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## **FOOD SAFETY AMONG AND BEYOND: THE POWER OF MARKET ACTORS, INSTITUTIONS AND RESEARCHERS IN THE NEW ERA OF FOOD SAFETY FROM FARM-TO-TABLE**

**Purpose.** *The study objective is to assess the impact of a number of factors, such as buying and psychological behaviours, experience, knowledge and information about food quality and safety, trust in actors and institutions, risk perceptions, safety knowledge and willingness to pay, increased risks in last years and change in consumption, on the food safety of conventional agricultural products (vegetables) in the markets of the city of Tirana, Albania.*

**Methodology / approach.** *The questionnaire used for achieving the study objective was initially discussed at the level of a focus group and after improvements was used in food markets of agri-products in the city of Tirana, Albania. Interviewing process (220 persons) was carried out according to the procedure of the random choice and an appropriate statistical model was used.*

**Results.** *The study presents an assessment of the impact of some important factors to food safety and the specifics of recent years, illustrated by a research on the markets of conventional agri-products in Tirana, Albania. The results suggest special attention to the sustainability of food safety in the new era through coordinated actions of the key actors in the agri-food chain, governmental institutions, and especially researchers, considering the material and social concerns of the functioning of markets, building new consumption models and risk managements strategies.*

**Originality / scientific novelty.** *In addition to a simplistic approach, the problem of food safety in Albania is related to the multi-plane development, regarding the functioning of institutions (eg formal, informal) and trust in them, actors in markets (eg producers, retailers, wholesalers, etc.) or socio-economic phenomena (eg migration, etc.), as factors that may affect differently to food safety. Sustainability of food safety is important for agricultural production, sustainable consumption and trade, which represent sectors with scope and importance for the country's economy. Based on the multidisciplinary and multidimensional aspects of a wide group of factors (eg external, internal, etc.) acting in a predictable or unpredictable way and influencing food safety, the identification of possible links of some more specific ones in the case of Albania is of particular research interest and in its essence it represents a new approach applied in the country's studies in that field.*

**Practical value / implications.** *In the new era of science and innovations, of smart techniques and policies and consumers' behaviours, characterized by the interaction of a multitude of factors, the research focus on the food safety is reasonable and makes a particular sense. The study may be useful in several aspects, and especially for (1) consumer protection agencies; (2) agricultural producer units; and (3) future research given the challenges of food safety in the new era.*

**Key words:** *food safety, farmers, governance, Albania.*

**Introduction and review of literature.** Food safety in the new era represents a research subject of great importance everywhere in Europe. The effects of environmental-climatic events and COVID-19 pandemic and lockdowns have not been the only ones of recent years. The increase of the main agri-prices, the previous problems in the international markets (eg milk – melamine), known issues (eg aflatoxin in fruits, maize, etc.) which are addressed attentively between the Balkan countries [1], and especially recent data on the risk of cereals (eg acrylamide, etc.), have raised concerns about the sustainability of food safety everywhere. These dynamics and quick implications have increased the research focus on food safety in Albania as well. While it is fundamental for consumer protection, daily turnovers and the system sustainability, food safety, it also acts as an important market sub-policy, since the safest product means a higher production standard, i.e. more competitive advantage and this is widely perceived in the food markets and especially in exports.

The issue of food safety in Albania is complex involves multifaceted developments regarding to the functioning of institutions (eg formal, informal) and trust in them, actors in markets (eg producers, retailers, wholesalers, etc.) or socio-economic dynamics (eg migration, etc.) as factors that may affect food safety with varying intensities. Sustainability of food safety is important for agricultural production, sustainable consumption and trade, which represents sectors with scope and importance for the country's economy. Moreover, in the new era of science and innovation, smart policies and complex networks and consumers groups, whose behaviours are characterized by the interaction of many factors, the research focus on a smarter food safety is reasonable and makes sense.

Based on the multidisciplinary and multidimensional aspects of a wide group of factors composition (eg external, internal, etc.) acting in a predictable or unpredictable by determining the level of food safety, identification of possible links of some more specific variables in the case of Albania is of particular research interest. Considering the importance of economic-institutional factors, we can testify the influence of information of key actors in society and trust in them; market composition – with a wide-mix segmentation as a response to fragmented demand that is largely defined by lower income groups, cultures, etc., expressed according to levels such as buying on the street, shops, supermarkets or farms; psychological factors as part of consumer behaviour – such as past experiences, or safety knowledge and consumer perceptions on multifaceted environmental, bacterial, hormonal risks, may be factors with potential impact to food safety. Climate change or shocks (eg earthquakes in Albania, 2019, etc.) as well, including socio-economic consequences may cause an increase in the perception of general risk, with impact on consumption and willingness to pay; technological-technical factors, such as the use of chemicals, additives/hormonal ones considering the insufficiency of farmers knowledge about new inputs and/or the lack of market adjustments (and eg consequences on strong price amplitude by seasons) which acts as extra-incentives for farmers to use more hormonal for faster fruit ripening or coloring and achieve higher prices and maximize profits (eg earliness in greenhouses) may also expose this

particularly group-factors as factors with impact to food safety. Providing a quantitative–qualitative observation of a wide number of variables, according to groups such as: (1) market actors; (2) trust in institutions; (3) trust in information; (4) risk perception; and (5) psychological ones to food safety, the study may be useful for consumer institution – associations, practically for the agricultural production segment and theoretically for future research given the importance of food safety and current challenges related to production quality – standards and effects, etc.

Discussion on food safety represents a central issue in today's economics [2]. While there is no final definition for 'food safety' terminology, its culture and the conceptual perspectives are multidimensional. Within new conceptualizations (by EU model) such as from farm-to-fork (or similar eg from fish-to-dish [3]), scholars have researched the impact of new institutional and techno-developments (eg AI, nanotechnologies, etc.), the use of new inputs (eg innovative bio-engineering, etc.), chemicals and climate implications, the terrorist challenges or the effects of global shocks (eg COVID-19 pandemic) for food safety in the new century [4–10].

The authors claim that foodborne outbreaks and diseases have been reported when consumers buy in the shop markets, impacting on food sustainability and safety [11]. Food safety involves the food supply chain and many food safety incidents happen in shop markets [12]. In observed cases in developed countries, fresh vegetables with chemical pesticide contamination in supermarkets have raised concerns to food safety [13]. The expansion of supermarkets in developing countries and local private standards used may also raise concerns on food safety [14]. Although in some regions of Germany, consumers buy products directly from farmers because of food quality and safety, and this requires more attention [15], research support that buying in the farm requires measures and supervision over food quality standards and food safety [16]. Moreover, food buying characterized by street marketing, semi-markets, and buying in the street, may affect food safety [17]. On the other hand, food is important for understanding social change and buying on street is part of culture and affects food safety in post-communist countries [18].

The trust in producer groups and farmers affects food safety [19; 20]. The trust in retailers also affects sustainable consumption [21] and is directly positively related to food safety [22]. The trust in wholesalers affects food safety [23], and the confidence and trust in the various actors and wholesalers is emphasized as crucial for food safety [24]. Also trust in public institutions and governance affect food safety [25], being understood as the government's ability to act to ensure food safety [26].

The trust in government information is important for farming, agri-production and food safety [27]. Moreover, the unregulated developments and information of governmental actions affect food safety [28]. The perceptions of the impact of wholesalers' information on food safety vary between EU countries [29], and the information of wholesale and retail distribution networks of food affects food safety [30]. The information of retailers about quality and healthy food affect food safety [31]. The information of researchers is essential for food safety [32], and the role of

information research and assessments to food safety in Europe was emphasized [33]. The information spread through media is important to understand the dangerous nature of food diseases, mechanisms of transmission and can also affect food safety [34]. Media information creates a food risk and affects food safety [35]. Technologies and information on the Internet improve the choice of agents by affecting food risks and safety [36], and especially the information from the Internet helps farmers understand the risks of diseases with consequences for food and food safety [37].

The perception of increased risks affects food safety [38; 39]. The formation of acrylamide in cereals may affect consumption reduction and perceptions on quality and dietary food intake with consequences to food safety [40]. Maintaining good hygiene practices along the food chain is very important for preventing microbial contamination and growth as issues related to food safety [41]. Bacterial diseases that occur in different trout farming regions affect quality and food safety and have been included in the surveillance program for prevention, control and eradication in accordance with the requirements of the European legislation [42]. On the other hand, the continued use of pesticides affecting health and nutrition [43], represents a risk to food safety [44]. Due to food safety concerns, the EU has long banned imports of hormone-treated foods from other trade partners and developed countries [45]. Among the risk factors, the impact of new environmental factors is important for humans, animal health and especially food safety [46; 47]. Given the new scientific and technological innovations, a new specific food safety system has been developed in the EU with a focus on the traceability and quality of inputs and hormones for conventional farms [48].

Past experiences may also affect food safety [49] and food quality and safety are known through use and experience [50]. Knowledge has been found to influence effective food safety [51], and knowledge about culture and safety can greatly influence food safety [52]. The willingness to pay is associated with food risk, reliable healthy diets and food safety [53]. The willingness to pay is also related to production according to EU conditions and legislation and affects food safety [54]. Reducing consumption and food intake affects healthy nutrition and food safety [55].

**The purpose of the article.** The study aims to assess the impact of a wide range of factors according to groupings such as *market actors* represented by variables: buying in minimarket, buying in supermarket, buying in farm, buying in street; *trust in institutions* and variables: trust in farmer, trust in retailer, trust in wholesaler, trust in governance; *trust in information* and variables: information of governance, information of wholesaler, information of retailer, information of researchers, information of media, information of the Internet; *risk perception* by variables: bacterial risk, pesticide risk, environmental risk, hormonal risk; *psychological factors* such as variable experience and variables safety knowledge, willingness to pay to food safety of conventional agricultural products (vegetables), in the markets of the city of Tirana, Albania.

The study hypotheses have been grouped as follow:

*Market actors*



H<sub>1</sub> – Food safety of agricultural products is positively affected by the increase in the level of buying in minimarkets, supermarkets, farms, and street shops.

*Trust in institutions*

H<sub>2</sub> – Food safety of agricultural products is positively affected by increased trust of farmers, retailers, wholesalers, and the governance.

*Trust in information*

H<sub>3</sub> – Food safety of agricultural products is positively affected by the increase of information from wholesalers, governance, retailers, researchers, media, and the Internet.

*Risk perception*

H<sub>4</sub> – Food safety of agricultural products is positively affected by the increase in the level of perception on bacterial risk, pesticide risk, environmentally risk, and hormonal risk.

*Psychological factors*

H<sub>5</sub> – Food safety of agricultural products is positively affected by past negative consumption experiences.

*Other hypotheses*

H<sub>6</sub> – Food safety of agricultural products is positively affected by the increased level of knowledge about safety.

H<sub>7</sub> – Food safety of agricultural products is positively affected by the increased willingness to pay more for food products.

Two questions of research interest (RQs) also are included:

R<sub>Q1</sub> – Does increased risks in the last 5 years affect the increase of food safety of agricultural products?

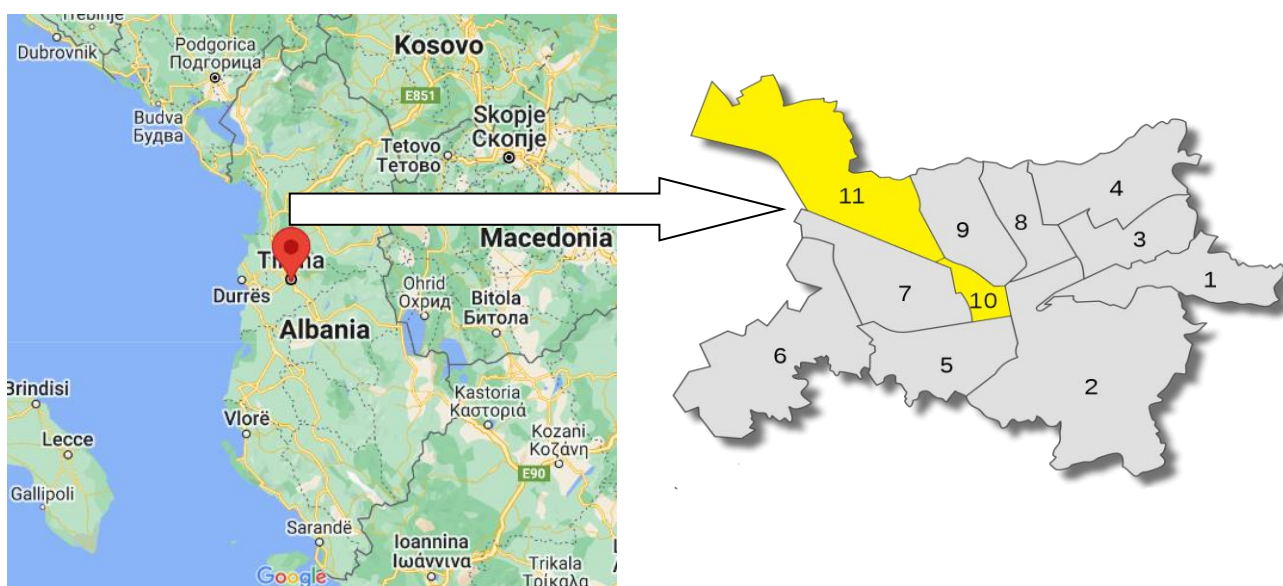
R<sub>Q2</sub> – Does consumption reduction in the last 5 years affects the increase of food safety of agricultural products?

*Methodology.* To study the food safety problem of conventional products (vegetables), as the main part of the trade of agricultural food products in the country and taking into account the latest challenges or possible perceptions (eg migration, growth slowdown, earthquake in Albania in 2019, COVID-19 pandemic consequences, etc.), a multidimensional and multidisciplinary review of the literature was made. This includes both specific and broad complex issues at the same time, such as diseases (eg bacterioses) according to a variety of agricultural crops, technological innovations (eg software, etc.) in some activities (eg livestock) and the light of new social-psychological theories (eg post-consumption behaviour) and their possible impact on the segment of food (vegetable) markets and especially on food safety.

The sociological survey is used to assess the impact of factors on the food safety of conventional agricultural products (according to the example of the market of vegetables) in the city of Tirana in Albania. In accordance with the study estimation strategy, the questionnaire was divided into 4 sections: (1) in the first part (in a standard way) there were questions on socio-demographic data; following (2) the market (and commercial units), characteristics and attributes of the vegetable

purchase (variety, origin, color, etc.) and perception(s) on the level of food safety, etc.; (3) consequences of food insecurity and (level of) trust in information sources and key actors; and (4) recent food security risks and the next (5 years) perspective.

The questionnaire was initially discussed at the level of a focus group and after improvements was prepared for use in food markets in the study area (Figure 1) part of the municipality of Tirana and was performed during February – April (2021). Difficulties of measurement anticipated and observed during the discussion in the focus group (eg risk perception, self-assessment on food safety, knowledge, trust etc.), determined the way of interviewing (face-to-face) and the researchers and the group of interviewers carried out the interviewing process. The interview process (~ 20 min/each interview) took place in the defined administrative units and respectively in the mini-municipality no. 10 (~ 27,700 inhabitants) and no. 11 (~ 65000 inhabitants). Based on the theoretical approach (Central Limit Theorem Approach), in the study area (~ 92,700 inhabitants) with adequate confidence level (95%) and accuracy (7%) and within the parameters (>100,000 population), the representative sample size of 220 persons was considered valid [56].



**Figure 1. Study area: mini-municipalities no. 10 and 11 in the municipality of Tirana, Albania**

*Source:* processed by authors using Google Maps.

The interview was conducted in 2 heterogeneous units according to random choice procedure and after adjustments (Table 1) of the variables under review (measured by levels from 1–5), a statistical data summary (Table 2) and the appropriate statistical model (Table 3) were used.

**Results and discussion.** From the point of view of the socio-demographic structure of the sample, it is noticed that gender of the respondents consists of 55% female and 45% male. The religiousness consists of 59.5% Muslim, 31.8% Christian and others 8.7%. Age up to 24 years old are 6.8%, 25–34 years are 25.45%, 35–49 years are 35%, and 50–64 are 26.36% and over 65 years are 6.38%. Education

starting from the first level with primary school are 18.2% of the respondents, with secondary school are 42.8%, and 39% of them have university degrees. The number of family members, starting from 1 member family consists of 0.4%, families with 2–3 members are 17.3%, families with 3–4 members are 47.3% and over 5 members are 35% of them. Employment status starting from the family without any employees are 0.45%, with only 1 employee are 10%, family with 2 employees are 43.7%, family with 3 employees are 31.3% and over 4 employees are 14.54%. Monthly family income starting from 50000 ALL (~ 410 Euro) are 10.4%, between 51000–75000 ALL (420–615 Euro) are 22.2%, at the level 76000–100000 ALL (622–822 Euro) are 28.2%, 101000–150000 ALL (825–1230 Euro) are 18.2%, and 151000–250000 ALL (1238–2050 Euro) are 11%, and income over 251000 ALL (over 2052 Euro) 10%.

The variables under consideration are classified according to scales (1–5), where adapted for the measurement procedure (Table 1).

*Table 1*

**Adjustment of concepts in variables**

Concept	Variable
<i>Dependent variable</i>	
Food safety	Food_saf
<i>Independent variables</i>	
Buying in minimarket	Buying_in_minim
Buying in supermarket	Buying_in_superm
Buying in farm	Buying_in_farm
Safety knowledge	Safety_know
Experience_negative	Exper_negativ
Bacterial risk	Bacter_risk
Pesticide risk	Pesti_risk
Environmental risk	Env_risk
Hormonal risk	Horm_risk
Trust in farmer	Trust_in_farm
Trust in retailer	Trust_in_retail
Trust in wholesaler	Trust_in_who
Trust in governance	Trust_in_gov
Information of governance	Info_of_gov
Information of wholesaler	Info_of_who
Information of retailer	Info_of_retail
Information of researchers	Info_of_resear
Information of media	Info_of_med
Information of the Internet	Info_of_intern
Increased risk	Increas_risk
Consumption reduction	Cons_reduct
Willingness to pay	WTP
Buying in street	Buying_in_str

*Source:* data processed by authors.

The summary statistic is presented using the linear model (Table 2).



*Table 2*

**Summary statistics using the observations**

Variable	Mean	Median	S.D.	Min	Max
Buying_in_minim	3.53	4.00	1.210	1.00	5.00
Buying_in_superm	2.89	3.00	1.310	1.00	5.00
Buying_in_farm	1.92	1.00	1.310	1.00	8.00
Safety_know	3.22	3.00	0.972	1.00	5.00
Food_saf	2.92	3.00	1.050	1.00	5.00
Exper_negativ	2.48	2.00	1.420	1.00	4.00
Bacter_risk	3.64	4.00	1.170	1.00	5.00
Pesti_risk	3.78	4.00	1.040	1.00	5.00
Env_risk	3.39	3.50	1.140	1.00	9.00
Horm_risk	4.18	4.00	0.952	1.00	5.00
Trust_in_farm	1.95	2.00	0.949	1.00	5.00
Trust_in_retail	2.69	2.00	1.610	1.00	22.0
Trust_in_who	2.54	2.00	0.862	1.00	5.00
Trust_in_gov	2.91	3.00	0.956	1.00	5.00
Info_of_gov	2.62	3.00	1.250	1.00	5.00
Info_of_who	2.79	3.00	0.974	1.00	5.00
Info_of_retail	2.63	3.00	0.970	1.00	5.00
Info_of_resear	2.88	3.00	0.921	1.00	5.00
Info_of_med	3.43	4.00	0.801	1.00	5.00
Info_of_intern	3.89	4.00	0.689	2.00	5.00
Increas_risk	1.10	1.00	0.295	1.00	2.00
Cons_reduct	1.19	1.00	0.391	1.00	2.00
WTP	2.06	2.00	0.670	1.00	3.00
Buying_in_str	3.22	3.00	1.370	1.00	5.00

*Source:* data processed by authors.

The significance of factors / variables under review to food safety is presented by a statistical model (Table 3).

The study identifies the above group-variables with a potential to affect food safety: buying in minimarkets, buying in supermarkets, buying on the farm, buying on the street; negative experience; risk perceptions of bacterial risks, pesticide risks, environmental risks, hormonal risks; trust in farmer, retailer, wholesaler, institutions; trust in information: information of governance, information of wholesaler, information of retailer, information of researchers, information of media, information of the Internet; safety knowledge; willingness to pay; consumption; increased risks (in last 5 years).

The measurement of the variables under review (see Table 3), shows that buying in supermarket, buying in farm, buying in street, negative experience, bacterial risk, trust in wholesaler, information of wholesaler and information of media do not statistically affect food safety. In response to two research questions, the estimated results showed no effect of increased risk and consumption reduction on food safety. Although the reduction in consumption may not have been greater than the increase in shopping intensity during lockdowns, perhaps increased risk perception deserves a more specific study, given the high dynamics in just a few months (eg pandemic

situation, lockdown, increase in product prices nutrition, climate, etc.) and numerous social, economic-budgetary, technical, institutional consequences (for example, functional risk management strategies), etc.

*Table 3*

**The significance of variables by a statistical model**

Model 2: Heteroskedasticity-corrected, using observations 1–220 (n = 196)				
Missing or incomplete observations dropped: 24				
Dependent variable: Food safety				
Variable	Coefficient	Std. Error	t-ratio	p-value
Const	3.27242	0.5234960	6.2510	<0.0001***
Buying_in_minim	−0.0963189	0.0468927	−2.0540	0.0415**
Buying_in_superm	0.00626911	0.0406537	0.1542	0.8776
Buying_in_farm	0.0523969	0.0365181	1.4350	0.1532
Safety_know	0.254417	0.0720231	3.5320	0.0005***
Exper_negat	−0.00584455	0.0421270	−0.1387	0.8898
Bacter_risk	0.0580767	0.0461786	1.2580	0.2102
Pestici_risk	−0.185482	0.0623392	−2.9750	0.0033***
Env_risk	−0.163273	0.0463377	−3.5240	0.0005***
Horm_risk	−0.102689	0.0558700	−1.8380	0.0678*
Trust_in_farm	0.138747	0.0689359	2.0130	0.0457**
Trust_in_retail	−0.0662803	0.0338922	−1.9560	0.0521*
Trust_in_who	−0.0141264	0.0754201	−0.1873	0.8516
Trust_in_gov	0.253988	0.0639288	3.9730	0.0001***
Info_of_gov	0.134555	0.0532049	2.5290	0.0123**
Info_of_who	−0.0409379	0.0781333	−0.5239	0.6010
Info_of_retail	−0.176963	0.0730321	−2.4230	0.0164**
Info_of_resear	0.226559	0.0643933	3.5180	0.0006***
Info_of_med	−0.0449440	0.0492913	−0.9118	0.3631***
Info_of_intern	−0.268854	0.0789041	−3.4070	0.0008
Increas_risk	−0.0539234	0.1946820	−0.2770	0.7821
Cons_reduct	0.129454	0.1414730	0.9150	0.3614
WTP	0.158824	0.0875007	1.8150	0.0712*
Buying_in_str	0.00449238	0.0428802	0.1048	0.9167
Statistics based on the weighted data:				
Sum squared resid	518.2651	S.E. of regression	1.735848	
R-squared	0.568527	Adjusted R-squared	0.510830	
F(23, 172)	9.853680	P-value(F)	4.00e-21	
Log-likelihood	−373.4044	Akaike criterion	794.8089	
Schwarz criterion	873.4836	Hannan-Quinn	826.6602	
Statistics based on the original data:				
Mean dependent var	2.897959	S.D. dependent var	1.032694	
Sum squared resid	156.3229	S.E. of regression	0.953338	

*Note.* \*, \*\* and \*\*\* are significant at  $p < 0.1$ ,  $p < 0.05$ , and  $p < 0.01$ , respectively.

*Source:* data processed by authors.

Consequently, the level of trust in the farmer and governance increases; information provided by the government, the level or amount of information provided

by researchers, and consumers' willingness to pay (WTP) also have a positive effect. The findings are consistent with how they were hypothesized, and the studies support the importance of WTP to food safety systems among European countries [57]. Contrary to the hypothesis, increased trusts in retailers and increased information provided by the retailers and through the Internet have negative impact on food safety. Nowadays, people use Google, but cannot properly distinguish scientific knowledge and reliable sources from extensive, and in some cases, inaccurate information. The literature is divided on the positive impact of the Internet on food safety. Authors emphasize that online procedures or informing by portals in some cases may evidence a prevalence of misleading advertising or other risky consequences to food safety [58]. Contrary to the set expectations, variables such as buying in minimarkets, and negative experiences, perceptions about pesticides, hormonal and environment risks negatively affect the level of food safety. Among the above variables (6) that measure trust in information from different sources, variables information of wholesaler and information of media have no impact on food safety. Insignificance and the gap of trust in the information of media given its primacy as a reliable daily source for the formulation of developmental challenges (eg risks from fake news, etc.) which moreover is the most founded among others sources of information, perhaps deserve more attention. The media should consider multi-directional developments (predictable or not), providing perspective on the reliability of information in (all) areas where a high degree of expertise is required. In the information society, everyone is a consumer of a multitude of sources and people feel 'citizens of the world' due to access to (reliable) information. Reliable information flows according to entropy levels from professionals to others, and that implies the case of a developed functional media that reinforces trust in institutions and information channels in society based on objective factology and scientific-innovative methods.

A clear picture of the findings can be as follows: it is very likely that food safety is perceived to be lower by those who usually shop in minimarket, who perceive higher risk from pesticides, higher risk from environment, higher risk from hormones, from those who trust in retailers and their capabilities of providing food safety, from those who consider information of retailer and the information from the Internet to be important sources. Food safety is perceived higher by those who have more knowledge about safety, who have more trust in the ability of farmers, who trust in the government capabilities as a reliable source of information about food safety problems, who trust in the information of researchers and those who are more willing to pay a higher premium for a better and safer food (vegetable) product. However, given the sample size or the problems encountered during the interview process and the complex and diverse level and knowledge level of consumers on some specific issues (eg diseases, bacteria, etc.), or psychological (past experiences, ability to take risks, etc.) there may be subjectivism or inadequacy. While the findings may be valid or comparable in the local context in term of generalizability, there may be limitations. Nevertheless, a reasonable question arises here: do

consumer protection associations exist and are they effective enough? There seems to be a gap between growing food safety concerns throughout Europe and Albania and the actual absence and/or ineffectiveness of associations and institutions. This may be especially true for consumer protection associations, as citizens themselves can be better advocate for their interests. High levels of migration and consequences in production (eg the level of social capital) and trade systems, trade lockdowns and access to domestic markets and exports or missing policies, recent price increases for agricultural products highlight the need to increase the presence of consumer organizations given the distances that may have been deepened between producers and consumers, actors or other parties (eg service providers, retailers, etc.). The contribution of consumer associations or other groups for identifying problems, informing, and educating consumers with contemporary issues is essential.

Based on the concerns over the perception of the last 5 years on the potential risks and the impact on consumption (according to research questions) in the measurement two variables were included: increased risk and consumption reduction, contrary to how they were originally assumed, both do not have impact on food safety.

Among the variables, that measure trust in information from different sources it is impressive the variables: information of wholesaler and information of media have no impact on food safety. Insignificance and distrust of the media information based on its primacy as a reliable-clear source (eg risk from fake news, etc.) in the formulation of developmental challenges deserve attention. The media should reassess competencies, especially in areas such as food safety (or in all areas) where a high level of multidisciplinary skills is required and where a high level of expertise is required, there is no place for simple minds or amateurism.

Other variables such as shopping in minimarket, safety knowledge, pesticide risk, environmental risk, hormonal risk, trust in farmer, trust in retailer, trust in governance, information of governance, information of retailer, information of researcher, information of internet and willingness to pay have a high (up to very high) impact on food safety.

Future decades are expected to be more complicated and there are numerous indications that testify the growing trends of concerns that will affect the sustainability of food safety (eg pandemics, climate, food prices, etc.). This means that the capacities for identifying increased risks and (even regional) management strategies should be considered a priority for institutions in the new era in Albania as well. The current challenges facing humanity everywhere but specifically in some regions and the consequences imply the need for more innovative-efficient-instruments and new institutions capable of accurately predicting, understanding, and react appropriately to the importance of situations. This means that more and better is required by all actors and institutions, where increased confidence to them in modern society is clearly related to their efficiency. Paul emphasizes that the institutional transformation in the field of food safety at the EU level is based on the role of scientific expertise [59]. The need for a new empathy between institutions and

researchers and the main actors as an opportunity to meet new challenges is a perspective supported widely by important actors, cultured minds or prestigious forums. For years, leading researchers and political actors have appealed and articulated on the growing concerns, underlining the importance of functioning institutions and their capacity to respond effectively. Merkel has made it clear that more self-understanding is needed to address the key problems, providing the example of a professional methodological approach (eg conceptualization of the pandemic crisis) with impressive results in economy and especially exports. Macron calls for new goals and outcomes in the new era by highlighting new innovations (or especially social innovations). Krugman points out that all trade policy instruments have been exhausted for years and more is required of decision makers and the new developmental paradigm of the XXI century [60], predicts clearly that for achieving new results in the new era and creating new ecosystem networks, more skilled and qualified people with new culture and special abilities are required.

In the social sciences, the institutions and legitimacy are considered synonymous and a core argument for institutional perspective regarding the role of knowledge to institutional functionalism is explained by the theory of structuration [61], and Giddens highlight that social actor know the conditions of reproduction in society and ignorance of this represents a basic inadequacy to institutional functionalism [62].

Moreover, here we consider the complexity of new and old challenges such as innovation-technological, climatic, institutional, economic (eg the level of integration), etc., and processes in developing economies. In conditions when not always social processes can result in institutional improvements for a wide various reasons (eg migration, the level of productive development, structural capital, industrialization, brain drain, or institutions, traditions on development and culture to choose from, etc.), a functioning model of researchers and institutions and key factors may be a unique alternative to positively compensation for food safety and social dynamics. The upcoming complicated challenges related to food safety probably suggest a more sophisticated empathic interaction through innovation, institutions, and the new-skilled actors in the ‘global city’ that is being born, where the solutions and implementation requires smart skills for adaptations of sources/factors according to the characteristics of the regions. In his bestseller ‘The Empathic Civilization’, Rifkin [63], arguing the importance of understanding the complicated challenges of the future, puts empathy at the core of analysis from a multidisciplinary perspective such as sociological, psychological and biological, philosophical, environmental and economical, and reinforcing this argument in his theory of the new economic developmental model in the 21st century [64], by underlining the importance of new credible channels of information and innovation systems as premises that can unite people in the future at the national level based on development, democracy and technological progress. The credible information channels in the reality of digital economy (eg precision agriculture, AI, etc.) mean new ecosystems and efficient institutions based on science and innovations that use appropriate mechanisms (eg



check and balance), determining methods for problem solving at source (eg first the best, etc.), and new technologies for the predictability and innovative overcoming of potential challenges; and this may define the future sustainability of the food safety.

**Conclusions.** Between the local specifics (and limitations) and beyond a simplistic approach (eg only socio-geographic), the study provides a broad analysis of several groups of variables such as market actors, trust in institutions, trust in information, risk perception and psychological factors, their compliance with the internal environment and the impact on food safety of conventional agri-products (vegetables) in the markets of the city of Tirana, Albania. The country's food safety is a function of global (regional) food safety dynamics and the influence of analyzed factors, such as institutions, researchers and actors in value channels (eg farmers). This implies the need for a professional focus on differencing implications (local, global) and providing precise solutions for food safety. Decision-making on food safety policy should consider the institutional format of functioning, increasing the presence of food safety and (especially) the consumer protection associations, considering interaction with other policies such as agriculture and food and especially interdependence with trade policy, because the standard of product and quality means competitive advantage and competitiveness in markets (exports). Given the context (instabilities, energy prices, etc.) the dynamics can be related to several issues:

- Economic factors (productivity, national growth, income), competition and competitiveness, etc.
- Financial budgeting (inflation, key inputs, their importance and costs), by matching emergencies with a hierarchy of long-term priorities, etc.
- The functioning of markets (economic-social benefits, balance, redistributions) and the main actors and their abilities, etc.
- Producers (problem of nematodes in greenhouses, additives, colorants and hormones), standards, etc.
- Logistics, technique (and inventions), innovations (eg software's, equipment, etc.) vs. developments and the types of laboratories in the EU and region, etc.
- Institutional capacity (competencies, supervision), contemporary research orientation, priority areas and capabilities for successful implementations, etc.

In an information and highly interconnected society, where people feel 'citizens of the world' due through access to the (qualified) information of the media, scientific information passes according to the levels of entropy from professionals to others, and this should be repeated.

Food safety is an expression of national security and because it requires very high level competencies, it becomes as a primary responsibility at the highest level of government. Within the current context, we highlighted the importance of multi-disciplinary competencies and the supervision of the above issues, but there may also be interaction between them. So, when we discuss economies of a certain size or a certain level of income, the interaction of above factors may cause consequences also for food safety. For example, for small economies with a low rate of consumption, the taxes of the countries of the region on certain food products, fixed costs,

administered prices (eg energy, water) etc., may have to be observed because a lower ranking compared to region countries can cause the cascade effect, where the products in the final stage of expiration may tend to discharge towards consumption and lower standards of small markets (and higher costs), making food safety policy perhaps even dysfunctional. Concluding, we emphasize that food safety is inextricably linked to the economy and institutional efficiency and economic fluctuations (eg continuous vs. continual), or growth inhibition can be critical to its sustainability. New developments and the contextual stage of problems require precise and faster responses. Considering in the light of new developments, a better coordination (eg horizontal, vertical) from institutions (local, central, etc.), and empowerment of the key actors in the value chain (farmers, retailers), and researchers as influential key factors for the predictability and new formulations (eg risk management conceptualization) in the field of food safety, can create the necessary synergy by contributing to the sustainability of consumption and increase efficiency by promoting deepening of economic integration, and the development of structural capital, technological innovation and social progress.

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