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Abstract: Producer organisations bear great potential to link small-scale farmers to markets. In post-communist economies, historically negative attitudes towards cooperatives are blamed as barriers to collaboration, but little is known about the broader range of motives to (not) cooperate. We use a structural equation model to analyse cooperation intentions in Kosovo's emerging export-oriented raspberry sector. In this context, negative images surrounding cooperation seem to belong to the past. Widespread positive attitudes towards joining producer organisations were driven by the wish to facilitate farm commercialisation. The most substantial influence on cooperation intentions came from the norms passed on by the family and farm advisory services. Yet, results beyond the econometric model show that a lack of information and knowledge and lack of institutional trust, mainly doubts about the feasibility of producer organisations, could hinder their spread and success.

Keywords: Kosovo, agricultural cooperatives, producer organisations, export-oriented value chain, raspberry production, smallholders, structural equation modelling

Abstrakt: Organizatat e prodhuesve kanë potencial të madh për të lidhur fermerët e vegjël me tregje. Në ekonomitë me të kaluar komuniste, qëndrimet historikisht negative ndaj kooperativave fajësohen si barriera për bashkëpunim, por pak dihet për një gamë më të gjerë të motiveve për (mos)bashkëpunim. Ne përdorim një model të ekuacionit strukturor (structural equation model) për të analizuar synimet e bashkëpunimit në sektorin e mjedrës në Kosovë, një sektor në zhvillim dhe i orientuar drejt eksportit. Në këtë kontekst, imazhet negative rreth bashkëpunimit duket se i përkasin të shkuarës. Qëndrimet e përhapura pozitive ndaj anëtarësimit në organizatat e prodhuesve u shtynë nga dëshira për të lehtësuar komercializimin e fermës. Ndikimi më i rëndësishëm në synimet e bashkëpunimit erdhi nga normat e përcjella nga familja dhe shërbimet këshilluese bujqësore. Megjithatë, rezultatet përtej ekonometrisë tregojnë se mungesa e informacionit dhe njohurive dhe mungesa e besimit institucional, përkatësisht dyshimet mbi realizueshmërinë e organizatave të prodhuesve mund të pengojnë përhapjen dhe suksesin e tyre.

Fjalë kyçe: Kosovë, kooperativat bujqësore, organizatat e prodhuesve, zinxhiri i vlerës së orientuar nga eksporti, prodhimi i mjedrës, fermat e vogla, modelimi i ekuacionit strukturor

Highlights

- The paper analyses cooperation intentions of Kosovar raspberry producers.
- Export-oriented small-scale farmers show positive attitudes toward collaboration.
- Norms passed on by family and farm advisors are decisive in forming the intention to cooperate.
- Constraints to cooperation are found in lack of information and institutional trust.

1. Introduction

Successful commercialisation of smallholder farms is key to achieving sustainable development goals (Ogutu & Qaim, 2019). Integrating smallholders into value chains is hence an important objective of agricultural and rural policies, but these efforts often fall short. Smallholders frequently lack the necessary resources to meet market and export requirements, effectively barring them from entering new marketing channels. This motivates them to realise external economies of scale and develop market power through cooperation (Valentinov, 2007). Therefore, many authors rightly stress that forming and joining agricultural producer organisations is an important facilitator of smallholder integration into value chains (Bijman et al., 2016; Hazell & Rahman, 2014; Ton et al., 2007).

Producer organisations can serve several important functions for smallholder farms, including bulk buying (selling) inputs (outputs) and organising marketing or bargaining activities. Even though producer organisations mainly aim at improving farmers' positions in the output markets, their activities are not limited to marketing efforts. Further benefits for the farmers might arise, for instance, from lobbying activities or training and technical assistance provided to the farmers (Bijman, 2016).

Despite the wide spread of producer organisations worldwide (ICA, 2018) and pro-cooperative policies in many countries (see e.g., Bijman & Iliopoulos, 2014; Zheng et al., 2012), forming and/or joining such groups of mutual assistance remains a challenge for smallholders. This is especially true in post-communist economies. Most existing studies blame the negative historical experience of state-regulated cooperatives for the low interest in participating in producer organisations² (Imami et al., 2021; Tchami, 2007; Wolz et al., 2020; Zivkov, 2013). However, not much is known about whether the sluggish development of cooperation in transition countries is still mainly linked to this historically rooted resentment or whether other forces are at play. Hence, the factors that motivate (or hinder) cooperation remain considerably under-researched (Bouamra-Mechemache & Zago, 2015; Gijssels & Bussels, 2014).

While the discussion about farmers' cooperation decisions often links to mainly economic motives (Fürstenberg, 1994; Laurinkari, 1994), there are calls to consider a broader set of socio-economic and psychological variables to explain farmers' behaviour (e.g., Jackson et al., 2006; Willock et al., 1999). This is underlined by some recent empirical research also in transitional contexts. For instance, Golovina and Nilsson (2011) found that a lack of knowledge about farmers' socio-psychological conditions hindered government officials' successful initiation of cooperatives in Russia. Möllers et al. (2018) analysed the intentions of Romanian farmers to collaborate formally. They found that they are not only influenced by economic factors such as expectations for better prices but also by norms. Hao et al. (2018) investigated cooperative membership and farmers' choices of marketing channels in China, finding that human asset specificity, like education and skills, and the families' affiliation to state organisations (village cadres) increased the likelihood of cooperative participation. They also concluded that more systematic evidence on how farmers make their choice about cooperation is needed. Concerning the Western Balkans, Kola et al. (2014) and Skreli et al. (2011) demonstrated the positive effects of, e.g., farmers' social capital on collective action such as joining an agricultural cooperative.

Addressing this gap in research, our paper sheds new light on the question of what drives and hinders the formation of a positive intention to formally cooperate in a transition economy. We apply Ajzen's Theory of Planned Behaviour (TPB), a solid and broadly tested framework to analyse the formation of an intention to perform a certain behaviour (here, joining a producer organisation), with a structural equation model. TPB models are highly useful for understanding farmers' motivations and self-perceived abilities to act (Burton, 2004). Economic and non-economic factors are explored in detail regarding farmers' beliefs about the outcomes of a possible membership in a producer organisation and the resulting intentions to join one.

The empirical data refers to the case of Kosovo. Although rural Kosovo has its unique institutional history, the transitional developments of its farming sector resemble those in other Southeast European countries. In this regard, Kosovo's agricultural sector – typical for the whole region – is characterised by small-scale farms, low market integration, and a high degree of underemployment (EFSE, 2014; Latruffe & Desjeux, 2014; Mathijs & Noev, 2004; Osmani et al., 2013). Kosovo thus provides an excellent example for analysing the formation of cooperation intentions among smallholders in Southeast Europe who are likely to benefit from agricultural producer organisations in their struggle to commercialise. Similar to other post-communist economies (see above), the low level of cooperation among farmers in Kosovo is explained by a lack of trust in the cooperative institutions (Muriqi et al., 2019). Our study focuses on

² Throughout our field research, we refrained from using the term 'cooperative' to avoid this negative connotation from the socialist past. Instead, we used the term 'producer organisation', which we also continue to use in this paper. We use 'producer organisation' as an umbrella term for member-oriented organisations focusing jointly on the economic benefits of the members in the field of agricultural production, processing, bargaining, lobbying and marketing activities (e.g., agricultural cooperatives, farmer-based organisations, producer associations).

the raspberry sector. This export-driven value chain has seen significant growth in recent years. Collective investments needed to meet food safety and quality standards should raise the interest of small-scale farmers in collaboration (Batzios et al., 2021; Imami et al., 2021). Our study thus highlights a segment of commercially active farms with potentially high benefits resulting from cooperation.

The rest of the paper is structured as follows: we will first introduce our theoretical and analytical model in Section 2, followed by a brief introduction of the empirical study design in Section 3. Section 4 presents the structural equation model results, and Section 5 concludes.

2. Theoretical Background

How Cognitive Considerations Motivate Collaboration: the Theory of Planned Behaviour

Studies on the motivation behind forming intentions³ and subsequently acting often follow the Theory of Planned Behaviour (TPB) (Ajzen, 1991; Fishbein & Ajzen, 2011). The TPB states that a person's actual behaviour is preceded by the intention to perform that particular behaviour. The theory originates from social psychology but has been successfully applied in many research fields (Armitage & Conner, 2001; Traikova et al., 2018). It has emerged as the dominant theoretical framework in attitude-behaviour research (Olson & Zanna, 1993).

The TPB predicts intentions, defined as the antecedents of the actual behaviour, through three components (cognitive constructs): (1) the *attitude* towards the behaviour, (2) the *subjective norms* that relate to the specific behaviour, and (3) the *perceived behavioural control*, which describes the self-efficacy of the decision-maker (Figure 1). All are shaped by certain beliefs, in our case, beliefs regarding membership in a producer organisation. Ajzen and Fishbein (2005) distinguish three types of beliefs linked to the three cognitive constructs: behavioural, normative, and control beliefs.

The projection of the outcome of a behaviour is known as behavioural beliefs. These beliefs correspond to the individual's expectations (the potential organisation member) (Douglas & Shepherd, 2002; Möllers et al., 2018). If positive outcomes of a behaviour are expected (here, positive outcomes of becoming a member of a producer organisation), a positive attitude (towards joining a producer organisation) is developed.

Normative beliefs reflect what one considers the norm in society regarding a certain behaviour. In the case of producer organisation membership, one may ask: does organisation membership have a positive connotation in the eyes of others? What will family, friends, and peers think and say about such membership? The resulting subjective norm will support or inhibit a behaviour depending on the subjectively perceived pressure of others on the decision-maker.

Control beliefs deal with perceived difficulties regarding a behaviour. In our case, someone believing in their own ability to face and overcome all the possible hurdles on the way to cooperation is an essential step towards developing the intention to join a producer organisation. For example, many people may think that they lack the ability to deliver the necessary paperwork or to fulfil other membership obligations. In the TPB, control beliefs determine the individual perception of one's own ability to overcome expected hurdles and are termed 'perceived behavioural control'.

All three constructs – *attitude*, *subjective norms*, and *perceived behavioural control* – together form the intention to act in a specific way, e.g., to join a producer organisation (Figure 1). When the *attitude* and the *subjective norms* are more favourable, and the *perceived behavioural control* is greater, the intention to join will be higher. By joining a producer organisation, the individual farmer seeks to reach a higher level of utility and considers both economic and immaterial benefits that depend on social

³ The term 'intention' indicates how 'hard people are willing to try [and] how much of an effort they are planning to exert, in order to perform the behaviour' (Ajzen, 1991: 181). The use of intentions to proxy actual behaviour is theoretically and methodologically well accepted (de Jong, 2000). Divergence between behaviour and stated intention is assumed to be caused by further information obtained by the respondent after the intentions have been revealed (Dustmann & Okatenko, 2014; Manski, 1990). Yet, since the use of intention data as a proxy for actual behaviour is not uncontested, we refer the reader to the critical evaluation in Manski (1990).

relations and perceived transaction costs (Hao et al., 2018; Möllers et al., 2018). These utilities are first and foremost reflected in the attitude. They are influenced by subjective norms and restricted by perceptions about whether the behaviour can be executed at all (and hence whether benefits can materialise). As indicated in Figure 1, the three intangible TPB constructs are defined through measurable indicators reflecting a relevant set of behavioural beliefs.

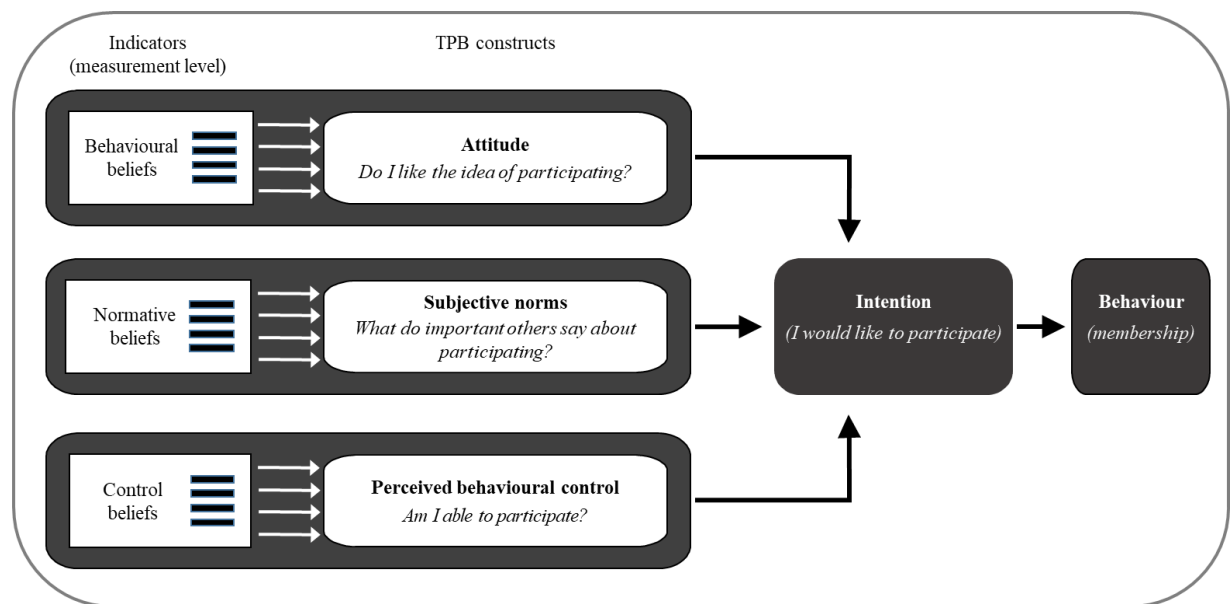


Fig 1. A Theory of Planned Behaviour model of determinants of organisation membership. Source: Authors' illustration based on (Ajzen, 1991).

Building a TPB Model

Our theoretical and empirical model aims at gaining a deeper understanding of the underlying determinants of why farmers are (not) willing to join a producer organisation. We operationalise the model econometrically as a structural equation model (SEM) tight-fitting the TPB elements shown in Figure 1. We opted for a partial least squares (PLS) model. It uses a non-parametric approach with which we can handle the complex TPB modelling constellations with multiple variables. The PLS-SEM maximises the explained variance of the dependent variable(s) by conducting sequential estimations of a number of fixed equations. Thus, it deals with only one part of the whole model network at a time, making it a very efficient approach in terms of sample size (Hair et al., 2017).

The PLS-SEM has several features that support our approach. First, it is prediction-oriented. This is in line with our aim to explain the intention of farmers to join a producer organisation. Second, like all SEM, it can explicitly deal with intangible phenomena. This is in particular useful for investigating the intangible cognitive constructs of the TPB. A construct such as *attitude* is not directly observable but latent. Thus, the construct is a composite variables, operationalised as linear combinations of several indicator variables (Hair et al., 2009). In our TPB model, we implemented context specific indicators (beliefs) that capture the multiple aspects that farmers in Kosovo must consider before joining a producer organisation, and which define the latent constructs (see Figure 1).

The PLS-SEM is visualised via related path models (Hair et al., 2011). It contains three different sub-models (see Figure 2). The structural inner model depicts the core TPB constructs (*attitude*, *subjective norms*, and *perceived behavioural control*). It describes the relationship between the latent constructs (displayed as ovals). The outer models define the constructs based on indicator variables (beliefs), which are displayed as boxes. The arrows between them indicate the relationships with the respective construct, which can be formative or reflective. Arrows pointing from a belief box to a TPB construct (oval) show a formative effect (the formative belief indicators determine the construct), arrows pointing from ovals to boxes show reflective effects (the indicator reflects attributes of the construct).

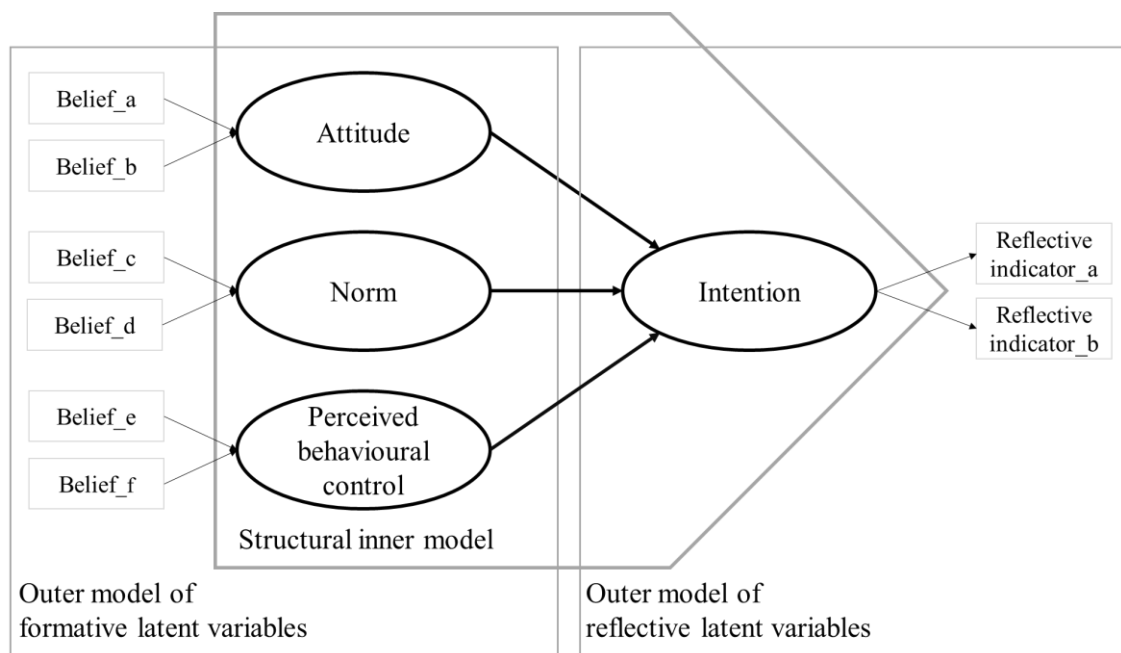


Fig 2. Division of the path model in three sub-models. Source: Adapted from Hair et al. (2017)

Note: The number of formative belief indicators and reflective indicators may vary.

The same construct can be operationalised in either way (formative or reflective). In our model, we used mainly formatively measured constructs due to the explorative character of our study and our specific interest in the concrete factors determining the constructs (Chin, 1998; Coltman et al., 2008).⁴

3. Study Design

The data for our model stems from a survey of raspberry producers in Kosovo. Like in all countries in Southeast Europe, Kosovo's farm sector is characterised by smallholder farms that struggle to commercialise and stand to benefit from cooperation. Our study therefore provides an interesting case for a deeper understanding of the formation of cooperation intentions among smallholders in the area. The commercial production of raspberries for export has been explicitly identified as a promising option for improving farm employment and farm income in Kosovo (Gjokaj et al., 2017b). However, the rather basic management systems, and lack of farm equipment and financial resources to invest in modern production technology make it difficult for small farmers in Kosovo to become competitive in an export-oriented sector. Furthermore, inefficient supply chains, high harvest and logistical costs as well as inadequate packaging of fresh fruits, without product classification, are currently a hindrance to the market success of smallholders (MAFRD, 2016a, 2016b).

Although cooperation could be a straightforward solution to these issues, it is not common in Kosovo (Muriqi et al., 2019).⁵ We therefore focus our analysis on farmers who do not yet formally cooperate, but may potentially benefit as they are engaged in the emerging and commercially oriented raspberry sector.

The questionnaire design for the survey was guided by the recommendations for TPB variables by Ajzen (2006). We used 28 indicator statements (Table A 1 in the online Appendix) for measuring beliefs and operationalise the TBP constructs. As is common for TPB models, we used Likert-style scales for the answers to all indicator statements. The indicator variables were developed along the literature and knowledge of the situation on the ground. Diamantopoulos and Winklhofer (2001) recommend discussing the formative and reflective indicator variables for latent constructs with experts to capture all relevant

⁴ Formative relationships between indicator statements and constructs are best estimated using a PLS-SEM (Hair et al., 2017).

⁵ This is in contrast to small farms in the fruit and vegetable sector in Western Europe, which commonly market their products through producer organisations to be able to meet the requirements of globalised food chains. Fruit and vegetable producer organisations have a market share of around 40% in Germany and 50% in Italy and Spain (Bijman & Iliopoulos, 2014).

aspects. Following this advice, our indicator statements were reviewed by several experts working in the Kosovar raspberry sector and adjusted accordingly. Furthermore, the statements were refined once more after pre-test-interviews. Thus, we are confident that the suggested indicators cover all important aspects and are suitable for the specific context of Kosovar raspberry producers.

The survey took place in September and October 2017 in Kosovo. The interviews were conducted in Albanian by one of the authors together with a local research assistant. The sample was drawn from a list of raspberry producers in 2016 compiled by the Ministry of Agriculture, Forestry and Rural Development of Kosovo. The list contained a total of 1,862 raspberry producers. The majority of farmers were ethnic Albanians (almost 70%). Due to time and budget constraints, we focused our study on this ethnic group and concentrated mainly on the region of Pristina, which is the main region for raspberry production in Kosovo. We randomly selected about 20% of the raspberry producers in this area. Another important but considerably smaller production area is the region of Ferizaj. Here, we sampled 9% of the producers. The remaining producers are scattered around five other regions (not all of which have been covered in this survey), and represent 7% of the producers in our survey. The survey resulted in 186 complete interviews.⁶ Of these, 186 farmers 22 were already members of a raspberry producer group. While our core analysis focuses on the intentions of the 164 non-members to join a producer group, we added some descriptive comparisons between members and non-members, for example, to gain a better understanding of whether the perceived benefits of becoming a member are real. In addition to the quantitative survey, qualitative interviews were conducted with six experts in the Kosovar raspberry sector and with a few farmers. These informal interviews helped us to gain a better understanding of how the raspberry value chain, raspberry cooperatives and farms operate. They were used to inform our discussion of results and to refine the quantitative questionnaire (see above). We are aware that our sample is not fully representative and our study is exploratory in nature. Despite this, we are convinced that our case study reflects the situation of many smallholder farms and reveals typical drivers and barriers to commercialisation not only in Kosovo but also in Southeast Europe.

4. Results

Before we present, evaluate and interpret our PLS-SEM, we provide some background information on the sampled farmers, the situation regarding producer organisations in Kosovo's raspberry sector, and the level of formal and informal collaboration in our sample.

Sample Characteristics

The sample of raspberry producers is dominated by middle-aged men. Most of the interviewees (91%) were male, because the traditionally male heads of households are usually also the farm managers. On average, the respondents were 43 years old, ranging between 18 and 75 years, and nearly all had finished at least twelve years of school education. However, the majority did not have any formal agricultural education. This is typical for Kosovo, where farming is often a secondary, subsistence-based activity.

The average farm size was four hectares of agricultural land. Around 80% of the smallholders used a maximum of 50% of their total farmland for raspberry cultivation, and only 7% utilised their whole farmland for raspberries. Raspberry plantations covered on average 0.75 ha, ranging between 0.06 and 5.00 ha. Most of the sampled farmers (90%) started raspberry cultivation in 2015 or later, and so far, it is only a secondary source of income for the majority (97%).

Producer Organisations in the Kosovar Raspberry Sector

In order to analyse farmers' intentions to join existing producer organisations (as opposed to starting a new producer organisation), it is necessary to understand the nature of these organisations, which

⁶ According to Hair et al. (2017), our model would require a minimum sample size of 60 observations for meaningful results. Thus, we consider our sample size to be sufficiently large for the PLS-SEM. One outlier was removed from the sample.

continue to grow within the Kosovar raspberry sector. With the help of local experts, we could identify nine producer organisations, which are all open to accepting new members (Table A 3 in the online Appendix). With the exception of 'AgroRedGold', which has been in business since 2010, all organisations were founded between 2014 and 2017. The producer organisations are mostly run as non-profit organisations (NGOs) due to existing fiscal incentives; only one is registered as an agribusiness entity. Most of the producer organisations are actively supported by aid organisations such as Caritas Switzerland or USAID. All groups are multi-purpose groups and focus on activities such as training and advisory services as well as marketing efforts. The group 'Mjedra Lapi', for example, also offers Global G.A.P. certifications at reduced prices for its members. The organisation 'AgroRedGold' keeps several small freezing units in villages around Prizren, so that the berries can be sold collectively once per year. The federative organisation 'Mjedra Kosovo' unites the eight regional associations and engages in national bargaining activities, as well as international marketing activities. One of their main goals is to promote raspberries produced in Kosovo at international fruit fairs and thus create new linkages in the value chain. Accordingly, all of the abovementioned associations are offering important services for smallholders engaged in business-oriented raspberry production.

Formal and Informal Collaboration among Kosovar Raspberry Producers

Only a small share (12%) of our sampled farmers were formally collaborating as members in producer organisations at the time of the survey. While our main analysis concentrates on non-members and their intentions to engage in producer organisations, we discuss some important characteristics of both groups here. Unlike the rather low share of formal collaboration, there was a high level of informal collaboration. Nearly 90% of all sampled farmers worked together informally with friends or relatives involved in raspberry production. The main fields of informal collaboration were the exchange of experience (86%) and of machinery (60%), the procurement of inputs (33%), the mutual exchange of labour (20%), and the joint selling of fruits (13%).

Compared to the group of non-members, formal organisation membership was linked to a significantly bigger network within the community of raspberry farmers, whereby members knew three times more raspberry producers on average and also their closer network of contacts in this regard was bigger (see Table 1). Non-members often did not know any of the organisations operating in the raspberry sector in their region (this is the case for 66% of all interviewed farmers). Thus, producers were not aware of the possibilities of formal cooperation. One reason for this low level of awareness might be that most producers, as well as most producer organisations, were novices in the raspberry sector. Most farmers started raspberry production after 2014.

Members of producer organisations participated more often in short courses and agricultural extension events. They further reported easier access to fertiliser, pesticide, and irrigation, but there was no different perception of accessing shoots, workers, credit or machinery between both groups (Table 1). It seems that organisation members were more successfully commercialising than non-members, because they more often planned to enlarge their area under raspberry production within two years.⁷

⁷ These results are in line with Hao et al. (2018) who found that Chinese apple producers participating in a producer organisation had more plots of land and participated on average more often in technical training for apple production than non-members.

Tab 1. Differences between organisation members and non-members. Source: own calculation

Organisation membership	Member	Non-member	Exact prob
How many raspberry producers do you know?	68	22	< 0.000
How many raspberry producers do you talk with about challenges and opportunities in raspberry production at least once a month?	17	6	< 0.000
Do you plan to expand your raspberry production in the next two years? (Percentage of farmers who answered „yes“)	32%	21%	< 0.000
Please indicate how you would rate your access to the following means of production or services 1=very hard, 2=hard, 3=slightly hard, 4=neither hard nor easy, 5=slightly easy, 6=easy, 7=very easy			
1) Fertiliser	5.9	4.9	0.002
2) Pesticide	5.9	4.7	0.002
3) Raspberry shoots	5.4	5.0	0.362
4) Irrigation system	5.6	4.8	0.030
5) Hired workers	4.2	3.6	0.233
6) Financial services	3.5	3.3	0.840
7) Advisory services	6.1	5.7	0.006
8) Machinery services	5.4	5.1	0.138

Note: N = 186; 22 members and 164 non-members; group comparisons based on Mann-Whitney Test which can be applied to small not normal distributed samples (Nachar, 2008).

Turning towards the subsample of 164 farmers who were not yet participating in formal collaboration, we observed a clear interest to formally collaborate. More than 80% agreed that they would enter into formal collaboration with other raspberry producers within two years should the opportunity arise. Given the actual low level of cooperation in the region and the assumption that farmers in post-communist countries often have little interest in participating in such associations (Tchami, 2007; Zivkov, 2013), this seems a surprising result.⁸ However, Muriqi et al. (2019) recently found that 65% of their sample of farmers in Kosovo were open to cooperation. Similarly, Möllers et al. (2018) revealed that two-thirds of their sample of commercially active smallholders in Romania expressed a high interest in formal collaboration. Hence, we believe that for the group of commercially active smallholders, cooperation is in fact a highly interesting opportunity, and low levels of participation might rather be linked to a lack of knowledge about existing opportunities (see above) and insecurity about the workability of producer organisations. This is reflected, for example, in stated doubts about the feasibility of the producer organisation as a concept. A clear majority of farmers who were not yet group members (66%) indicated that producer organisations were generally seen as a good opportunity, but that they did not believe that they could be successfully established and run in Kosovo. In our informal conversations, farmers gave examples of nepotism and elite capture to underline this assumption. Thus, while the majority of interviewees trust their fellow raspberry producers, there seems to be a significant lack of institutional trust.

⁸ The hypothetical nature of the intention statements raises questions concerning the so-called hypothetical bias, which may result from lack of incentives for respondents to truthfully reveal their preferences. Several measures have been proposed to minimise this bias. Among them cheap talk is widely used (although its effectiveness has been debated; see e.g., Bonnicksen and Ladenburg (2015)). Therefore, we included in the introduction of the survey a short reminder to carefully and truthfully answer the survey. Moreover, cooperation may be seen as a socially reputable behaviour, which makes the results vulnerable to social desirability bias. However, the farmers were fully aware that they were talking to university students who were not related to any NGO and thus benefits (financial or otherwise) were not to be expected. But in the end, it is impossible to determine to what extent a hypothetical or social desirability bias are present. Consequently, our results should be interpreted with caution.

Partial Least Squares Structural Equation Model of Farmers' Intentions to Join a Producer Organisation

Before we can interpret the PLS-SEM with which we analyse farmers' intentions to join a producer organisation, all three sub-models (see Figure 2) have to be tested for their validity. The structural inner model can only be considered if the outer models are valid (Hair, Hult, Ringle, & Sarstedt, 2017). The validation relies on criteria suggested by Huber et al. (2007) and Hair et al. (2017). Figure 3 presents the final PLS-SEM results.

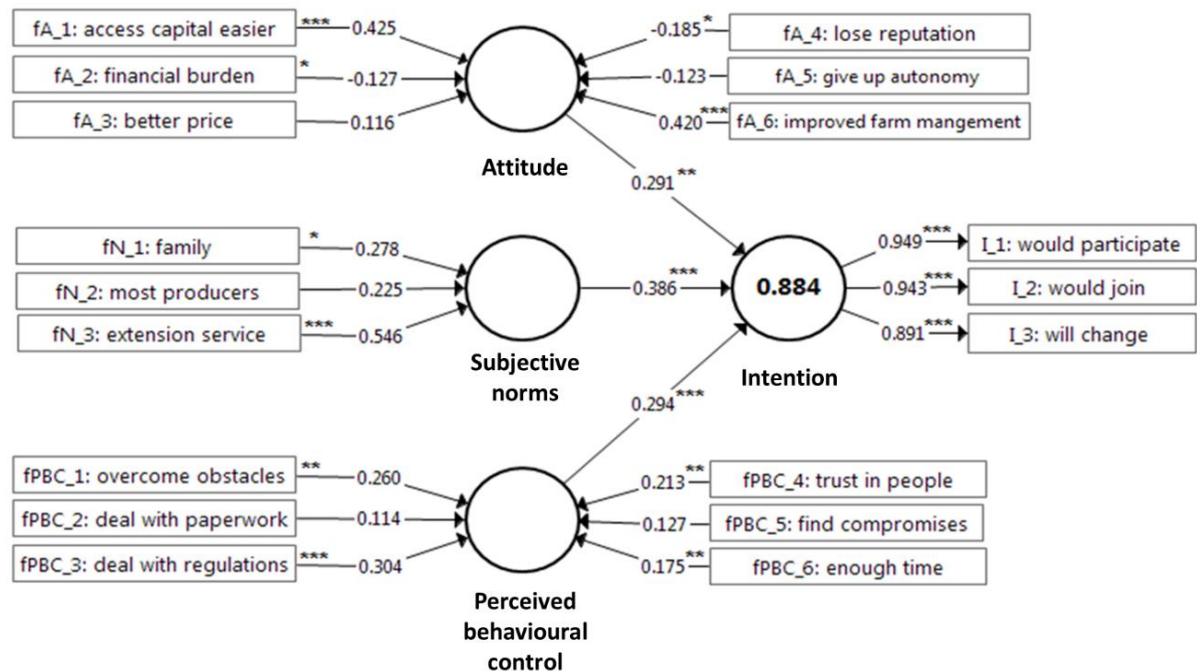


Fig 3. PLS estimation results for predicting the intention to join a producer organisation. Source: Authors' graph created with SmartPLS (Ringle et al., 2015)

Note: The model was run with a maximum of 3000 iterations and 5000 samples for the bootstrapping procedure. N = 164.

Formative indicators show outer weights, reflective indicators show outer loadings. The inner model shows path coefficients and R².

*** indicates a significance level of 1%, ** of 5% and * of 10%.

The indicator statements used in the model with their wording (Table A 1) and summary statistics (Table A 2) are provided in the online Appendix.

Validity Evaluation: Outer Model of Reflective Latent Variables

Intention is the only reflective latent variable. It describes the intention to formally collaborate within two years. Following Hair et al. (2017), several tests were conducted to assess the reliability and validity of the construct. A summary of these tests is presented in Table A 4 in the online Appendix. According to our diagnostics of Cronbach's alpha, composite reliability, average variance extracted (AVE) and explanatory power, no problems could be recognised. Thus, we consider the suggested reflective operationalisation of the constructs as valid and reliable.

Validity Evaluation: Outer Model of Formative Latent Variables

To prove that the formative constructs are measured correctly, each formative construct is connected to a reflective construct that measures the same phenomenon with reflective indicators (redundancy analysis). Both constructs should be highly correlated as expressed by a structural coefficient of at least 0.7 and R² greater than 0.5 (Hair et al., 2017). The analyses showed that all three formative constructs *attitude*, *subjective norms* and *perceived behavioural control* meet these convergence validity requirements when displayed in a PLS model solely with their corresponding reflective construct (Figure 4).

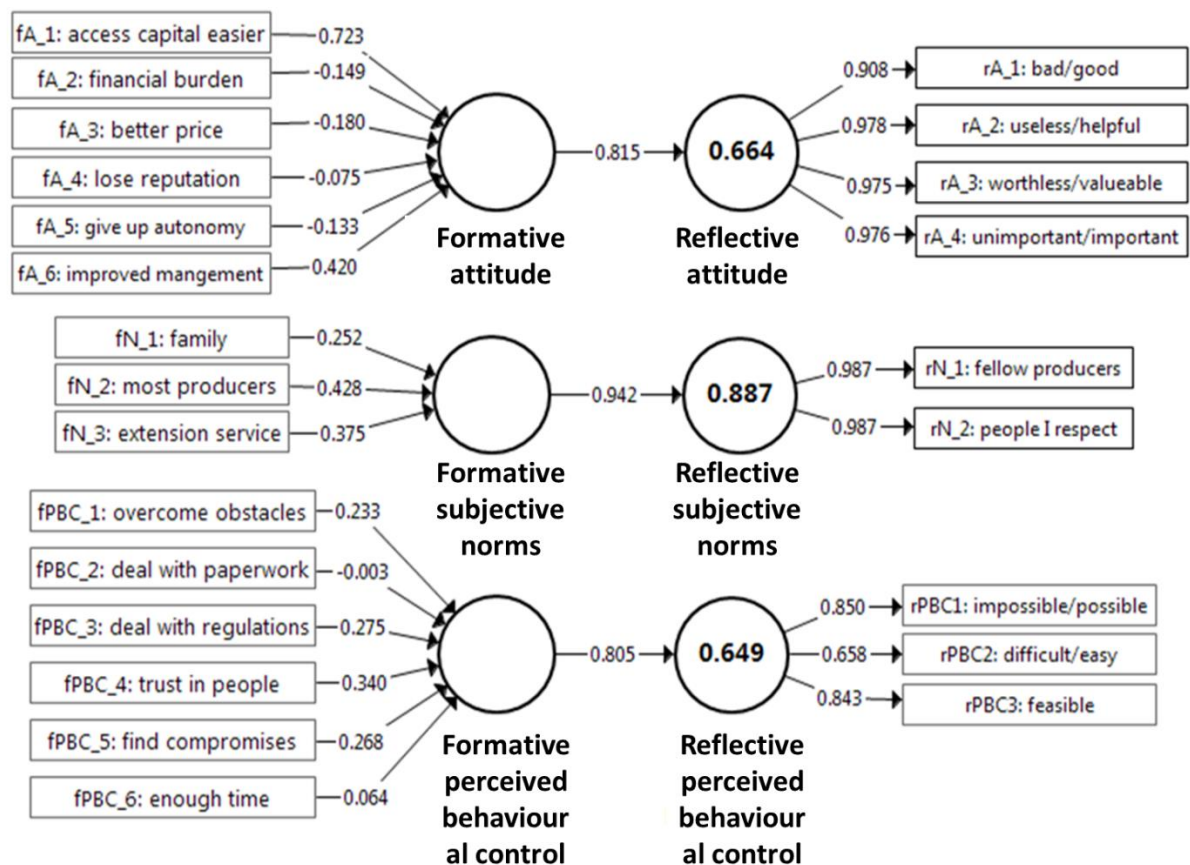


Fig 4. Redundancy analysis for attitude, subjective norms, and perceived behavioural control. Source: Authors' graph created with SmartPLS (Ringle et al., 2015)

Note: Ovals represent latent variables with R². Rectangles stand for indicator beliefs and the arrows between latent variables contain the path coefficients. The outer model shows the outer loadings. N = 164.

To avoid collinearity issues between beliefs, variables with VIF (variance inflation factor) values higher than five should be dismissed from the model (Hair et al., 2017). With the exception of one, all beliefs had VIF values below five (Table A 5 in the online Appendix). With 5.003 the belief *fN_3* only minimally exceeded the conservative benchmark of five recommended by Hair et al. (2017), but is not even close to the higher thresholds suggested, for instance, by Huber et al. (2007).

The suggested belief indicators are empirically supported when their weights are significant (Table A 5 in the online Appendix). Even though five of the suggested beliefs had no statistically significant outer weights, four of them (*fA_3*, *N_2*, *fBPC2* and *fPBC_5*) can still be interpreted as absolutely important, because their outer loadings exceeded the critical value of 0.5 (Hair et al., 2017). The belief *fA_5*, did not meet the required minimum weight and loading, but remained in the model due to content validity reasons (Hair et al., 2017).⁹ Based on the evaluation criteria suggested, we consider the outer model of formative variables also as valid.

Validity Evaluation: Structural Inner Model

The structural inner model is judged based on five parameters, which consider collinearity among constructs, significance of path constructs and its predictive capabilities (Table A 6 in the online Appendix).

⁹ According to Hair et al. (2017) the indicator can remain in the model when it is theoretically relevant and there is no potential content overlap with other indicators of the same construct. The indicator *fA_5* 'When I think of formally collaborating with other raspberry producers, I think I would have to give up significant autonomy' did not meet the required thresholds, but we consider it as a theoretically important indicator, especially in the post-communist context where older farmers have experienced state-led cooperatives with loss of individual autonomy.

First, VIF values for the constructs are between five and ten. Huber et al. (2007) set the critical benchmark at ten, which is not overstepped in our model. However, the conservative VIF benchmark suggested by Hair et al. (2017) is slightly exceeded. Second, the path coefficients, which present the hypothesised relationship between the constructs, were all significant and positive within the structural model. Third, the model has a predictive accuracy of 88% ($R^2 = 0.884$) to explain the construct *intention*. According to Hair et al. (2017), the explained variance of *intention* can be considered substantial. Fourth, the effect size (f^2) indicates that *attitude* and *subjective norm* have a large effect, whereas *perceived behavioural control* only has a weak effect on the predictive accuracy of *intention* (Hair et al., 2017). Fifth, the cross-validated redundancy measure Q^2 was created for *intention* by applying blindfolding. The positive value of 0.697 clearly confirms the construct's predictive relevance (Hair et al., 2017). The structural inner model is also consistent with the quality criteria and we feel confident to proceed with the model interpretation.

Model Interpretation

All TPB constructs showed a significant influence on the *intention* to join a producer organisation (Figure 3). *Norm* had the highest coefficient, followed by *perceived behavioural control* and *attitude*.

According to the model, a positive *attitude* towards the *intention* to formally collaborate was significantly associated with the beliefs that there will be 'easier access to capital' (fA_1) and that 'farm management will improve' (fA_6). The importance of 'easier access to capital' (fA_1) underlines the fact that farmers in Kosovo lack resources for farm investment and, at the same time, face difficulties in accessing affordable bank loans. So far, no specialised agriculture bank operates in Kosovo and existing credit institutes charge relatively high interest rates between 10.5% and 26.2% per annum for agricultural loans (Gjokaj et al., 2017a). It is important to note here that although access to capital was an incentive to become a member of a producer organisation, the expert interviews revealed that none of the existing producer organisations offered this. Thus, this issue could not be easily overcome by collaboration alone. Another important driver for a positive attitude towards producer organisations was the belief that 'farm management will improve' (fA_6). This shows that the farmers, who widely lack formal education in agriculture, were keen to reach a higher level of professionalism in managing their raspberry plantations through collaboration.

Two of the beliefs, 'expect a significant burden through financial contribution' (fA_2) and 'lose reputation' (fA_4), had a significantly negative effect on *attitude* and thus decreased the intention to join a producer organisation. The idea that membership in a producer organisation could become a significant financial burden is certainly linked to the fact that many farmers stated that their total household income was only sufficient for food and housing. Thus, for about one-fifth of the respondents, membership was seen as an inhibitive financial burden. This finding could potentially indicate a 'middle-class effect' within producer organisations, which suggests that producer organisations mainly serve the middle class, since they exclude the poorest farmers and are comparatively unattractive for the rich (Bernhard & Spielman, 2009; Verhofstadt & Maertens, 2015). Yet, it may also well be the case that some of the interviewed farmers were misinformed about the actual membership fees, which were typically around €50 per year, and likely affordable for most farmers.¹⁰ The negative effects of membership in a producer organisation on a farmer's reputation were most likely linked to the negative connotation of cooperatives in transition countries. However, the majority of farmers did not share this view.

The construct *perceived behavioural control* was significantly determined by the four beliefs: 'to be able to deal with rules and regulations' (fPBC_3), 'to overcome typical obstacles' (fPBC_1), 'to have sufficient trust in people' (fPBC_4) and 'to have enough time to meet on a regular basis' (fPBC_6). The belief 'to be able to deal with rules and regulations' (fPBC_3) had the strongest effect on the intention to join a producer organisation. Formal and informal rules and regulations depend on the individual organisation. A marketing group must implement regulations to assure all members meet certain quality requirements, whereas a machinery group needs to find regulations to fairly distribute costs and machine usage among the members. In general, producer organisations are supposed to serve their members' needs and thus

¹⁰ An average gross income is around €350 per month (ASK, 2018).

regulations should not overburden them. However, farmers tend to value their independence. Those who feel comfortable adapting to established rules or social norms practiced within the group will more easily develop interest in collaboration. Hence, the confidence in one's own ability to deal with rules and regulations significantly increased the intention to join a producer organisation.

It is not surprising that the belief 'to have sufficient trust in people' (fPBC_4) was of high relevance in our model, because mutual trust is an important component of social capital, which decreases transaction costs and thus facilitates cooperation.¹¹ Zivkov (2013) identified low levels of social capital as a hindering factor for joining a producer organisation in Western Balkan countries. Similarly, Möllers et al. (2018) identified a lack of trust as a possible barrier to transforming a positive intention into actual membership in their case study in Romania. Many authors make a link between a lack of trust and the negative historical legacy of state-led cooperatives (e.g., Hagedorn, 2014). This is the case, for example, in Albania, where the development of producer organisations remains a very delicate issue because of trust issues from the communist era (Sokoli & Doluschitz, 2019). However, in Kosovo, the Yugoslav socialist history does not seem to have had a detrimental impact in this regard: older farmers we talked to during qualitative interviews remembered socialism as the 'good old times', where they easily accessed inputs from cooperatives and delivered their produce.¹² However, farmers were also convinced that cooperation could only benefit them if they personally know (and trust) the head or the donor of an organisation. Thus, it seems that today's inefficient formal institutions are probably the more relevant factor hampering cooperation among smallholders than the negative historical experience of cooperatives as state-regulated organisations.

For *subjective norms*, which had the strongest influence on cooperation intentions, the belief that 'farm advisory services would recommend joining producer organisations' (fN_3) was most important. It was followed by the belief that the 'family is in favour of membership in a producer organisation' (fN_1). The importance of the family is not surprising in the Kosovar context, in which the traditional household with its strong family-related norms influences decisions in many fields, including the farm business. The fact that advisors had a significant normative influence on intention formation is certainly linked to the commercial orientation of the sampled farms and their strong interest in developing their farming and management skills (see above). Raspberries are produced mainly for export in Kosovo and the production is promoted by development and government organisations. Thus, the farmers are open to and seem to expect further guidance from the initiators of these activities.

5. Conclusion

Commercialisation is an important means of promoting employment and income growth among smallholders in many developing and transition economies. However, smallholder farms often need to join forces and collaborate to be able to successfully enter (export) markets. Especially in transition economies, collaboration is often underdeveloped and the motivations behind farmers' decisions to (not) cooperate are widely under-researched. Often, it is assumed that in post-communist economies, farmers are reluctant to form or join groups of formal cooperation due to the historical legacy of the socialist collective farms. However, our analysis provides important empirical evidence that this negative image may become a thing of the past in Southeast Europe. Similar to previous findings from Romania (Möllers et al., 2018), we show that in Kosovo, commercially oriented smallholders are likewise open to formal modes of mutual collaboration and are generally highly interested in joining agricultural producer groups. But of course, this high openness towards cooperation must be seen in relation to the sample of farmers in a value chain which is export-driven and requires collective investments to fulfil European Union food safety and quality standards.

With the help of a methodologically state-of-the-art PLS-SEM, and by addressing the call for a broader view on drivers of collaboration, we identified a set of indicators that influence farmers' intentions to cooperate. The cognitive constructs of the Theory of Planned Behaviour, *subjective norms*, *attitude* and

¹¹ See, for example, the meta-analysis of the empirical literature on farmer organisations by Grashuis and Su (2019).

¹² Similarly, Kovacic et al. (2001) found a positive attitude toward former collective farms in Croatia.

perceived behavioural control, are key elements of the model to explain the cooperation intentions of small-scale raspberry producers in Kosovo. Overall, norms turned out to be the strongest facilitator of cooperation. Farmers were highly willing to follow the recommendation of farm advisory services in this regard, which could provide a very important toehold for promoting collaboration. Further, we identified a number of concrete and pressing issues hindering cooperation, which seem typical for the context of Southeast European smallholder agriculture. First of all, a lack of financial means posed a barrier to cooperation. Even though the belief that group membership could be a prohibitive financial burden had overall only a moderate influence, the majority of farmers pointed at financial constraints by indicating that their household income was fully needed for food and housing. This leads us to conclude that low household incomes could especially prevent the poorest farmers from joining producer organisations. However, financial needs were also seen as a motivation to collaborate and in particular farmers who were eager to professionalise their businesses sought collaboration as a potential way to gain access to finance. Similarly, the hope to be able to improve the management of the farm through collaboration was an important driver for the intention to join a producer organisation. These two aspects, which might be seen as linked to the wish to develop and commercialise the farm business, were the main drivers for positive attitudes towards collaboration. The intention to cooperate was further supported by a feeling of confidence in having the necessary skills and resources required to join an organisation. However, although a negative connotation of producer organisations showed negatively in the attitudes, this feeling was not widespread. Our qualitative interviews showed that the state-led cooperatives from communist times were hardly associated with negative memories. Instead, and probably more relevant, institutional trust was at a low level. Producer organisations that were established by various donors in a top-down manner were looked at with some suspicion due to pertinent experiences with nepotism and elite capture in more recent years. In line with these qualitative observations, we could show that trust played an important role in forming the intention to collaborate in our model.

With regard to policy making, the widespread lack of information about existing producer organisations and their potential benefits and membership requirements could be easily addressed and should help to increase cooperation in the country. Transparent and democratic structures within the groups should be promoted to attract new members who have doubts in the functioning of institutions if not based on personal relations. Imami et al. (2021) stress that once agricultural producer groups come into existence, they may generate new social capital and kick off a self-enforcing system of trust building. At the same time, some top-down elements seem necessary to start a producer organisation among smallholders. Not only are farmers very open to following the recommendation of farm advisory services, they also most likely depend on professional support to initiate and form producer organisations (none of the producer organisations working in the Kosovar raspberry sector are bottom-up initiatives). Continued vertical integration of small-scale farmers into the value chain may further support the establishment of agricultural producer groups pushed by interests of agribusinesses located at the upper part of the chain (Imami et al., 2021). External agents may hence be seen as vital catalysts in the beginning, but continuous external assistance may furthermore ensure the longer-term success of the groups as it is known that withdrawing support after the initial phase often leads to sustainability problems. In particular, because farmers are inexperienced in cooperative culture, it is important to accompany not only producer organisation board members, but to educate farmers in general (Zheng et al., 2012) and to empower members to take over leadership positions (Thorp et al., 2005). Finally, the study revealed that improved access to capital is an important incentive to join a producer organisation. However, such a service was not offered by the existing producer organisations and policy makers should pay attention to this gap.

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