label, also not even the minced meat. The label must contain reference number or reference code, which is given to every animal or group of animals by business-operator while entering the slaughterhouse.

If meat is received from the animal or group of animals, which was born, raised and slaughtered in Georgia ("Origin – Georgia"), personal number of the person who brought alive animal to the slaughterhouse, must be pointed out on the label (GL, 2014).

From January 1, 2017 the slaughterhouses that do not have Hazard Analysis and Critical Control Point (HACCP) system fully introduced, do not have the right to function. According to the information from the National Food Agency, 91 slaughterhouses are licensed in Georgia, from which only several of them has fully introduced HACCP system. The majority of slaughterhouses are introducing this system only now, while the other part is working on improving flaws indicated by the agency (LA, 2009).

1.2. Foreign experience

Food law establishes the rights of consumers to safe food and to accurate and honest information. In the European Union, the labelling rules enable the citizens to get comprehensive information about the content and composition of food products. Labelling helps consumers to make an informed choice while purchasing their foodstuffs. The new Regulation (EU) No 1169/2011 on the provision of food information to consumers entered into application on 13 December 2014. It includes the following major changes (EC, 2018):

- Improved legibility of information (minimum font size for mandatory information);
- Clearer and harmonised presentation of allergens (e.g. soy, nuts, gluten, lactose) for prepacked foods (emphasis by font, style or background colour) in the list of ingredients;
- Mandatory allergen information for non-prepacked food, including in restaurants and cafes;
- Requirement of certain nutrition information for majority of prepacked processed foods;
- Mandatory origin information for fresh meat from pigs, sheep, goats and poultry;
- Same labelling requirements for online, distance-selling or buying in a shop;
- List of engineered nanomaterials in the ingredients;
- Specific information on the vegetable origin of refined oils and fats;
- Strengthened rules to prevent misleading practices;
- Indication of substitute ingredient for 'Imitation' foods;
- Clear indication of "formed meat" or "formed fish";
- Clear indication of defrosted products.

Serbia started harmonizing legislation and production practice with EU in 2001. While integration with EU from 2009 to 2014, 25 new laws and 80 subordinate normative acts have been accepted (Todua, 2017). From 2009 more than 500 objects introduced standards by recognizing the object with governmental grants/loans and machine consulting service purchase. Food labeling started in 2012. Serbia participates in trade control and expertise system, from 2012. The principles of HACCP are mandatory for large productions, in smaller productions (all sectors) functions flexible HACCP system. Requirements for the Good Hygiene Practice (GHP) and the Good Manufacturing Practice (GMP) are mandatory for all producers (Keenan et al., 2013).

In EU lots of reforms in food safety field were held before export of animal origin products. Nowadays there are 80 slaughterhouses and 183 refineries in Serbia; 54% of these facilities have HACCP certified system, 35% has flexible HACCP system, 8% is in introduction process, 3% has not started, yet (Nastasijevic et al., 2016). Traceability system is still on the development stage. Some of the small traditional manufacturers have problems with HACCP and traceability. The slaughterhouses must have records that give information about purchasing, slaughtered animals, about circulation of animal origin products and animal products traceability. Records must be kept for 3 years and must be presented to veterinary inspector, as requested. Total traceability is reached only on expert merchandise. One thing is clear: Stimulation the harmonization with EU rules and production practice increased meat export (Davidović et al., 2015).

Before joining the EU, the government of Slovakia approved legislation according to which the manufacturer could not sell traditional products without HACCP (Bonsmann et al., 2010). Because of this a lot of manufacturers became obliged to stop producing

products made from traditional meat. Import of such products from other countries increased.

1.3. Food labeling regulations in Georgia

Georgian legislation determines what kind of food label must be carried out for sale and what it must contain. In 2012 National Food Agency was repealed, after that fact a lot of problems accrued. On January 12, 2014 regulations about food safety became active again and fines about food labeling came into action. Many small and large enterprises got monetary fines because of violation in labeling and food safety in general.

Georgian legislation is pretty arranged in terms of food labeling, considering EU experience and recommendations, because all regulations active in EU member countries are formally written. Between them fundamental principles are: 1. Food name must be pointed out on the label of the food; 2. Product ingredients must be pointed out; 3. Content of proteins, fat and carbohydrate must be additionally pointed out on several types of foods; 4. Weight and volume must be indicated; 5. Producer country and trade mark of manufacturer and importer; 6. Date of manufacture and storage time; 7. It is necessary that label on the product must show "GMO" if more than 0,9% of weight of the grocery or its any ingredient consists of Genetically Modified product; 8. On the label near products name must be special sign or inscription in case if grocery was exposed to ionizer (for example in case of sterilization); 9. The label on the food must not detached easily; 10. Information placed on the label must be complete, understandable, noticeable, easy to read. Covering the inscription is unacceptable; 11. Placing written, printed and graphic images on the label is allowed; 12. Used ingredients in the food must be highlighted as – "Content", except for the cases when food contains only one ingredient; 13. Information on the label must be in Georgian language; 14. It is not mandatory to show shipment ingredient list, information about storage time and usage instruction for packaged food unit, surface of which is less than 10 cm; 15. Mandatory information about food and food raw foodstuffs used for realization in food points.

Georgian legislation is formally defining and arranging food labeling format, but in 2011 restrictions provided by law were canceled, that's why majority of manufacturers were not obeying the rules of labeling. In 2014 new regulations activated, according to which in case of breaking the law, the manufacturer is fined at first with 800 GEL, on second time with 1200 GEL. At the same time regulations of European Union activated, but situation in country is unprepossessing, because there are no affective suspend mechanism or institutions.

The web page www.momxmarebeli.ge (The project of The Centre for Strategic Research and Development of Georgia (CSRDG)) from 2014 is intensively checking food and other products. They have found violations of labeling regulations.

Except of The Centre for Strategic Research and Development of Georgia (CSRDG) National Food Agency monitors are checking food the whole year. Violations discovered during 2016-2017 are very interesting, but no information was found on the web-page about this period of time. In total we can say that statistic material about labeling violations is quite various and shows difficult and complex problems in this field.

The aim of the research is to study how the food labeling rules are preserved in Georgian shopping centers.

2. Materials and methods

Qualitative research methodology - Observation method was used for data gathering. Observation was conducted in three agricultural hypermarket of Tbilisi (Georgia). The object of the observation was 4 categories of food products: Meat and dairy products, bread, sweets (chocolate) and food made by hypermarkets. The selling places were chosen based on customer segment and production prices. Observations were conducted from 10.01.2018 - 10.03.2018.

3. Results and discussions

As a result of the observations revealed that different attention is paid to labeling standards in different selling centers. One of the most problematic issues is meat labeling. During the observation process, the best result in connection with labeling and security was in hypermarket Goodwill. It was possible to determine traceability on every label on meat product. Hypermarket Goodwill is basically selling "Marshe's" products. Company "Marshe" is Goodwill's subsidiary company and the only company in Georgia which has traceability in their network. Marshes production is completely fulfilling EU standards and is being exported to EU member countries.

Marshes production is also presented in "FoodMart" but only with meat line. Foodmart alongside with Marshes production presents meat products produced by Nikora and Ioli, which do not have fully preserved labeling standards. Production is placed in semi-open freezers, small signs with production prices are placed in front of the meat products, other information is not accessible for customers. In most cases prices take all the attention, which completely covers products whole characteristics. It is completely impossible to make out the manufacturer country, date of manufacture and other important information, it is especially hard to read the label on frozen meat product. Frozen meat products are usually presented with label, but in case to read the label you must take the product out of the freezer. In most cases labels on product placed in the freezer are damaged and it is impossible to make out the information. In terms of meat products, the hardest situation is on agricultural market, where all security and labeling norms are violated. Meat products are being sold in open field and unprotected from insects and pollution. Products placed on counters don't have labels and information cards, which gives opportunity to define traceability. Environment and practice in agricultural market can't stand any criticism and guaranty of safety for the customers is only certificates of uncertain origin, that are presented on the selling counters.

Compared to the meat products, labeling issue of dairy products is much more settled. All dairy product producers try to maintain labeling norms. The most distinguished dairy product companies are "Sante" and "Milko Food", labels on their production are fully relevant to the EU Association Agreement demands.

Basic violation with dairy product labeling is placing food name and ingredients in one particular vision area. Every diary product manufacturer has its own labeling model and do not have common approach. Regardless of the fact that product consistency, mass and calories on dairy products are following all labeling rules, their labels are still confusing for the customers, because in most cases information is spread on the different parts of the package. Information about expiration date, calories, proteins, fats and carbohydrates is spread on different parts of the package of products by Sante, Milko Food, Soplis Nobati, Margo. For example, in case of Sante information about expiration date is placed on cap, calories and ingredients on different sides of the main part of the sour milk package and in case of Milkofood, following information is placed on the basic package, which is really confusing for consumers and they have to specially inspect the package to get information interesting for them.

Goodwill and Foodmart network present sweets from different companies, the majority of which is mostly foreign. Most of the time chocolate bars do not have Georgian label, except of Georgian production- Barambo. Despite of the fact that Georgian label is absent, chocolate package has special table which gives detailed information about product content and calories. Ukrainian company Roshen is distinguished in violation of labeling norms, which is presented in wide spectrum in all trade centers. Sweets presented by Roshen are sold by weight and is not packaged in small packages. In such cases customers do not have any information about

production ingredients, expiration date, calories and are left only with information given by market consultants.

Mostly problematic is integrated production presented in trading places (Todua, 2017). Hypermarkets Goodwill and Foodmart are presenting their own ready food, sweets, baked goods, salads and etc, that has no information except price. In case of Goodwill customers have possibility to eat those dishes in markets open cafe, but this café does not have a menu, which would show ingredients and calories.

Seasonally the most popular ready food is so cold, fresh salad which is made by mixing different types of vegetables, customers have opportunity to make salad by their demand, also they can choose ingredients and their proportions themselves and additive ingredients such as chicken meat, cheese, mayonnaise and different types of oil. In this labeling norm are also violated, because in case of meat, cheese and mayonnaise we can't see calories, ingredients, producer country and most of the customers have to "blindly" buy those products.

Overall labeling norms are mostly preserved on packaged products, that get to hypermarkets after special inspection. In case of ready food, customers have information only about weight, which is used for detecting products price.

The hardest situation is in case of bread. Georgia does not have the opportunity to check bread paint in laboratory (Todua, 2017). Goodwill and Foodmart presents dozens of bread types, produced by different companies, the majority of which is labeled. The most distinctive type of bread in case of labeling is black bread, but the white bread, especially baked by Georgian traditional method, like "Shoti" bread, has no informative label about its content, weight and calories.

Despite the fact that black bread has labels which follows all standards, reliability of this information is quite suspicious, because country does not have the opportunity to check bread paint in laboratory and the checkup is not made abroad because of the expenses, consumers can not be sure that production bought as black bready is really black bread.

Despite the fact that many statements about labeling violations are sent to the National Food Agency, the condition still remains bad, because on this stage the National Food Agency does not have relevant human resources, to effectively solve such cases.

Constant monitoring is mandatory to protect safety norms in food products (Sharma et al., 2010). The object where the production is presented is responsible for food norms. But one is label compliance with the legislation and second is label compliance with the product itself. Laboratory research is mandatory to determine if the label shows the exact ingredients of the food, which does not happen at all in case of black bread and in case of other production, analysis is made in laboratories selected by tender.

4. Conclusions

Despite regulations that exists on formal level and existence of National Food Agency and also several active projects within partnership with European Union, situation in Georgia is quite hard, which is eye-catching during every visit to selling objects. The situation is complicated with lack of information from consumers and spurning food safety norms from their side. During the observation process, consumer behavior was also observed. It is hard to find such buyers who are interested in information placed on the label, instead they are more interested with price.

Because solving the problems with food labeling, will not be managed only by the National Food Agency, it is important to increase consumers awareness and actively turning them into those processes. Alongside the monitoring managed by the National Food Agency, hot line is always in contact with consumers and they can inform about violations, but on the first stage the culture of buying safe food must be established, that's why informative-preventive events must be conducted by the government, so that all duties taken in within the EU Association Agreement will be fulfilled and produce safe product, focused on customer's interests.

References

[1] Alpert, P.T. (2015). Super Foods with Medicinal Properties. *Home Health Care Management and Practice*, 28(2):127-129. [Crossref]. https://doi.org/10.1177/1084822315586778.

[2] Asatiani, M., Verulava, T. (2017). Georgian Welfare State: Preliminary Study Based on Esping-Andersen's Typology. *Economics and Sociology*, 10 (4): 21-28. [Crossref], [Google Scholar]. https://doi.org/10.14254/2071-789X.2017/10-4/2.

[3] Berdzuli, L. (2016). Bringing EU food safety standards to Georgia: a story of success. European Union External Action. [Link].

[4] Bonsmann, S., Celemín, L.F., Larrañaga, A., Egger, S., Wills, J.M., Hodgkins, C., Raats, M.M. (2010). Penetration of nutrition information on food labels across the EU-27 plus Turkey. *European Journal of Clinical Nutrition*, 64:1379–1385. [Google Scholar] [PMC]. https://doi.org/10.1038/ejcn.2010.179.

[5] Davidović, DB, Tomić, DV, Paunović KŽ, Vasiljević, ND, Jorga, JB. (2015). Nutrition labelling of pre-packaged foods in Belgrade, Serbia: current situation. Public Health Nutr, 18(11):1969-78. [PubMed], [Google Scholar]. https://doi.org/10.1017/S1368980014002353.

[6] Emerson, M., Kovziridze, T. (2016). Georgia and Europe, A short guide. Centre for European Policy Studies, Brussels. [Link], [Google Scholar].

[7] European Commission (EC). (2018) Food information to consumers – legislation. [View at Publisher].

[8] Europe Foundation (EF). (2017). Food Safety Regulation in Georgia: Assessment of the Government's Reform Efforts in 2016. Europe Foundation. [Link].

[9] Fox, J. A., and H. H. Peterson. (2002). Bovine Spongiform Encephalopathy (BSE): Risks and Implications for the United States. Proceedings of the NCR-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management. St. Louis, MO. [Link].

[10] Ganpat, W., Kathiravan, G., Dalrymple, J. (2018). Use of Food Label Information by Trinidad Consumers and Implications for National Health. *Journal of Agricultural and Food Information*, 19(2):121-128. [Crossref], [Google Scholar]. https://doi.org/10.1080/10496505.2017.1374188.

[11] Georgian Law (GL). (2012). Code on Products Safety and Free Turnover. Parliament of Georgia. [Link].

[12] Georgian Law (GL). (2014). labeling of the genetically modified organisms intended for food or fodder and genetically modified productsmade of them. Parliament of Georgia. [Link].

[13] Hong, J., Lee, H. (2018). Culinary recipe recommendation based on text analytics. International Journal of Engineering and Technology, 7(4):5-6. [View at Publisher]. https://doi.org/10.14419/ijet.v7i4.4.19591.

[14] Keenan, S., Hammond, J., Bjegović-Mikanović, V., McGuinn, J., Petrović, D. (2013). Food safety and public health situation in Serbia. Directorate General for internal policies, policy department. European Parliament's Committee on Environment, Public Health and Food Safety. [Link].

[15] Key Consumers Rights (KCR). (2013). Web site of Georgian Strategic Researches and Development Center.

[16] Legislative Act (LA). (2009). Additional requirements to food products labeling. Parliament of Georgia. [Link].

[17] Lysenko, M. (2014). The problem of ensuring the economic security of dairy industry in Ukraine. *Economics and Sociology*, 7(2):160-171. [Crossref], [Google Scholar]. https://doi.org/10.14254/2071-789X.2014/7-2/13.

[18] Mahesh, C., Kingston Stanley, P., Vijaydaniel, P., Saneevi Gandhi, A. (2018). Embedded design consideration for the implementation of food intake monitoring system: Validated using LabVIEW software. International Journal of Engineering and Technology, 7(2):47-51. [View et Publisher]. https://doi.org/10.14419/ijet.v7i2.8.10322.

[19] Meskhia E. (2016). Food security problems in post-Soviet Georgia. *Annals of Agrarian Science*. 14 (2):46-51. [Crossref] [Google Scholar]. https://doi.org/10.1016/j.aasci.2016.03.004.

[20] Nastasijevic, I., Tomasevic, I., Smigic, N., Milicevic, D., Petrovic, Z., Djekic, I. (2016). Hygiene assessment of Serbian meat establishments using different scoring systems. Food Control, 62:193-200. [View at Publisher] [Google Scholar]. https://doi.org/10.1016/j.foodcont.2015.10.034.

[21] Okoye, U.O., Ngwu, C.N., Tanyi, P.L. (2015). Knowledge of nutritional and health needs of children among rural residents of Enugu North Senatorial zone in Enugu state, Nigeria. *International Quarterly of Community Health Education*, 35(2):148-163. [PubMed] [Google Scholar]. https://doi.org/10.1177/0272684X15569489.

[22] Phull, S. (2015). The mediterranean diet: Socio-cultural relevance for contemporary health promotion. *Open Public Health Journal*, 8(1):35-40. [Crossref] [Google Scholar]. https://doi.org/10.2174/1874944501508010035.

[23] Reshetnikova, E.G., Reshetnikova, N.V., Iosipenko, V.D. (2018). Risks and threats to Russia's food security: The current situation and tools for remedying it. International Journal of Engineering and Technology, 7(4):402-405 [View at Publisher].

[24] Sharma, LL, Teret, SP, Brownell, KD. (2010). the food industry and self-regulation: standards to promote success and to avoid public health failures. Am J Public Health. 2010; 100(2):240-6. [PMC] [Google Scholars]. https://doi.org/10.2105/AJPH.2009.160960.

[25] Todua, L. (2014). Food Regulations in the European Union. Food labeling. Tbilisi. [Link].

[26] Todua, N. (2017). Influence of food labeling awereness on healty behavior of Georgian consumers. *Ecoforum*, 6 (2). [Link] [Google Scholar].

[27] Türközü, D., Ayhan, B., Köksal, E. (2017) The nutrition transition in Turkey: Trends in energy and macronutrients supply from 1961 to 2011. *Gazi Medical Journal*, 28(4):283-288. [Crossref] [Google Scholar].

[28] Urotadze, E., Mghebrishvili, B.D. (2016). Characteristics of Food Products Labeling in Georgia. International Scientific Symposium "Economics, Business & Finance". Proceedings. Jurmala. [Link].

[29] Verulava T., Dangadze B. (2018). Health Capital and Economic Growth: Evidence from Georgia. The Open Public Health Journal. 11:401-406. [Link] [Google Scholar]. https://doi.org/10.2174/1874944501811010401.

[30] Verulava, T. (2018). Pension System in South Caucasus: Challenges and Reform Options. Bulletin of the Georgian National Academy of Sciences, 12 (1):168-174. [View at Publisher], [Google Scholar].

[31] Wickham, C.A, Carbone, E.T. (2018). "Just Say It like It Is!" Use of a Community-Based Participatory Approach to Develop a Technology-Driven Food Literacy Program for Adolescents. *International Quarterly of Community Health Education*, 38(2):83-97. [Crossref] [Google Scholar]. https://doi.org/10.1177/0272684X17749572.