Unfair Trading Practices: Evidence in the Fruit Supply Chain

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Abstract

This paper evaluates the occurrence and determinants of unfair trading practices (UTPs) in the fruit supply chain in Slovakia. Based on a representative survey of fruit growers, mainly apple growers, the study concludes that 79% of the producers experienced at least 1 UTP in a relationship with their main buyer. The most frequent UTPs are late payments (39.6%), payments unrelated to a specific transaction (39.6%), and unilateral changes by buyers in contracts and orders. The results of the probit model show that producer organisations decrease the probability of UTPs relative to conditions in which the main buyer is a private trader (by 32%) or supermarket (by 35%). This result provides some justification for the support of producer organisations under the Common Agricultural Policy of the European Union.

Keywords

fruit; supply chain; survey; unfair trading practices

1 Introduction

According to the definition by the European Commission (2013: 3), unfair trading practices (UTPs) are "practices that grossly deviate from good commercial conduct, are contrary to good faith and fair dealing and are imposed by one trading partner on another". UTPs occur in the process of contract negotiations between farmers and buyers involving the terms set in contracts and the extent to which they are respected in the business relationship (DI MARCANTONIO et al., 2018). Because suppliers are in a weaker position in this relationship, they are often forced to accept unfair practices in order to maintain commercial relations with the buyers in the supply chain (EUROPEAN COMMISSION, 2019).

UTPs became part of the agricultural policy agenda after the reforms in the European Union's (EU's) Common Agricultural Policy (CAP) (MacSharry reform, Agenda 2000), which replaced price supports with direct income supports and, thus, increased price risks for farmers. Extreme price volatility on global commodity markets in the second half of the 2000s drove efforts by farmers to adopt UTP legislation, as price fluctuation was higher for basic agricultural commodities than for processors or retailers (SWINNEN et al., 2014). Recent developments that led to increased concentration in food processing and retail (SEXTON, 2013; FOOD DRINK EUROPE, 2011), while keeping the size of farms relatively stable, increased awareness among policy makers of the need to deal with the bargaining imbalances in the agri-food supply chain that could lead to UTPs.

Central and Eastern European countries were strong proponents of the UTP legislation in the EU. Specifically, in Slovakia, the topic of UTPs has long been on the agenda of most political parties as well as major agricultural associations. At the beginning of the transformation of the agricultural economy, Central and Eastern European countries experienced significant contracting problems in supply chains, which was one reason for the decline in agricultural production in these countries in the 1990s (GOW and SWINNEN, 2001; CIAIAN and POKRIVCAK, 2007). Later, the expansion of supermarket chains eastwards led to the closure of some farms, including fruit growers in major supply chains, which reduced agricultural production in Slovakia (DRIES et al., 2004). In 2015, Bulgaria, Czechia, Hungary, Poland, Romania, Slovakia, and Slovenia jointly asked the European Commission to prepare EU-wide legislation on UTPs.

In March 2019, the EU passed a directive on UTPs which prohibits ten practices in the EU agri-food supply chains (called black practices) and allows an additional six practices (called grey practices) only when a buyer and a supplier explicitly agree on their use in their trade relationship in advance in writing (Table 1).

The Directive on UTPs came into effect after more than a decade of intensive discussion at both the national and EU levels. The EU legislation is paralleled at the national level in many EU member states

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Table 1. UTPs in the EU Directive

Black UTPs	Grey UTPs
Payments later than 30 days for perishable agricultural and food products	Return of unsold products
Payments later than 60 days for other agri-food products	Payment of the supplier for stocking, display and listing
Short-notice cancellations of perishable agri-food products	Payment of the supplier for promotion
Unilateral contract changes by the buyer	Payment of the supplier for marketing
Payments not related to a specific transaction	Payment of the supplier for advertising
Risk of loss and deterioration transferred to the supplier	Payment of the supplier for staff of the buyer, fitting out premises
Refusal of a written confirmation of a supply agreement by the buyer, despite request of the supplier	
Misuse of trade secrets by the buyer	
Commercial retaliation by the buyer	
Transferring the costs of examining customer complaints to the supplier	

Source: EU DIRECTIVE 2019/633

because the EU allows them to adopt rules on UTPs that are stricter than the EU-wide rules.

The indispensable role of farmers as well as the need to protect them better is also recognised by the EU citizens. According to a Euro-barometer survey about the CAP (in 2017), 88% of the respondents think that strengthening the farmers' role in the food chain is important. For 45% of the respondents, it is the second-highest priority concerning the future CAP (EUROPEAN Commission, 2018). Moreover, the empirical research indicates that people want farmers at least to get a "fair share" of the profit generated in the food supply chain, and they want them to receive fair prices for their products (EMBERGER-KLEIN et al., 2016)[1]. Within the CAP, the EU supports the formation of producer organisations (POs) to counterbalance the bargaining power of processors or retailers. Because of the EU support, producer organisations play a relevant role in the supply of fruits and vegetables in the many EU member states. Given this support from the CAP, from a policy perspective, it is also crucial to investigate the role of POs in mitigating the exposure of farmers to UTPs.

In this paper, we analyse UTPs in the fruit supply chain in Slovakia. We concentrate mainly on the apple sector, which is characterised by a favourable geographic location and good natural conditions (MATOSKOVA et al., 2010). However, despite the favourable natural conditions, Slovakia's share of total EU apple production is only 0.32%. Fruit growers in Slovakia face many issues that directly or indirectly contribute to their low competitiveness. The fruit sector is characterised by insufficient human capital, low capital intensity, and supply chain problems (NEMETH and MASAR, 2014; ZZZS-OUSR, 2019). Moreover, the entire agricultural sector in Slovakia is marked by an inefficient land market, reflected in the fragmentation of ownership, which hampers the development of farms (MUCHOVA and RASKOVIC, 2020). In addition, Slovak agriculture has a very specific structure: it is

[1] Generally, a fair price is defined as just compensation for performance. If farmers' revenues do not cover their production costs they will not be satisfied with their product prices. This will reduce their perceived fair treatment (HELLBERG-BAHR and SPILLER, 2012). More broadly, as discussed by JONGENEEL et al. (2020) the farmers perceive the price they receive for their products as fair when: (i) the price is in reasonable proportion to the effort and/or production costs involved (fair remuneration); (ii) they see that others receive similar prices (fair treatment); (iii) there is no party in the chain that makes a lot of money for the price paid at the farmers' expense (distributive justice), and (iv) the price was established following the usual rules in the economy (procedural fairness). As BALTUSSEN et al. (2018) explain, farmers deserve fair or correct prices for the products and services they provide to society and by extension, to citizens and consumers, because they must not only produce sufficient food that is safe and of high quality but also respect other social demands, such as taking animal welfare into account, maintaining biodiversity and an attractive landscape, ensuring a clean environment, and reducing its contribution to greenhouse gas emissions. Fulfilling these demands, in many cases, means higher costs for the primary producers, but does not always result in higher turnover.

dominated by large corporate farms, which in most cases specialise in the production of commodities with low added value, such as grains and oilseeds while the number of farms engaged in the production of fruits and vegetables is decreasing (CIAIAN et al., 2009).

Interestingly, although UTPs have become a hot political issue, analysis of their determinants is scarce, and our knowledge about UTPs in agri-food commercial relationships is rather limited (RENDA et al., 2014; FAŁKOWSKI et al., 2017; SEXTON, 2017). Therefore, in this paper, we also study how farm characteristics affect UTPs, as these characteristics affect bargaining, which is a crucial determinant of UTPs (BONANNO et al., 2018; GORTON et al., 2017).

The paper is organised as follows: after the literature review in section 2, we describe the fruit supply chain in Slovakia (section 3) and the sample used to analyse the occurrence of UTPs (section 4). Section 5 evaluates the occurrence of UTPs in the Slovak fruit sector and quantifies the determinants of UTPs, section 6 discusses the main results, and section 7 offers policy implications and concludes.

2 Literature Review

UTPs can occur at any stage in the supply chain, and their effects can be transmitted to the other parts of the chain. In general, small farmers and small and medium-size agricultural producers and processors of food products are considered the most vulnerable to UTPs (AMTF, 2016) as a consequence of higher switching costs, fewer trading relationships, and the lower willingness by small players to use formal enforcement mechanisms. Moreover, they have less countervailing power against more powerful partners (EUROPEAN COMMISSION, 2013).

UTPs have different adverse impacts on the functioning of food supply chains in the EU, potentially affecting structural change in EU farming, food quality and availability, income distribution among active agents, and rural employment (RENDA et al., 2014; FAŁKOWSKI et al., 2017). UTPs can also have a negative effect on different aspects of farmers' decision-making (FAŁKOWSKI et al., 2017). Attention is focused on the following issues. First, the way in which the contract terms between farmers and buyers are agreed upon and then respected is further reflected in the revenue earned and the costs incurred, which in turn influence farm profitability (DI MARCANTONIO et al., 2018). Second, UTPs can contribute to increased market uncertainty, which in turn affects farmers' investment and thus limits the space for innovation. In consequence, at the aggregate level, this might influence the competitiveness of the entire sector. Third, by affecting production decisions, UTPs might also lead some suppliers to exit the industry (FAŁKOWSKI et al., 2017).

UTPs in the food supply chain have become a serious concern in the EU because of increasing concentration and consolidation among food manufacturers and retailers, which have decreased the number of potential trading partners for many farmers to just a few or only one (FAŁKOWSKI et al., 2017). Such a setting creates significant imbalances in bargaining power in the food supply chain, which is often cited as one of the principal causes of UTPs. Bargaining power can be defined as the power to receive concessions from a trading partner by threatening to impose a cost or withdraw a benefit if the partner does not agree to the concessions (KIRKWOOD, 2005). Bargaining power is not the only driver of UTPs, but it also interacts with other factors that are considered as causes of UTPs: asymmetric information, switching costs, the costs of contract enforcement, transaction costs, the perishability of goods, and the seasonality of production (RENDA et al., 2014).

The increasing severity of UTPs has expanded the literature in recent years, yet the number of empirical studies is limited. It is also difficult to find any studies concerning UTPs as a whole. Many studies focus generally on relationships in the food supply chain and provide indirect evidence of UTPs and their impacts (FAŁKOWSKI et al., 2017). These studies include price transmission analyses (PEREKHOZHUK et al., 2017; POKRIVCAK and RAJCANIOVA, 2014), which contribute to the identification of potential market malfunctioning, but the extent to which the asymmetries observed can be attributed to imbalances in bargaining power is not clear (BAKUCS et al., 2014).

The first important survey dealing directly with UTPs was commissioned by the European Brands Association in 2009. The survey of 686 food processors in 15 EU member states showed that 96.4% of the respondents had experienced at least one UTP in 2009 (CIAA-AIM, 2011). Another survey, carried out by DEDICATED RESEARCH (2013) on behalf of COPA-COGECA, involved 434 professionals in 21 countries and revealed that 94% of farmers and 95% of agri-food cooperatives had experienced at least one UTP.

The Comisión Nacional de la Competencia (CNC) (2011) analysed the risks and impacts of the most common commercial practices employed by the major retailers in Spain to exert their power over suppliers. In this report, 56% of the producers claimed that retroactive changes of contracts occur frequently or occasionally.

A study by DI MARCANTONIO et al. (2018) investigated the incidence of UTPs in the dairy farm sector in four EU countries (France, Germany, Poland, and Spain). Their questionnaire focused on the occurrence of UTPs in the content of contracts and at different stages of contract development. UTPs can be incorporated into the contract content if doing so creates better business terms for the buyer than for the farmer or if it imposes certain trading restrictions on farmers. These restrictions might include one-sided clauses specifying more favourable conditions for the buyer than for the farmer (e.g. the buyer can refuse or adjust product delivery conditions, with no safeguard defined if the buyer fails to fulfil the contract, and the buyer has better contract cancellation terms), practices that impose supply constraints, requirements to make specific investments, and prices set unilaterally by the buyer. UTPs during the execution of a contract comprise non-compliance with contract terms, delayed payments, unilateral changes in contract terms, refusal to accept deliveries, and imposition of additional fees/deductions. UTPs identified after the conclusion of a contract include unilateral cancellation of the contract before its expiration and the "fear factor". Their results reveal that 98% of the farmers experienced at least one UTP. The largest share of UTPs was found in the content of the contracts: overall, 96% of the dairy farmers surveyed reported at least one UTP in their contract with the main buyer. The most common UTP found in the contract content was "no safeguard defined if the buyer fails to fulfil the contract", followed by "price is set unilaterally by the buyer", "dairy-specific investment required", and "buyer can refuse or adjust milk delivery conditions".

Although Central and Eastern European countries called upon the European Commission to create an EU-wide solution, empirical research on UTPs in these countries is very limited. The only existing research on UTPs in Slovakia was carried out in the dairy sector and reflects the survey by DI MARCANTONIO et al. (2018). The majority of dairy farmers (87%) reported at least one UTP (BARATHOVA et al., 2019).

Taking into consideration the foregoing, this paper has two objectives: (1) to investigate the occurrence of UTPs (from the EU Directive 2019/633) in the Slovak fruit supply chain, and (2) to investigate the determinants of UTPs' occurrence at the farm level. The results of this research are important for several reasons. The design of the questionnaire used is based on the new EU UTP Directive and thus provides information on its relevance to the fruit industry (and others). Research on the determinants of UTPs is important from the perspective of the new CAP after 2020 and the support for POs.

3 The Fruit Supply Chain in Slovakia

Based on data from the registry of fruit orchards in Slovakia, there were 442 fruit-growing entities in December 2017. Only 10% of them (45) are members of the Slovak Fruit Growing Union, but together they are responsible for 85% of the fruit production in Slovakia. The Slovak Fruit Growing Union is an association of firms engaged in the production of high-quality fruit, fruit trees, the establishment and restoration of orchards and incorporating its members into POs.

Slovakia has two recognised fruit POs, which bring together 23 fruit growers. The producer organisation Bonum has 15 members, who together manage 800 ha of intensive orchards. Their total apple production is around 17,000 t per year. The second producer organisation, SK Fruit, has 8 member firms that cultivate approximately 700 ha of intensive orchards. Its annual production is as much as 15,000 t, consisting mainly of apples, peaches and plums. Although these POs together account for only 5% of the registered fruit-growing firms, their production in 2017 represented 81% of the fruit production in Slovakia.

POs have a better position in bargaining with buyers (especially supermarkets) than individual farmers. Moreover, POs advise their members about the implementation and maintenance of the quality systems, provide for the centralised purchase of chemicals, and, most important, provide storage facilities and post-harvest handling. Bonum sells fruit to other traders and middlemen as well as directly to supermarkets. SK Fruit sells fruit to food-processing firms and to other traders and middlemen, who then supply fruit to supermarkets. POs are committed to buying at least 80% of their members' production. For this reason, they are an essential element in the formation of a Common Market Organisation (CMO). Both POs apply strict quality systems, such as GlobalGap. This

might be of interest to many retail chains, because they can be confident that the products are of high quality, strictly controlled, and with a very high level of traceability.

Under the CAP, POs have been supported in the fruit and vegetable sector since 2001 and in the dairy sector from 2011. In 2013, the EU introduced a comprehensive support system based on Regulation no. 1308/2013 (CMO Regulation) on the common organisation of the markets in agricultural products, and this support was extended to other sectors. To be recognised by the EU, the PO must be established by the producers of specific products and must pursue specific aims, such as concentrating the supply of members' output, providing technical assistance to members, and contributing to sustainable use of natural resources. Recognition of the PO is important, in particular in the new member states, mainly because of access to several EU programmes, funds, and support schemes connected to the CMO or the European Agricultural Fund for Rural Development. Generally, recognition of the PO can provide higher market visibility and differentiation.

Fruit growers that are not members of POs sell their products through wholesalers and other intermediaries or exporters. Wholesalers and other intermediaries purchase mainly high-quality produce in prespecified quantities. Only a small proportion of the growers that are not members of the POs deliver fruit directly to supermarkets. A large proportion of the fruit growers, especially small growers, sell their production directly to final consumers, and many farmers offer customers to pick fruit themselves at farms. Some fruit growers process the fruit themselves: they produce fruit juice, cider, dried fruit, alcoholic beverages and other products. Several fruit growers deliver their products to processors, as well as to the hospitality industry (HORECA). In 2017, the Slovak Canning Association consisted of only four companies that process fruit and produce mainly compotes and baby food (VUEPP, 2018). In Slovakia, fruit is also processed by distilleries. Some growers sell substandard fallen apples for export (mainly to Austria, which has large industrial canning plants).

In 2018, the total area of registered fruit orchards in Slovakia was 6,716 ha, a decreased of 36% (3,717 ha) compared with 2006. A decrease is also seen in the production area. Around 42% of the area in fruit orchards is devoted to apples, but their production area is also gradually declining. In 2018, it totalled only 2,592.3 ha; in 2005, it covered 5,077 ha; and in the 1990s, it was 16,000 ha (UKSUP, 2019).

4 Survey Sample

To evaluate the occurrence of UTPs on fruit farms in Slovakia, we used data collected through a survey questionnaire at the farm level. The sample design and data collection involved the following steps:

In the first stage, the list of fruit growers in Slovakia was obtained from the Central Control and Testing Institute in Agriculture (UKSUP). This database contains data on orchards for all species of fruit grown in Slovakia, and therefore it was used as a sample framework. Many farms in Slovakia grow several species of fruit. The survey focused on apple growers, but we also reached out to the growers of other fruits. As of December 2017, Slovakia had 442 fruit growers. However, in the majority of orchards with area of less than 3 ha, fruit is grown only for personal consumption, thus these growers do not encounter UTPs. Therefore, based on the data available, we excluded orchards smaller than 1 ha. The study implemented a stratified sampling procedure with a random selection of the final sample firms (i.e. apple/fruit farms). The sample was stratified by the size of the orchard in order to include growers of different sizes and to reflect the distribution of orchards at the national level.

In the second stage, the sampled fruit farms were randomly selected. An anonymous online survey was initially proposed for conducting the survey. However, the response rate to the survey was extremely low, which we attributed to two main facts. First, doing field research involving farmers as respondents is not easy due to their general unwillingness and scepticism of farmers. Second, research about UTPs is sensitive, as it is directly related to contractual agreements, and, because of the "fear factor", farmers do not want to participate. These issues are generally encountered by researchers on UTPs. Similarly, in the research on UTPs in the dairy sector by DI MARCANTONIO et al. (2018), which is the largest existing research on UTPs (covering the dairy sector in four EU member states), data was collected through face-to-face interviews as well, in order to increase the sample size. Given the circumstances and the low response to the online survey, we decided to change the approach. First, we contacted a total of 176 farmers by phone, and we explained the purpose of the survey to them. If they agreed to participate, the place and time of the interview were agreed on (usually at home or the farm). If they agreed to participate in the survey, we offered them the possibility to do a face-to-face interview or submit the online (electronic) form of the questionnaire. The majority of those who agreed to participate

preferred the face-to-face interview (68%). Some farmers (32%) requested an electronic or paper version of the questionnaire, rather than having a personal meeting. Face-to-face interviews lasted on average between 45 minutes and 1 hour. The data collection phase lasted from April until the end of July 2019, and the questionnaire focused on the relationship between the farmers and their main buyers in the previous year, thus data collected are for 2018.

The response rate was 37.5%. Farmers were reluctant to participate in the survey for several reasons. Some farmers did not want to share information about their trade relationships, because they consider this information confidential. Moreover, some were afraid that participation in the survey could threaten their trade relationships. Therefore, the reluctance to participate can be attributed in part to the "fear factor" (explicitly implied in approximately 20% of the cases). Around 9% of the farmers contacted had newly established orchards, so did not yet have any harvest; 15% of the farmers contacted reported that the orchards they own are old and abandoned, with no market production. The rest of the farmers contacted declined to participate in the study mainly because their orchards are very small, so they have little production of apples/fruit. They organise "pick-your-own" fruit by consumers at their farms. Moreover, 19.7% of the farmers, who agreed to a personal meeting, sell production to final consumers and, therefore, do not face UTPs. These farmers are small in scale and, therefore, unable to deliver production to shops and retailers.

The final sample consists of 66 interviews. Table 2 shows the number of fruit farmers in Slovakia divided into groups according to fruit orchard size (in ha) and the distribution of the sample by orchard size. In all, 82% of the farmers surveyed were apple growers.

The fruit growers most heavily represented in our sample are those with fruit orchards bigger than 10 ha but smaller than 50 ha. The largest fruit growers, those who own orchards larger than 100 ha, represent 5% of our sample, and they are also the smallest group of fruit growers in Slovakia.

In our survey, family farms comprise only 20% of the respondents, private corporations comprise 62%, and the remaining 18% are cooperatives. Table 3 lists descriptive details about other characteristics of the farms.

Table 2. The sample size of the farm survey

Size of Fruit Orchard (ha)	No. of farms (in 2017, UKSUP)		Sample	
	No. of fruit growers	%	No. of fruit growers	%
1-10 ha	201	57%	27	41%
10-50 ha	123	35%	30	45%
50-100 ha	19	5%	6	9%
> 100 ha	9	3%	3	5%
Total	**352**	**100%**	**66**	**100%**

Notes: As of December 2017, Slovakia had 442 farms growing fruit, but, after orchards smaller than 1 ha were excluded for the reasons explained in the text, the total number of fruit growers is 352. The representativeness of the sample was verified with a χ^2 test. Because χ^2 < critical value (7.806 < 7.815) at the 0.05 level of significance, we fail to reject the null hypothesis. This means that the distribution in the sample does not significantly differ from the population distribution.
Source: own calculations

The average size of the farms in our sample that grow fruit is 729.8 ha. This number represents the entire area of the farm, not just fruit orchards but all crops that are grown on the farms (e.g. grains and oilseeds). The average size of the fruit orchard alone is 28.3 ha. As for storage facilities, 62% of the farms do not have on-site storage, 12% have on-site storage for all production, and the rest of the farmers have on-site storage for a portion of the output (26%).

Table 3. Selected characteristics of farms in the sample

Type of farm	% of farmers
- family farm	19.7%
- incorporated	62.1%
- cooperative	18.2%
Farm's annual turnover (in mil. EUR)	
0-2 mil. EUR	66.7%
2-10 mil. EUR	31.8%
10-50 mil. EUR	1.5%
Specialisation of the farm	
- specialised in apple production	44%
- specialised in fruit production	6%
- specialised in other production	32%
- not specialised	18%

Note: Farms specialised in apple production are those where apple trees are the main crop and the biggest portion of farm production; farms specialised in fruit production are those where the main crop is another kind of fruit; farms specialised in other production focus on the production of different crops (e.g. cereals or oilseeds), and not specialised means farms that grow different crops and are not primarily focused on one leading crop.
Source: own calculations

Interviews were conducted mainly with the farm managers (94%). Males manage 82% of the surveyed fruit farms.

5 Results

5.1 Occurrence of UTPs

The investigation of the occurrence of UTPs focuses on the trade relationship between farmers and the main buyers (who buy the largest share of production). Private traders are the main buyers for 27% of the farmers, and POs are the main buyers for 26% (Table 4). Only 10.6% of the farmers stated that they supply the majority of production to supermarkets, and 17% supply to other buyers (baby food producers, distilleries, etc.). Interestingly, 19.7% of the farmers surveyed sell production only to consumers, and thus they indeed do not encounter UTPs.

Table 4. Type of main buyers

Main buyer	% of farmers	Average orchard size in ha (std dev)
Private traders	27.27%	12.51 (6.94)
Producer organisation	25.76%	49.08 (50.23)
Directly to final consumers	19.70%	7.94 (4.66)
Retailers	10.61%	10.78 (6.66)
Other	16.67%	36.05 (36.52)
Total	**100%**	**24.76** (33.79)

Source: own calculations

5.2 Structure of the Trade Relationship

Regarding the length of the trade relationship, 38% of the farmers surveyed declared that their trade relationship with the main buyer has lasted for more than 10 years; 14% responded between 5 and 10 years, 48% less than 5 years, and 21% stated that they traded with their main buyer only once.

The formal contract is important for any legal actions taken towards a trading partner in the event of a breach of contract. Farmers in our survey have either a formal contract with their main buyer (38%) or a contract based on membership in a PO (28%). The use of informal contracts was reported by 9% of farmers, and 26% reported that they had no contract with the buyer. These farmers sell fruit directly to consumers or trade with private traders.

Regarding the sales price, a majority of the farmers in our survey reported that they have a reliable estimate of the sales price only after the harvest (35%) or after the products have been delivered to the buyer (36%). Only 9% have the estimate before harvest, and the remainder did not answer. Not having an estimate of the sales price before the harvest might be the source of uncertainty for farmers in their business.

5.3 UTPs occurrence at the Farm Level

The main objective of the questionnaire was to investigate the occurrence of practices banned in the new EU Directive. For each practice, farmers were asked two questions. First, to the question "how often does a certain practice occur?" they had to respond using the following scale: never (0%), seldom (1%-10%), sometimes (11%-33%), often (34%-66%), very often (67-90%), almost always (91%-99%), or always (100%). Second, to evaluate the (un)fairness of the practice, they were asked how they perceive that practice using the following scale: totally unfair, unfair, neither fair nor unfair, fair, or totally fair.

Using this approach represents an improvement over existing survey methods because, most importantly, it considers the context-specific nature of UTPs. For example, when a specific practice is highly likely, this measure yields a lower value if it is implemented quite fairly (e.g. if the buyer pays reasonable interest for a delayed payment). Another benefit is that, by asking about the probability of occurrence, instead of simple dichotomic (i.e. yes or no) questions, as in most existing research papers related to UTPs, we can receive a more thoughtful answer from respondents. The aggregate results are summarised in Table 5, which reports the percentage of farmers who had experienced selected UTPs at least sometimes and the percentage of farmers who perceive the practices as unfair or totally unfair. The sample, from which the percentage of farmers who faced UTPs was calculated, includes only farmers whose main buyers are not final consumers (as mentioned earlier, 19.7% of the farmers surveyed sell their products only to final consumers, do not encounter UTPs, and thus were excluded).

The results show that late payments are the most serious UTP. Occasional late payment by their main buyer is reported by 39.6% of the farmers, but with differences according to the type of buyer. Among the farmers who are members of POs, 76% reported that payments are never late. However, 85% of farmers who trade with retailers and 55% who trade with other buyers reported that buyers are at least sometimes late.

Table 5. Occurrence of black UTPs

Black UTPs	% of farmers	Perceived unfairness
Late payments (more than 30 days for perishable agri-food products)	39.6%	92.6%
Short-notice cancellation of orders	28.3%	85.7%
Unilateral contract changes by the buyer	24.5%	25.7%
Unilateral single-order changes by the buyer	30.2%	60.5%
Payments not related to a specific transaction	39.6%	28.0%
Payments for wasted products/losses	17.0%	32.3%
Refusal of a written confirmation of a supply agreement by the buyer	5.7%	100.0%
Misuse of trade secrets by the buyer	0.0%	0.0%
Commercial retaliation by the buyer	11.3%	75.0%
Payments for the cost of investigating customer complaints	17.0%	46.2%

Source: own calculations

Cancellation of orders on very short notice (according to the UTP Directive, notice of less than 30 days) poses a significant problem for farmers because the perishable nature of their products decreases the time to find an alternative for selling their products. This UTP is reported at least sometimes by 28.3% of the farmers (mainly with retailers and private traders).

Changes in the contract are not necessarily considered bad or unfair. It depends on how these changes are made. When they are imposed, they are UTP. With respect to imposed changes in the contract, 25% of the farmers experienced this practice at least sometimes (mainly changes in prices and quality, reported by 20% and 23% of farmers, respectively). Unilateral changes in single orders were reported by 30% of farmers. Similarly, as with contract changes, changes in prices and quality are the most serious.

Experience with payments that are not related to a specific transaction was reported by 39.6% of farmers. Interestingly, only 28% of the farmers consider this practice unfair. This shows a very important aspect of UTPs: they depend on the context. This practice is perceived as fair mainly by the members of POs. POs provide their members with many services, including storage facilities for their entire production. This is especially important for many members, therefore many perceive it as fair to pay for it, as one of the biggest problems in the Slovak fruit sector is insufficient storage facilities.

Payments required by the buyer for wasted products and losses (after goods were delivered to the buyer) and for investigation of customer complaints are situations in which the buyer transfers the costs to the supplier, and this is considered unfair. These practices were reported by 17% of the farmers.

When farmers experience unfairness, they often choose to do nothing, out of fear of being threatened by buyers with retaliation: 11.3% of the farmers reported that their main buyer threatened them with termination of the trade relationship, either explicitly or implicitly.

Other than the return/buyback of unsold products, grey practices (in the EU Directive) are not a serious issue in the fruit industry (Table 6). In the majority of cases, these practices are either not in place or are agreed upon clearly and unambiguously. The return/buyback of unsold products was reported by 32.1% of farmers as an ambiguous or unclear practice

Table 6. Occurrence of grey UTPs

Grey UTPs	UTP not in place	UTP in place		
		Tacit	Ambiguous or unclear	Clear and unambiguous
Return/buyback of unsold products	22.6%	5.7%	32.1%	39.6%
Payments for displaying, listing, or stocking products	73.6%	1.9%	5.7%	18.9%
Payments for promotion of products	79.2%	0.0%	0.0%	20.8%
Payments for advertising	75.5%	0.0%	1.9%	22.6%
Payments for marketing	58.5%	0.0%	1.9%	39.6%
Payments for staff of the buyer for preparing premises used for the sale of the supplier's products	98.1%	0.0%	0.0%	1.9%

Source: own calculations

included in the contract. The occurrence was reported mainly by farmers who trade with private traders, retailers, and other buyers.

Based on the interviews, some farmers consider the majority of these grey UTPs as well as some black UTPs (e.g. misuse of trade secrets) irrelevant to fruit-growing sector. These findings are important for future policy because although the Directive provides some minimum protection for farmers by defining unfair practices, the list is not exhaustive. This means that although some practices might be a serious threat in one sector, they are not necessarily so in another sector.

5.4 Overall Occurrence of Unfair Trading Practices

Table 7 summarises the occurrence of UTPs in the Slovak fruit sector by presenting the share of fruit farmers who report a certain number of UTPs. Overall, 79% of the farmers surveyed (of those whose main buyers are not final consumers) reported that they experienced at least 1 UTP in the relationship with their main buyer.

Based on the results of farmers' overall satisfaction with their main buyers, we investigated whether membership in POs leads to a fairer relationship. Among the farmers who are members of POs, 88% reported that they encountered at least 1 UTP in their relationship. And 75% of the farmers who trade with other buyers (private traders, supermarkets, others) reported at least 1 UTP. However, when we compare the number of farmers who experienced a higher number of UTPs (two or more), the results are very different. The difference in the number of UTPs experienced by members and non-members of PO is statistically significant. As confirmed by a one-tailed t-test: p-value < alpha (0.005<0.01), on average, non-members of POs experienced a higher number of UTPs.

5.5 Determinants of UTPs at the Farm Level

To examine the factors that might influence the occurrence of UTPs, we employed a probit model, which enables us to test whether different factors or independent variables influence the probability of UTP at fruit farms. The probit model is used for a binary result: in our case, it enables us to see whether at least 1 UTP occurred at a fruit farm (yes = 1; no = 0). The model uses a maximum likelihood estimation.

$$Pr\,(UTP) = \beta_0 + \beta_1 X_i + \beta_2 C_i + \varepsilon_i \quad (1)$$

where Pr is the probability of a UTP (1 or 0). UTP is the dependent variable and equals 1 if the farmer experienced at least one of the 16 UTPs (in the Directive); otherwise, 0. β_0 is a constant, X_i is a vector of the independent variables, and C_i is a vector of the control variables. β_1 and β_2 are vectors of coefficients associated with X_i, and C_i, ε_i is the error term.

As for the factors that can might influence the occurrence of UTPs, we formed several hypotheses, derived from theory and existing research:

Hypothesis 1: The size of the farm influences the occurrence of UTPs: fewer UTPs occur at larger fruit farms.

According to the existing literature on UTPs, small farmers are the most vulnerable to UTPs and the most likely to be affected by unfavourable outcomes from them (FAŁKOWSKI et al., 2017; GORTON et al., 2017) because they have higher switching costs, fewer trading relationships, and less countervailing power (EUROPEAN COMMISSION, 2013).

Hypothesis 2: Membership in a producer organisation reduces the incidence of UTPs on fruit farms: when a PO is the main buyer, a farm encounters fewer UTPs.

FAŁKOWSKI and CIAIAN (2016) argue that POs can indirectly help in the fight against UTPs. POs are

Table 7. Overall UTPs occurrence and difference between members and non-members of POs

Number of UTPs	% of all farmers	% of members of POs	% of non-members of POs
no UTP	21%	12%	25%
1	30%	65%	14%
2	9%	18%	6%
3	13%	0%	19%
4	6%	6%	6%
5	13%	0%	19%
6 or more	8%	0%	11%

Source: own calculations

believed to increase the bargaining power of farmers, because they can negotiate better terms of trade with downstream firms in the supply chain (SORRENTINO et al., 2018). Research by DI MARCANTONIO et al. (2018) and BIJMAN et al. (2012) shows that dairy farms with connections to cooperatives/POs have lower risk of falling victim to UTPs.

Hypothesis 3: The length of a trade relationship influences the incidence of UTPs: a longer relationship between farmers and buyers decreases UTPs.

FAŁKOWSKI et al. (2017) argue that long-lasting relationships make the occurrence of UTPs less likely, based on the assumption that a business relationship that has lasted many years implies satisfaction and trust on both sides, and thus trade partners have fewer incentives to act unfairly.

Hypothesis 4: More UTPs occur at farms that are more dependent on growing fruit rather than having diverse production.

Farm specialisation might increase risks. When farmers do not diversify their production, they might become dependent on one specific buyer or a group of buyers who set the rules. This makes farmers more vulnerable to an imbalance in market power and creates room for abuse and UTPs (DI MARCANTONIO et al., 2018).

Hypothesis 5: The greater the imbalance in bargaining power between the farmer and the buyer, the more UTPs that occur at the farm.

GORTON et al. (2017) explain that the imbalances in the bargaining power of farmers are reflected in how easily farmers can switch their buyers. Thus, when the farmers can easily switch among buyers, they experience fewer UTPs. In markets with a large number of potential buyers, the level of producer dependency is lower, because producers can switch relatively easily among buyers, if buyers act opportunistically or misuse their power. However, other factors also play a role, such as whether another buyer is available near the farmer, whether switching is costly (penalty fee, entrance fee, etc.), whether it could lead to worse conditions (e.g. prices).

5.6 Variables Used in the Probit Model

To examine the relationship between the incidence of UTPs and their possible determinants in the Slovak fruit supply chain, we used independent as well as control variables in the probit model (Table 8). The dependent variable is *d_UTP,* a dummy variable created from 16 UTPs listed in Directive 2019/633/EC. Because we take into account the perceived unfairness of the practices by farmers, the occurrence of each of the 16 UTPs was counted when farmers stated that a certain UTP occurred at least sometimes and farmers perceived it as either an unfair or totally unfair practice. Thus, *d_UTP,* a combination of 16 dummy variables created from 16 UTPs, equals 1 when one or several UTPs on the list occurred at the fruit farm; otherwise, 0.

The choice of independent variables reflects the hypotheses about the determinants of UTPs and

Table 8. Characteristics of independent and control variables

Independent and control variables	Definition	Dimension
mb_trader	The main buyer is a trader	binary variable, 1 = trader, 0 = PO
mb_retailer	The main buyer is a retailer	binary variable, 1 = retailer, 0 = PO
mb_other_buyers	The main buyer is another type of buyer	binary variable, 1 = another type of buyer, 0 = PO
orchard_size_ha	Size of the orchard	continuous variable (ha)
size_turnover	Small farms (turnover ≤ 2 mil. EUR) Big farms (turnover > 2 mil. EUR)	binary variable, 0 = small farms, 1 = big farms
size_ha	Size of the entire farm	continuous variable (ha)
specialisation	Specialisation of the farm	binary variable, 1 = specialised in fruit/apples, 0 = not specialised
relationship_length	Length of the trade relationship	continuous variable (years)
ease_switch_buyers	The ease of changing the main buyer (proxy for bargaining power)	binary variable, 1 = difficult and costly to switch, 0 = easy to switch
cooperative	The farm is a cooperative	binary variable, 1 = cooperative, 0 = family farm
private_company	The farm is a private company	binary variable, 1 = private company, 0 = family farm
education	Education of the farm manager	binary variable, 1 = university education, 0 = high school
gender	Gender of the farm manager	binary variable, 1 = male, 0 = female

Source: own presentation

the fact that the results need to be robust to different ways of measuring the same variables.

The variables *orchard_size_ha*, *size_turnover* and *size_ha* were used for testing H1 to see whether the size of a farm/orchard influences the occurrence of UTPs. To test H2, concerning whether farmers who are members of POs have a fairer relationship with the PO than farmers trading with other buyers, we created a set of dummy variables based on the type of the farmer's main buyer. Having a PO as the main buyer is the base category. To test H3, we used the variable *relationship_length,* which represents the duration of the trade relationship with the main buyer (expressed in years). The variable *specialisation* is used as a proxy in testing H4 with regard to the relationship between the incidence of UTPs and the dependence of the fruit farm on growing fruit. The variable *ease_switch_buyers* is a dummy variable used as a proxy for bargaining power. To capture bargaining power in our survey, we followed the approach by GORTON et al. (2017) and asked farmers how easily they can replace their main buyers. When farmers reported that switching to another buyer is not easy but costly (for different reasons), or they cannot switch to another buyer because there is no other buyer, we assumed that they have low bargaining power.

Furthermore, the type of the farm, education, and gender of the farmer were added as control variables to account for competing causal explanations and avoid omitted variable bias. These variables represent the characteristics of the farm.

Information about mean and sample shares of the variables used in the probit model can be found in Table 9.

To test these hypotheses and determine which factors influence the occurrence of UTPs at farms, we constructed three probit models. The proposed models differ in the measurement of farm size, using one of the following variables: *orchard_size_ha*, *size_turn over,* or *size_ha*. This approach enables us to check the robustness of our results. The fit and quality of the three proposed models were assessed with four criteria as seen in Table 10.

Table 10. Goodness-of-fit statistics

Goodness of fit	Model 1	Model 2	Model 3
Hosmer-Lemeshow test (*p*-value)	0.3212	0.5284	0.2017
McFadden's R^2	0.3045	0.2879	0.2825
AIC	72.8598	74.0232	74.4081
BIC	96.5033	97.6667	98.0516

Source: own calculations

The *p*-value of the Hosmer-Lemeshow test in all models is greater than 0.05 (level of significance), which indicates that all models fit the data well because the differences between the observed and fitted values are small. McFadden's R^2 has no clear meaning, but the higher the value, the better the fit of the model. The ideal value, as the literature recommends, is in the range 0.2–0.4. This holds for all models, but model 1 is the most suitable from this point of view. McFadden's R^2 is used to assess the predictive power of models, whereas two other goodness-of-fit measures, the Akaike information criterion (AIC) and the Bayesian information criterion (BIC), are used to assess the quality of the additional variables in the

Table 9. Mean and sample share of the variables used in the probit model

Independent and control variables	Sample share (%)	Mean
mb_trader *mb_retailer* *mb_other_buyers*	trader = 34% retailer = 13% other buyers = 21% reference: producer organisation = 32%	-
orchard_size_ha	-	28.9
size_turnover	small farms = 66%, big farms = 34%	
size_ha	-	782.7
specialisation	specialised in fruit/apples = 49%, not specialised = 51%	-
relationship_length	-	7.6
ease_switch_buyers	difficult and costly to switch = 60%, easy to switch = 40%	-
cooperative *private_company*	cooperative = 31% private company = 62% reference: family farm = 17%	-
education	high school = 30%, university = 70%	-
gender	male = 89%, female = 11%	-

Source: own presentation

model. The AIC and BIC values suggest that model 1 has the best fit and predicts the probability of the occurrence of UTPs at fruit farms best. Taking all criteria into account, in sum, model 1 is the most preferred.

Robust standard errors are used to account for heteroscedasticity. To investigate whether multicollinearity could be a problem, we calculated the variance inflation factor (VIF). Low VIF values (<10) in all models indicate low correlation among the independent variables.

The probit models were estimated using the statistical software STATA. Unlike in the linear regression, the parameter estimates in the probit model provide only the direction of the effect of the explanatory variables on the dependent variable but do not indicate the actual magnitude of change or probabilities in the coefficients. Thus, the marginal effects of the coefficients are more informative and useful for policy making. They measure the impact that an instantaneous unit change in one variable has on the outcome variable with all other variables held constant (BARTUS, 2005). The marginal effects in our probit models were calculated as the average marginal effects (AMEs). AMEs calculate the marginal effect for each observation in the data and then take the mean. The AMEs are generally considered more realistic than marginal effects at the means (MEMs) because the sample means used during the calculation of MEMs might refer to either non-existent or inherently nonsensical observations, a problem typically encountered when there are dummies among the independent variables (GREENE, 2003).

A comparison of the three models enables us to see that the results are robust because the coefficient estimates remain approximately the same in all models (Table 11).

We assumed that larger fruit farms face a lower incidence of UTPs. However, our model did not present enough evidence to support H1. The size of the farm, whether measured as the size of the entire

Table 11. Results of the probit models on the occurrence of UTPs: marginal effects (No. of observations = 53)

Independent variable	Model 1			Model 2			Model 3		
	dy/dx	Std. Err.	P-value	dy/dx	Std. Err.	P-value	dy/dx	Std. Err.	P-value
mb_trader (reference: PO)	0.3160**	0.1516	0.037	0.2993*	0.1624	0.065	0.3200**	0.1518	0.035
mb_retailer (reference: PO)	0.3536***	0.1196	0.003	0.3146**	0.1523	0.039	0.3340**	0.1342	0.013
mb_other_buyers (reference: PO)	0.0882	0.1252	0.481	0.0980	0.1326	0.460	0.0951	0.1311	0.468
orchard_size_ha	0.0023	0.0026	0.373	-	-	-	-	-	-
size_turnover (reference: small farms)	-	-	-	0.1160	0.1587	0.465	-	-	-
size_ha	-	-	-	-	-	-	2.50E-06	0.0001	0.972
specialisation (reference: not specialised)	-0.1466	0.1937	0.449	-0.1545	0.2161	0.475	-0.0942	0.2636	0.721
relationship_length	-0.0086	0.0109	0.432	0.0025	0.0101	0.804	-0.0014	0.0102	0.891
ease_switch_buyers (reference: easy to switch)	0.4161***	0.1395	0.003	0.3844**	0.1658	0.020	0.4173***	0.1478	0.005
cooperative (reference: family farm)	-0.2471	0.2351	0.293	-0.1522	0.2478	0.539	-0.1710	0.2215	0.440
private_company (reference: family farm)	0.2542	0.2135	0.234	0.4047**	0.1781	0.023	0.3651**	0.1741	0.036
education (reference: high school)	-0.1988*	0.1148	0.083	-0.1757	0.1240	0.157	-0.1800	0.1232	0.144
gender (reference: female)	0.0698	0.1498	0.641	0.1199	0.1813	0.508	0.0913	0.1694	0.590

Note: significance levels: * 10%, ** 5%, *** 1%.
Source: own calculations

farm in ha, the size of the orchard in ha, or the turnover of the farm, has no significant impact on the occurrence of UTPs.

However, our results support the important role of POs in the fight against UTPs (H2) by showing the relative differences in the probability of the incidence of UTPs based on the type of buyer. The probability of UTPs at the fruit farm is 35% higher when a farmer's main buyer is a retailer than when the main buyer is a PO. Similarly, the probability of UTPs at a fruit farm is 32% higher when the main buyer is the private trader rather than a PO. Thus, membership in a PO significantly decreases the likelihood of UTPs at a farm.

Although the model shows that longer relationships among trading partners reduce the incidence of UTPs, this factor is not statistically significant, and thus H3 was not confirmed. Regarding the farm specialisation and the occurrence of UTPs (H4), the model did not show evidence that farm specialisation in fruit or apple production increases UTPs.

However, statistically significant results were achieved in testing H5 concerning the ease of switching buyers. This hypothesis reflects the imbalance in bargaining power between trade partners, which is the most important driver of UTPs. The results show that when it is difficult for a farmer to replace the buyer, the probability of UTPs is 42% higher. Thus, differences in the bargaining power of trade partners significantly increase the probability of UTPs on Slovak fruit farms. As found in research papers and in our survey, imbalances in bargaining power subsequently have a strong impact on the willingness to accept contractual conditions and are closely related to the fear factor.

The model did not present evidence that the type of the farm included as a dummy control variable affects the occurrence of UTPs. Similarly, the variable *gender* was not significant. But the coefficient of *education* (the control variable) was statistically significant, indicating that when a farm manager has a university degree, the probability of UTPs is lower.

6 Discussion

The results of our research show that UTPs occur frequently in the Slovak fruit supply chain. At the farm level, 79% of the farms (amongst those that do not sell directly to final consumers) reported that a UTP had occurred at least once in the relationship with the main buyer, which is less than that found in other studies. Research by DI MARCANTONIO et al. (2018), which focuses on UTPs in the dairy farm sector in four EU member states, shows that 98% of farmers have experienced at least one UTP. Similarly, the study by CIAA-AIM (2011) on 15 EU member states reveals that 96% of the companies surveyed had been subjected to at least one kind of UTP. However, 19.7% of the fruit farmers who took part in our survey sell their production only to final consumers and, therefore, do not encounter UTPs. During their interviews, many of these farmers admitted that they had chosen this method of selling production deliberately in order to avoid UTPs that they had experienced in the past. Moreover, some farmers decided to process the fruit into products with higher demand (baby food, juice, etc.), rather than selling fresh fruit. This highlights an important issue. Instead of seeking protection in the courts, many farmers simply decide to switch to marketing their production themselves. Although this is possible in the fruit sector, in other sectors (e.g. dairy), farmers have limited opportunity for protecting themselves against UTPs. Some farmers choose to maintain a trade relationship with a buyer who engages in UTPs because they are afraid of retaliation.

A closer look at the paper on UTPs in the dairy sector in Slovakia (to the best of our knowledge the only existing research on UTPs in Slovakia) shows that, although it focuses on a different sector, the results from both surveys on UTPs in Slovakia are similar. Late payments, the most serious UTP in the fruit industry, were the second-most-frequent UTP in the dairy sector (BARATHOVA et al., 2019). SWINNEN (2007) explains that even in the late 1990s, late payments were a major problem for all companies in the food supply chain in Eastern Europe. For food-processing companies, they posed one of the most important obstacles to growth. At that time, the conditions were attributable to the transition from state to private governance of supply chains. As SWINNEN (2007) further explains, the problems have diminished over time in most countries but not everywhere. As both studies on UTPs in Slovakia show, late payments remain a serious problem in the Slovak agri-food sector and still present a significant obstacle to firm growth.

Our research was a part of the one cross-country project that investigated the UTP issue in the fruit supply chains in Slovakia, Germany and Italy (RUSSO et al., 2020). This joint study confirms the frequent occurrence of UTPs in all three states. Among the

most common UTPs in Italy are late payments and the misuse of confidential information. The most common in Germany are grey practices and liability for loss or waste at the buyer's premises. These results confirm our theoretical finding that UTPs are heterogeneous and transaction specific.

Lack of respect for contractual terms by buyers was the most frequent UTP in the research by the CIAA-AIM (2011) as well as the CNC (2011). Problems with contractual terms is also the most common UTP reported in research on UTPs in the dairy sector in four EU member states. In particular, the survey by DI MARCANTONIO et al. (2018) points out that farmers are not protected when contractual terms are breached, because the most frequent UTP across all the regions studied was "the absence of safeguards when the buyer fails to fulfil the contract". A study of UTPs in the Slovak dairy industry shows that among the most common UTPs is a "unilateral change in price imposed by the buyer" (BARATHOVA et al., 2019). These studies suggest that changes in contracts are among the most frequent UTPs, and, in most cases, these changes are related to prices. In our survey of the fruit supply chain, in addition to changes in prices, the most frequent changes concerned the quality.

Our evaluation of the incidence of UTPs at the farm level further shows that although some practices are explicitly defined as unfair in the UTP Directive, some farmers do not consider certain practices problematic, and some are even not relevant to the fruit sector (e.g. misuse of trade secrets). This shows that UTPs depend on the context and on conditions in a particular sector. Although some practices might be unfair in one sector, it does not always necessarily follow that they are unfair in all sectors. From this perspective, the decision to adopt a directive at the EU level might be considered the right approach for creating a minimum level of protection but allowing a flexible implementation of the Directive in the member states. Thus, member states can expand the list when needed to address specific practices in a sector without imposing unnecessary constraints in other ones.

The results of the probit model show that differences in bargaining power, measured as the ease in changing the main buyer, are a strong determinant of UTPs at Slovak fruit farms. Moreover, having a PO as the main buyer significantly decreases the probability of UTPs at fruit farms compared with having a private trader or supermarket as the farmer's main buyer. These results are also in line with the research by DI MARCANTONIO et al. (2018), who found that membership in a cooperative/producer organisation reduces UTPs on dairy farms. Moreover, our results confirm the statistically significant difference between members and non-members of POs in the overall number of UTPs. Members of POs on average experience fewer UTPs. This is an important policy implication confirming the importance of the role of POs in the fight against UTPs. Thus, greater support for POs helps strengthen farmers' position in supply chains. This is also the specific objective of the new post-2020 CAP: to strengthen farmers' position in supply chains by providing further support to POs, through investment grants for processing agricultural commodities on farms or support for short supply chains or local markets.

Cooperation among farmers is at a much lower level in Slovakia as well as in many other new member states, which joined the EU in 2004 or later, than among old member states (FAŁKOWSKI and CIAIAN, 2016). The lack of cooperation is caused by a high level of fragmentation, stemming from the relatively small average size of farms, and, in certain countries, it is due to a cultural mindset in agriculture that distrusts cooperation. However, cooperation is critical, especially for small farmers. The fruit and vegetable sector in particular is characterised by small farms, which lack the capacity to be very successful in supplying their products to supermarkets.

7 Conclusions

Because of the severity of the impacts from UTP, over the years many member states have called for an EU-wide solution. Although Slovakia has raised this topic at the EU level several times, little empirical research has been forthcoming on UTPs in the agri-food sector in Slovakia as well as in the other member states in Central and Eastern Europe. Therefore, this paper presents further evidence on UTPs, focused on the fruit supply chain.

In fulfilment of the first objective of the paper (to investigate the occurrence of UTPs listed in Directive (EU) 2019/633 in the Slovak fruit supply chain), the results of our survey demonstrate the frequent occurrence of UTPs. Overall, 79% of the respondents experienced a UTP in the relationship with their main buyer at least once. The results confirm a statistically significant difference between members and non-members of POs, which offers an important policy implication for combatting UTPs. Our research also

shows that UTPs strongly depend on the context, which leads to important insights for the future implementation of the new directive. Our results suggest that it is important to take into account the specificities in the sector because different sectors might face different problems. While grey UTPs listed in the directive did not prove to be a big issue in the fruit sector, the UTP research by DI MARCANTONIO et al. (2018) shows that they are a problem in the dairy sector. From this perspective, it makes more sense to restrict UTPs through an EU-wide directive, because member states can expand the list of UTPs when needed to address specific practices in one sector, without imposing unnecessary constraints in others.

The second objective of the paper was to investigate the determinants of UTPs at the farm level. Our results reveal that imbalances in bargaining power significantly impact the incidence of UTPs. When it is more difficult for a farmer to change the buyer (due to exit fees, investments made, absence of other buyers, etc.), the farmer is more likely to face UTPs. The results further reveal differences in the occurrence of UTPs according to the type of buyer, and membership in a PO significantly decreases UTPs. POs are believed to increase the bargaining power of farmers and, thus, can improve the position of farmers within the food supply chain. This is also an important policy implication, especially in the context of the new CAP, which aims to strengthen the position of farmers in the food supply chain. Moreover, the research underlines the importance of POs from the perspective of operations and logistics managers. Compulsory quality control systems such as GlobalGap, employed by recognised food and vegetable POs, should be of interest to logistics managers and retail chains, because they can be confident that products are of high quality and strictly controlled and have a high level of traceability. POs can provide not only better quality (due to GlobalGap and other certifications that small producers might lack) but also smooth supply to supermarkets (which is not always a case when trading with small individual farmers), and thus they do not jeopardise the resilience of retailers' supply chains.

Overall, our paper extends UTP research to one of the new EU member states. Compared to existing research, this paper specifically focuses on UTPs in the new EU Directive, and thus it also raises the question of its universality. Using data collected for research on the determinants of UTPs extends the quantitative research on UTPs, offers important policy implications, and supports the conclusions of other research papers (DI MARCANTONIO et al., 2018, 2020).

However, our paper also has some shortcomings. First, one critical issue associated with research on UTPs is the problem of precisely measuring the impact of unfair practices on farmers. Initially, we also intended to measure the impact of every UTP on the business of farmers. Therefore, farmers who identified a certain UTP as at least an important problem were asked whether they could estimate the cost of that practice on their business per year. However, this proved to be a big problem, because a majority of the farmers could not estimate these costs. As seen during face-to-face interviews, farmers had difficulty providing even a rough financial estimate. They perceive the impact of UTPs in terms of opportunity costs more than in quantitative terms. For example, farmers see the cost of late payments in terms of losing the ability to pay their employees or to invest in assets they need. UTPs thus hinder the development of farms. Second, the research on UTPs is based only on farmers' assessments and does not take into account the other party, buyers. Third, the sample size is rather small, which stems from the fact that the issue of UTPs is sensitive. These limitations clearly show a potential direction for future research on UTPs.

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