

Review Article

Cite this article: Cardoso VA, Lourenzani AEBS, Caldas MM, Bernardo CHC, Bernardo R (2022). The benefits and barriers of geographical indications to producers: A review. *Renewable Agriculture and Food Systems* **37**, 707–719. <https://doi.org/10.1017/S174217052200031X>

Received: 11 February 2022
Revised: 3 August 2022
Accepted: 16 September 2022
First published online: 10 November 2022

Key words:

Development; food labels; indication of provenance; origin sign; producers; traditional specialty guaranteed

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The benefits and barriers of geographical indications to producers: A review

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Abstract

Consumers are increasingly demanding information regarding the characteristics of products, their place of origin and methods of production. A Geographical Indication (GI) can be understood as a way to meet these demands, as it protects the origin of the product, as well as its characteristics. In addition to contributing to territorial development, GI signs have the potential to add value to products and help producers to become more competitive. However, some authors argue that there are barriers that can prevent the benefits of GI from reaching producers. Therefore, this article aims to identify the barriers and benefits of GI for producers. To reach this end, a Systematic Literature Review was carried out. As a result, it was observed that among the main benefits offered by the GI are higher prices, access to markets and preservation of cultural identity. Regarding the challenges, it was highlighted the existence of inefficient institutions, organizational problems, power asymmetry and appropriation of value by the most powerful agents of the supply chain. To conclude, this paper shows that the difficulties and benefits of GI to producers are not absolute and vary from region to region. In this sense, further research on the impact of GI, especially in developing countries, is necessary. The results here presented may be used as a base for future research that search to identify the importance of GI for producers and may also contribute to the development of actions or public policies related to GI.

Introduction

Consumers have developed a curiosity about the origin, characteristics and methods of production of food products. In this sense, a Geographical Indication (GI) has the potential to respond to these demands by protecting and identifying the origin of a product and the characteristics of its production process. GI recognizes and protects tradition, biodiversity, local knowledge and the link between the product and its region of origin (Giesbrecht and Minas, 2019).

GI are linked to the concept of *terroir*, which has, as its main foundation, the idea that the special characteristics of a product are defined by its place of origin (Gade, 2004). These products are the result of the interaction between people and natural resources in a certain territory (Barham, 2003). Therefore, GI can be seen as a collective differentiation strategy that develops over time, guided by the habits and routines of consumers and producers, which provides the basis for establishing the reputation of a place (Fronzaglia *et al.*, 2019).

The control of production and its commercialization is ensured by GI so that they remain in the region, and yet, at the same time, it allows local agents to access other markets outside the geographical delimitation. Hence, they provide means for local producers to make use of globalization to conserve their culture and environmental resources (Bowen, 2012). Thus, GI can help in the development of the region. Although there are very few available economic data on the economic effects of GIs, as shown by Török and Moir (2018) and Török *et al.* (2020), their potential to benefit the economy cannot be ignored. According to a study conducted by AND international (2021), GIs were responsible for €74.76 billion in 2017, what corresponds to around 7% of market share.

Although GI can offer benefits to local agents, some factors can make it difficult for producers to access the benefits provided by that sign, since the chances of GI of being a development instrument depends on how local actors use their intangible assets (Niederle, 2009; Cei *et al.*, 2018). The success of these distinctive signs also depends on factors linked to national legislation, the way GI is established, as well as the way agents in the production system interact with each other (Bowen, 2012).

In this sense, it is important to understand what benefits and barriers producers deal with to access a GI. Therefore, this article aims to identify the barriers and benefits of GI to

producers. Henceforth, a Systematic Literature Review (SLR) was carried out. In addition to describing the benefits and barriers of a GI to producers, this review also shows that they are not absolute and cannot be generalized to all GIs.

The current SLRs on GI

To better understand where this review is placed among the other previously published reviews, Chart one shows the authorship, title and the objective/contribution of literature reviews that are already published and that used a systematic methodology to analyze the scientific works, such as integrative reviews, meta-analysis and bibliometric analyses.

As shown in Table 1, many reviews focus on consumers' behavior and decision-making (Grunert and Aachmann, 2016; Leufkens, 2018; Glogovečan *et al.*, 2022), on economic issues like prices (Deselnicu *et al.*, 2013; Lis-Gutierrez *et al.*, 2017) and market size (Török and Moir, 2018; Török *et al.*, 2020) and on ways to map GI's products characteristics (Kamilari *et al.*, 2019; Cassago *et al.*, 2021). Although some reviews also address how GI can promote development and the benefits that this sign can offer (Cei *et al.*, 2018; Török *et al.*, 2020; Medeiros and Passador, 2021), this review innovates in focusing on a specific agent of the supply chain, which is the producer and what are the benefits and barriers that this agent might deal with while accessing a GI.

Methodology

A SLR brings more reliability and strictness to a literature review due to its systematic approach. Among the main benefits offered by a SLR are the methodological analysis and synthesis of quality literature, the firm theoretical foundation for a research topic, as well as a new contribution to an already existing body of knowledge (Levy and Ellis, 2006; Conforto *et al.*, 2011). A SLR was carried out as suggested by Levy and Ellis (2006) and Conforto *et al.* (2011). This review was conducted through several stages that are divided into three steps, as shown in Figure 1.

During the Input step, after defining the objective of this review, primary sources were consulted. According to Conforto *et al.* (2011), primary sources are papers, journals or databases that must be consulted in order to generate familiarity with the subject under analysis and identify the main keywords used in the literature of a certain topic. In this sense, sources like Bruch (2008), Bowen and Valenzuela Zapata (2008), Niederle and Vitrolles (2010) and Vieira *et al.* (2019) were consulted due to its importance to the body of knowledge of GI, as well as because these works address the relationship of GI with producers in different contexts. After that, the search string was defined according to the main keywords identified in the primary sources. The string is shown in Figure 2. The words that form the string were used to perform the initial searches in the title, abstract or keywords of the documents from Scopus and Web of Science.

Only articles that were published from 2011 to 2021¹ were selected from the two databases. Also, the articles selected had to be written in English, Portuguese and Spanish. Based on primary sources, the journal areas in each database were also selected. In Web of Science, the selected areas were agriculture; food science technology; business economics; environmental

sciences ecology; geography; government law; science technology; development studies; sociology; plant sciences; engineering; social issues; veterinary sciences and also a category called 'other topics'. In the Scopus database, the selected areas were agricultural and biological sciences; social sciences; environmental science; economics, econometrics and finance; business, management and accounting; engineering; energy; earth and planetary sciences; veterinary; arts and humanities and decision sciences.

The inclusion and exclusion criteria of this review are presented in Table 1. Only articles that address in some way the relationship between producers and GI, as well as the possible impacts of these labels on producers, were selected for this review. Therefore, articles that discuss different topics related to GI were excluded, like the ones that describe GI production process or region, GI consumers' behavior, or that analyze the chemical characteristics of GI products. Regarding the methods and tools, the StArt software version 3.0.3. was used for managing and selecting articles' information downloaded from the databases, the Mendeley software for managing references and Microsoft Excel for organizing results.

Figure 3 shows the number of articles that remained after finishing the Processing step of this review. It is important to note that, during the complete reading of the articles, a cross-search was performed, in which the cited articles that are aligned with the inclusion and exclusion criteria and could contribute to the SLR were also added to the synthesis.

At the end of the Processing step, 46 articles remained for the synthesis phase. During the Output step, the main information gathered from the articles was registered and summarized using Excel software. A content analysis was conducted at this stage according to the model suggested by Bardin (2016), to identify the main barriers and benefits of GI to producers. After that, a Theoretical Framework that shows the relationships between the benefits and barriers was developed.

Results

Data description

Of the articles analyzed in this SLR, 48% were carried out through case studies, and 17% were literature reviews. Most of the articles (78%) did not take a theory as a basis to conduct the analysis. Those that did adopt theories like Game Theory, Resource-Based View, Transaction Cost Economics, New Institutional Economics and Convention Theory. Table 2 presents the main information of the selected articles.

The results suggest that there is a trend of growth in publications that address the benefits and/or difficulties of GI to producers over the years, considering that most of the selected articles were published in 2020. Of the total number of countries covered in the articles, 43% are part of the European Union, and only 11% focused on Latin America and the Caribbean, which highlights the need for GI research in other regions (Table 3).

Benefits of GI to producers

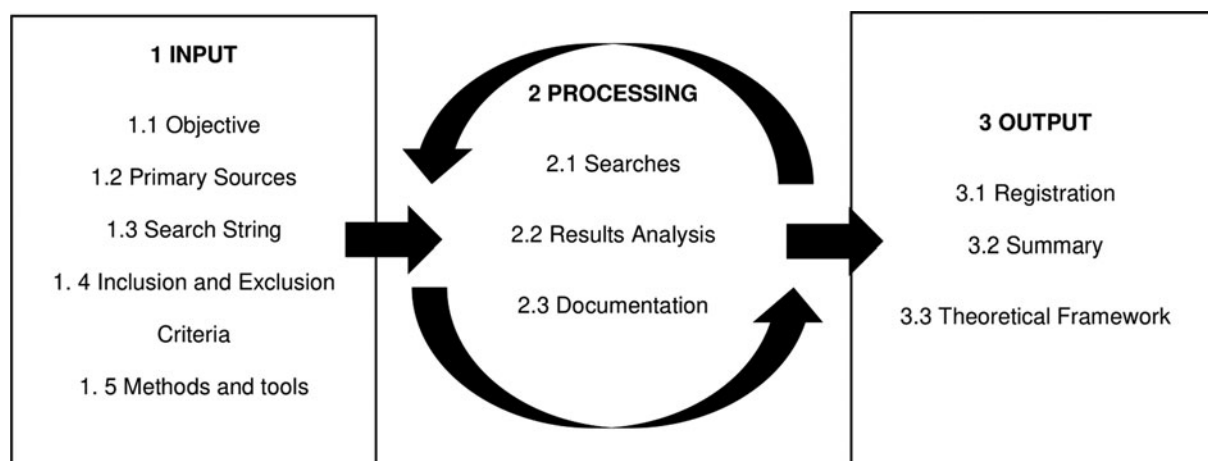
GI can increase the visibility of products and promote higher returns on the investments made by the producers. Given this possibility, producers have incentives to improve their production. Therefore, GI products tend to have *higher quality* than products from individual signs (López-Bayón *et al.*, 2020). Participating in a GI is seen as a way to increase quality and add value to

¹The searches were performed on April 8th of 2021.

Table 1. Summary of SLRs on GI

Author	Title	Objective/contribution
Deselnicu <i>et al.</i> (2013)	A meta-analysis of geographical indication food valuation studies: what drives the premium for origin-based labels?	The review analyses empirical literature in order to establish and understand the connection between GI premium, institutions, product and market characteristics.
Glogoveţan <i>et al.</i> (2022)	Consumer perception and understanding of European Union quality schemes: a systematic literature review	The paper summarizes the current knowledge about consumers' perception, willingness to pay, as well as buying behavior of food products certified with PDO, PGI and TSG.
Grunert and Aachmann (2016)	Consumer reactions to the use of EU quality labels on food products: a review of the literature	The paper presents how the PDO, PGI and TSG schemes affects the consumer decision-making process
Medeiros, and Passador (2021)	Examining the development attributed to geographical indications	The review describes the positive and negative impacts that a GI can generate to development, as well as the necessary conditions to them.
Török <i>et al.</i> (2020)	Understanding the real-world impact of geographical indications: a critical review of the empirical economic literature	The articles focus on understanding the market size for GI products, and on how these products impact producers' income and regional development.
Török and Moir (2018)	The market size for GI products: evidence from empirical economic literature	The review focus on estimating the size of the market of GI products.
Cei <i>et al.</i> (2018)	From Geographical Indications to rural development: a review of the economic effects of European Union Policy	The article reviews evidences from the literature on how the European GIs impacted the performance of local actors and their territories. By doing so, the authors discuss if this policy has helped to improve producers' income and foster rural development.
Kamilari <i>et al.</i> (2019)	High throughput sequencing technologies as a New Toolbox for deep analysis, characterization and potentially authentication of Protection Designation of Origin Cheeses?	The review focuses on the application of High Throughput Sequencing (HTS) technologies as a tool for establishing of the authenticity of PDO cheeses.
Medeiros <i>et al.</i> (2016)	Implications of geographical indications: a comprehensive review of papers listed in CAPES' journal database	The paper analyzes the functions and impacts attributed to GI discussed in papers published in the CAPES Journal Portal
Cassago <i>et al.</i> (2021)	Metabolomics as a marketing tool for geographical indication products: a literature review	The paper aims to indicate the contributions and opportunities that plant metabolomic studies can bring to GI issues.
Dias and Mendes (2018)	Protected Designation of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Specialty Guaranteed (TSG): a bibliometric analysis	The paper presents a bibliometric analysis of the PDO, PGI and TSG, schemes in order to understand the of the academic research in the field.
Leufkens (2018)	The problem of heterogeneity between protected geographical indications: a meta-analysis	The paper quantifies and evaluates the marginal consumer willingness to pay for a product by a GI
Deselnicu (2012)	The value and role of food labels: three essays examining information flows in the food system for experience and credence attributes	Based on an empirical literature, the paper identifies which product categories have higher premia

Source: Prepared by the authors.

**Fig. 1.** Steps of the SLR.

Source: Adapted from Levy and Ellis (2006) and Conforto *et al.* (2011).

("protected designation of origin" OR "protected geographical indication" OR "geographical indication*" OR "traditional specialty guaranteed" OR "Indication of provenance" OR "denomination of origin") AND ("farm*" OR "agricult*" OR "producer*") AND (("difficult*" OR "adversit*" OR "challeng*" OR "barrier*" OR "problem*") OR ("opportunit*" OR "benefit*" OR "advantag*" OR "incentiv*"))

Fig. 2. String search adopted for the SLR.
Source: Prepared by the authors.

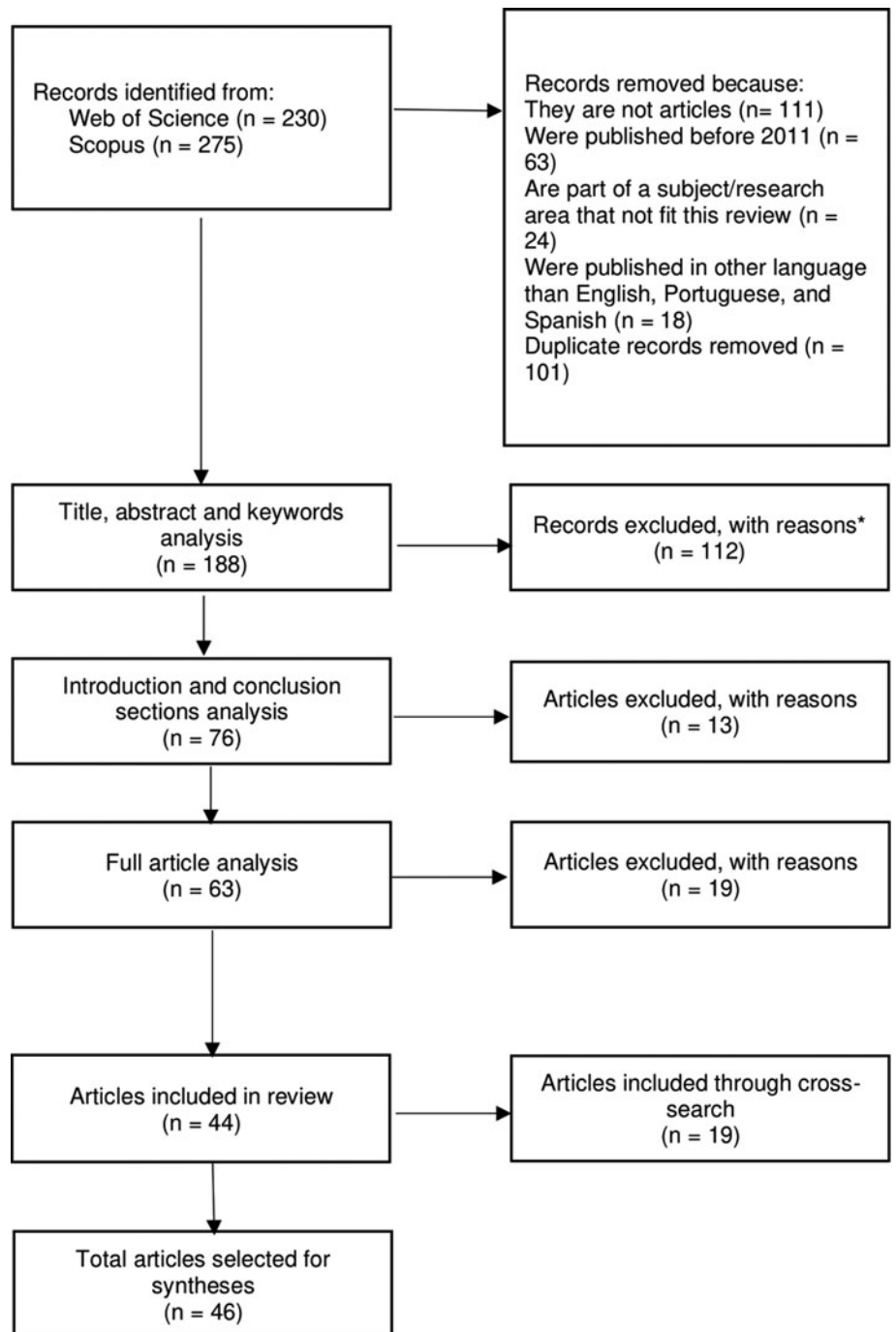


Fig. 3. Results of the processing step.
The inclusion and exclusion criteria were used to select or exclude the articles during this step.
Source: Prepared by the authors.

production, thus creating a competitive advantage by offering a product that has unique characteristics that come from its place of origin (Dentoni *et al.*, 2012; Lamarque and Lambin, 2015; Mcmorran *et al.*, 2015; Egelyng *et al.*, 2017; Rahmah, 2017).

The incentive to increase the quality of production after getting the GI is shown in several articles (Quiñones-Ruiz *et al.*, 2016; Hoang *et al.*, 2020; Ingram *et al.*, 2020; López-Bayón *et al.*, 2020). GI also helps to improve products' image and

Table 2. Inclusion and exclusion criteria adopted in the study

Exclusion Criteria	Inclusion criteria
✓ The article is not about GI	✓ The article talks about GI and producers;
✓ The article is not about producers;	✓ It deals with benefits that favor the participation of producers in GI;
✓ It only describes a GI product/production process, without addressing its benefits or barriers;	✓ It deals with barriers that hinder the participation of producers in GI;
✓ The GI is only the place where the research was carried out, not the object of it	

Source: Prepared by the authors.

marketing communication (Bryła, 2018; Chalupová *et al.*, 2021). However, it should be noted that most of these studies were conducted in European countries. Problems related to product quality due to inefficient institutions were identified by Bowen (2012) in her research conducted about Tequila in Mexico, and by Zhao *et al.* (2014), in their analysis of a GI in China, and by Neilson *et al.* (2018) in a coffee GI in Indonesia.

By offering higher quality products, producers can more easily access markets, which is one of the reasons to adopt GI (Mcmorran *et al.*, 2015; Egelyng *et al.*, 2017; Bryła, 2018; Blatnik and Bojnec, 2020; Oledinma and Roper, 2021). Traversac *et al.* (2011) highlighted, in their article that GI wines are highly valued in the final market, which allows higher prices and faster sales. For Ghosh (2016), GI can be adopted by smallholders to improve their competitiveness.

Furthermore, higher prices are constantly seen as one of the main benefits that producers can have access to by participating in a GI (Traversac *et al.*, 2011; Jena and Grote, 2012; Lamarque and Lambin, 2015; Mcmorran *et al.*, 2015; Mesić *et al.*, 2017; Bryła, 2018; Blakeney *et al.*, 2020; Ingram *et al.*, 2020). That is because consumers tend to be willing to pay more for a higher quality product (Ghosh, 2016; Quiñones-Ruiz *et al.*, 2016; Quiñones-Ruiz *et al.*, 2017; Hoang *et al.*, 2020; Mattas *et al.*, 2020).

However, the price of a GI product is not always an advantage (Nizam, 2017; Chalupová *et al.*, 2021). Zhao *et al.* (2014) found in their research in Australia that the lack of strict quality control and, consequently, the lack of quality guarantee led producers to not receive a higher revenue for their products. Pensado-Leglise and Sanz-Cañada (2018), in their research on beef from the Sierra de Guadarrama, Spain, demonstrated that even after two decades of GI establishment, this product does not receive a higher price due to the lack of recognition of its qualities and the lack of organizational capacity of the producers, which make negotiations with other agents in the supply chain difficult. Lower prices and difficulties by producers in accessing higher products value were also mentioned by Kizos and Vakoufari (2011) and Neilson *et al.* (2018), Nizam (2017).

Another benefit that is worth mentioning is the increased production, which was also cited in some articles as a benefit from the GI (Mcmorran *et al.*, 2015; Carbone, 2017; Ingram *et al.*, 2020). Mesić *et al.* (2017), verified in their article that, in the three years before the survey, 49% of producers of traditional products increased the volume of their production.

Because GI demand collective management to achieve success, they can coordinate different local actors, as well as strengthen the organizations present in the territory, which can lead to a bigger

supply of the product and more price control, thus contributing to rural development (Mcmorran *et al.*, 2015; Durand and Fournier, 2017). Therefore, GI can encourage collaboration among local actors.

Organization helps producers to achieve greater profits, reduce the power of intermediaries, protect them against counterfeiters and other opportunistic behaviors, and help them to promote their businesses (Bowen and De Master, 2011; Anson and Pavithran, 2013). Organization also increases the power of smallholders in the supply chain (Carbone, 2018). Also, when there is a producers' organization before the GI, it is easier to empower producers and build trust and social cohesion, common rules are more easily accepted, and producers tend to participate more in the GI after its register (Quiñones-Ruiz *et al.*, 2017).

Some authors also claim that access to knowledge is one of the benefits offered by GI. López-Bayón *et al.* (2020) found, in their research, that wine producers who were part of the GI offered a higher quality product than other producers. According to the authors, this is because by participating in the GI there is more sharing of knowledge among the agents in the supply chain. The transmission of knowledge about production and quality inside the GI context was also mentioned by Quiñones-Ruiz *et al.* (2016), Lamarque and Lambin (2015), Ingram *et al.* (2020) and Oledinma and Roper (2021).

GI is also a way to reduce transaction costs and information asymmetry within the production chain, benefiting both producers and consumers (Jena and Grote, 2012; Ghosh, 2016; Mesić *et al.*, 2017; Cei *et al.*, 2018; Bashir, 2020; Van Caenegem and Nakano, 2020). Cei *et al.* (2018) highlight that when there is information asymmetry, some producers can take advantage of the territory's reputation to sell lower-quality products.

Since to participate in a GI producers undergo quality assessments, not many more checks are necessary, which leads to a reduction in costs. In addition, consumers have guarantees of the high quality of the product and that it was produced in a traditional way (Blatnik and Bojnec, 2020; Mattas *et al.*, 2020). Therefore, GI is a way for producers to increase consumer confidence in their products (Mesić *et al.*, 2017). They can promote improvements in the vertical coordination of the supply chain, through more efficient communication between the actors, as shown by Quiñones-Ruiz *et al.* (2016). However, it is worth noting that inappropriate communication and lack of cooperation between agents were mentioned in some articles as factors that hinder GI development (Menozzi, 2014; Ghosh, 2016), which demonstrates that this benefit is not present in all GI.

GI is capable to contribute to sustainable development (BE8) (Hoang *et al.* (2020). Neilson *et al.* (2018) explain that, in developing countries, GI can stimulate rural development and alleviate poverty. GI values the social and cultural characteristics of a territory, thus contributing to the development of the local agricultural activity (Rahmah, 2017). GI also contributes to the survival of rural communities that are dependent on agricultural activity, not only adding value to the incomes of producers but also fostering local industries and job generation (Van Caenegem and Nakano, 2020). In this sense, GI also help in the preservation of cultural identity.

The value created by a GI can lead to an improvement in the economic conditions of the region (Cei *et al.*, 2018). In addition, the production of traditional goods can foster other economic activities inside the territory, such as rural tourism (Ghosh, 2016; Quiñones-Ruiz *et al.*, 2016; Nizam, 2017; Rahmah, 2017; Cei *et al.*, 2018; Ingram *et al.*, 2020). However, it is worth noting that

Table 3. Articles selected for the SLR

No	Article	Authors (Year)	Journal	Country	Product
1	A mountain food label for Europe? The role of food labeling and certification in delivering sustainable development in European mountain regions	McMorran <i>et al.</i> (2015)	Journal of Alpine Research	Italy, France and Switzerland	Food from the mountains
2	Agricultural Innovation and the Protection of Traditional Rice Varieties: Kerala a Case Study	Blakeney <i>et al.</i> (2020)	Frontiers in Sustainable Food Systems	India	Rice
3	Analysis of the feasibility of geographical indication of the craft production of cook cheese in Sergipan area	Fraga <i>et al.</i> (2019)	GEINTEC Journal	Brazil	Cheese
4	Australian laws and regulations on regional branding on food and wine labels: part 2	Zito (2019)	Australian Intellectual Property Journal	Australia	–
5	Can geographical indications modernize Indonesian and Vietnamese agriculture? analyzing the role of national and local governments and producers' strategies	Durand and Fournier (2017)	World Development	Indonesia and Vietnam	Coffee, pepper, honey
6	Designing geographical indication institutions when stakeholders' incentives are not perfectly aligned	Di Fonzo and Russo (2015)	British Food Journal	–	–
7	Extra-virgin olive oil production sustainability in northern Italy: a preliminary study	Menzio (2014)	British Food Journal	Italy	Olive oil
8	Factors constraining building effective and fair geographical indications for coffee: insights from a Dominican case study	Galtier <i>et al.</i> (2013)	Development Policy Review	Dominican Republic	Coffee
9	Farm resources, transaction costs and forward integration in agriculture: Evidence from French wine producers	Traversac <i>et al.</i> (2011)	Food Policy	France	Wine
10	Food labels (quality, origin and sustainability): the experience of Czech producers	Chalupová <i>et al.</i> (2021)	Sustainability	Czech Republic	
11	Food quality schemes: the case of Slovenia	Blatnik and Bojnec (2020)	Quality – Access to Success	Slovenia	–
12	Food supply chains: coordination governance and other shaping forces	Carbone (2017)	Agricultural and Food Economics	–	–
13	Foods and places: comparing different supply chains	Carbone (2018)	Agriculture	–	–
14	From geographical indications to rural development: a review of the economic effects of European Union policy	Cei <i>et al.</i> (2018)	Sustainability	European Union	–
15	Geographical indications act in India and veracity: a producer perspective	Anson (2018)	Queen Mary Journal of Intellectual Property	India	–
16	Geographical indications and value capture in the Indonesia coffee sector	Neilson <i>et al.</i> (2018)	Journal of Rural Studies	Indonesia	Coffee
17	Geographical Indications in Brazilian food markets: quality conventions, institutionalization and path dependence.	Niederle and Gelain (2013)	Journal of Rural Social Sciences	Brazil	–

(Continued)

Table 3. (Continued.)

No	Article	Authors (Year)	Journal	Country	Product
18	Geographical indications in Latin America value chains: a 'branding from below' strategy or a mechanism excluding the poorest?	Mancini (2013)	Journal of Rural Studies	Nicaragua	Cheese
19	Las indicaciones geográficas, la globalización y el desarrollo territorial: el caso del tequila.	Bowen (2012)	Agroalimentaria	Mexico	Tequila
20	Geographical indications: a corner stone in poverty alleviation and empowerment in the Indian Himalayan region	Ghosh (2016)	National Academy Science Letters	India	—
21	Group heterogeneity and cooperation on the geographical indication regulation: the case of the 'Prosciutto di Parma' consortium	Dentoni <i>et al.</i> (2012)	Food Policy	Italy	Ham
22	Impact evaluation of traditional Basmati rice cultivation in Uttarakhand State of Northern India: what implications does it hold for geographical indications?	Jena and Grote (2012)	World Development	India	Rice
23	In search of agri-food quality for wine: is it enough to join a geographical indication?	Lopez-Bayon <i>et al.</i> (2020)	Agribusiness	Spain	Wine
24	Insights into the black box of collective efforts for the registration of Geographical Indications	Quinones-Ruiz <i>et al.</i> (2016)	Land Use Policy	Austria, Colombia, Italy	Beans, oil; pumpkin seed oil; coffee; pear
25	Intellectual property rights as branding services for exports value-adding: an analysis of Chile's 'Sello de Origen' programme	Bustamante (2019)	International Journal of Intellectual Property Management	Chile	—
26	Market-oriented sustainability of Sjenica sheep cheese	Filipović (2019)	Sustainability	Servia	Cheese
27	New rural livelihoods or museums of production? Quality food initiatives in practice	Bowen and De Master (2011)	Journal of Rural Studies	France, Poland	Cheese
28	Open conflict as differentiation strategy in geographical indications: the Bitto Rebels case	Rinallo and Pitardi (2019)	British Food Journal	Italy	Cheese
29	Origin products from African forests: A Kenyan pathway to prosperity and green inclusive growth?	Egelyng <i>et al.</i> (2017)	Forest Policy and Economics	Kenya	honey and wild silk
30	PDO olive oil products: a powerful tool for farmers and rural areas	Mattas <i>et al.</i> (2020)	Journal of International Food and Agribusiness Marketing	Europe	Olive oil
31	Place, food and agriculture: the use of geographical indications in olive oil production in western Turkey	Nizam (2017)	New Perspectives on Turkey	Turkey	Olive oil
32	Pokkali rice production under geographical indication protection: the attitude of farmers	Anson and Pavithran (2013)	Journal of Intellectual Property Rights	India	Rice
33	Protected geographical indications: institutional roles in food systems governance and rural development	Conneely and Mahon (2015)	Geoforum	Ireland	Lamb, salmon
34		Bashir (2020)		India	—

(Continued)

Table 3. (Continued.)

No	Article	Authors (Year)	Journal	Country	Product
	Protection of geographical indication products from different states of India		Journal of Intellectual Property Rights		
35	Standard trade marks, geographical indications and provenance branding in Australia: what we can learn from King Island	Van Caenegem and Nakano (2020)	Journal of World Intellectual Property	Australia	Beef; Lobster; cheese
36	The effectiveness of contemporary Geographical Indications (GI) schemes in enhancing the quality of Chinese agrifoods – Experiences from the field	Zhao <i>et al.</i> (2014)	Journal of Rural Studies	Australia	Orange; mandarin, green tea
37	The effectiveness of marked-based instruments to foster the conservation of extensive land use: the case of geographical indications in the French alps	Lamarque and Lambin (2015)	Land Use Policy	France	Cheese
38	The impact of geographical indications on sustainable rural development: a case study of the Vietnamese Cao Phong orange	Hoang <i>et al.</i> (2020)	Sustainability	Vietnam	Orange
39	The impact of geographical indications on the competitiveness of traditional agri-food products	Mesic <i>et al.</i> (2017)	Journal of Central European Agriculture	Croatia	Cheese, turkey, pepper, sausage
40	The impact of obtaining a European quality sign on origin food producers	Bryla (2018)	Quality Assurance and Safety of Crops & Foods	Italy, Spain, France, Portugal, Germany, Austria, Belgium, Poland, Greece, Slovenia and the United Kingdom	Fruits and vegetables, meat, dairy products, olive oil, confectionery, beekeeping, alcohol, fish and pasta
41	The protection of agricultural products under geographical indication: an alternative tool for agricultural development in Indonesia	Rahmah (2017)	Journal of Intellectual Property Rights	Indonesia	—
42	To label or not? Governing the costs and benefits of geographic indication of an African Forest Honey value chain	Ingram <i>et al.</i> (2020)	Frontiers in Forests and Global Chang	Cameroon	Honey
43	Tradition (re-)defined: farm v factory trade-offs in the definition of geographical indications, the case of Three Counties Cider	Oledinma and Roper (2021)	Journal of Rural Studies	United Kingdom	Sidra
44	Valorization of a local asset: the case of olive oil on Lesvos Island, Greece	Kizos and Vakoufaris (2011)	Food Policy	Greece	Olive oil
45	Valorización de una Indicación Geográfica Protegida. El caso de la carne de la Sierra de Guadarrama, España	Pensado-Leglise and Sanz-Canāda (2018)	Mexican Journal of Livestock Sciences	Spain	Beef
46	Why early collective action pays off: evidence from setting Protected Geographical Indications	Quinones-Ruiz <i>et al.</i> (2017)	Renewable Agriculture and Food Systems	Italy, Austria	Beans; pear

Note: the symbol “-” indicates that such information is not present in the article.

Source: Prepared by the authors.

a GI solely does not guarantee rural development. Other factors, such as coordination, institutional support, and the way local agents deal with other global and extra-local agents must be considered (Ceï *et al.*, 2018; Neilson *et al.*, 2018).

Barriers of GI to producers

Conformity costs can be a factor that hinders participation in a GI. Extremely strict rules end up by excluding some producers, especially the less efficient ones, who may prefer to sell their products in

the traditional market than to deal with high production costs (Niederle and Gelain, 2013; Di Fonzo and Russo, 2015; McMorran *et al.*, 2015; Mattas *et al.*, 2020; Oledinma and Roper, 2021). Cei *et al.* (2018) explain that costs may originate from the traditional nature of production, which is normally less intensive in the use of technology.

Furthermore, there are monetary expenses related to the establishment of the GI, the price of raw materials and of consulting and laboratory analysis to verify products' characteristics (Quiñones-Ruiz *et al.*, 2017; Ingram *et al.*, 2020). There are also costs related to participation fees and quality inspections (Blatnik and Bojnec, 2020). However, there may be cases in which costs does not necessarily increase and the production costs of products with and without GI are similar (Cei *et al.*, 2018).

Even though there is research showing that it is possible to increase the volume of production, producers may face *difficulties in matching supply and demand*. In the article by Menozzi (2014), olive oil producers indicate that, despite large processors showing interest in acquiring their products, the sale is not possible due to their production scale, which is only able to serve a niche market. Bowen and De Master (2011) have observed that demand greater than supply capacity motivated the review of production rules to increase the production volume.

To access a GI, it is necessary to meet certain requirements collectively, which means that producers must interact with each other (Ghosh, 2016). However, the lack of a representative organization or the existence of *organizational problems* is frequently seen as one of the challenges for GI' success (Bowen, 2012; Dentoni *et al.*, 2012; Mancini, 2013; Menozzi, 2014; Ghosh, 2016; Nizam, 2017; Quiñones-Ruiz *et al.*, 2017; Filipovic, 2019). Among the factors that can help to form these barriers are the lack of trust among producers, the high fragmentation and heterogeneity of agents in the territory, as well as the existence of opposing interests (Bowen, 2012; Dentoni *et al.*, 2012; Ghosh, 2016; Filipovic, 2019).

The heterogeneity of agents and their different perspectives can affect their level of cooperation and consequently, negatively influence the governance of the GI, especially concerning how restrictive the defined rules are, which, in the future, may affect the reputation of the region (Dentoni *et al.*, 2012). It is difficult for a GI to develop sustainably and equitably if producers do not have an adequate form of representation (Bowen, 2012).

There are also *difficulties in reaching consensus* among local agents. Agents may have contradictory ideas about the strategies that should be adopted by the GI, which affects the level of cooperation in the future, as well as the performance of the GI and its ability to generate benefits (Dentoni *et al.*, 2012; Nizam, 2017; López-Bayón *et al.*, 2020). The heterogeneity of the agents interested in the GI can increase the need for efforts in the registration process (Quiñones-Ruiz *et al.*, 2016). However, it is worth noting that conflicts between agents in the territory, when mediated, can result in a bigger circulation of local history, and generate differentiation, as shown by Rinallo and Pitardi (2019).

Appropriation of value and power asymmetry is another barrier frequently mentioned in the literature. Although being a differentiation strategy that leads to higher prices, some research show that it is possible that the economic benefits generated by the GI do not reach producers due to the appropriation of value by more powerful actors in the supply chain (Kizos and Vakoufari, 2011; Anson and Pavithran, 2013; Mancini, 2013; Anson, 2018).

According to Galtier *et al.* (2013), the asymmetry of power and access to information between different stakeholders, during the

establishment of a coffee GI in the Dominican Republic, led to the design of a flawed set of rules that had little emphasis on local production and excluded some producers. Mancini (2013), in turn, describes the case of a GI in Nicaragua, in which broad rules regarding quality left producers exposed to the appropriation of value by more powerful agents. Inadequate rules can lead to the production of *low-quality products* that can lead to *low prices*, since the consumer may not identify reasons to pay a premium price for the GI product.

However, it is possible that the institutional apparatus of the GI also leads to value appropriation. In Australia, GI is seen from the perspective of collective marks and powerful agents can register a geographic name, thus appropriating the value generated even without having a strong relationship with the region (Van Caenegem and Nakano, 2020). It is also worth noting that the larger the size of the GI, the greater the difficulty in establishing an appropriate form of governance, which can lead the geographic region to be under the control of powerful firms, and farmers who produce traditional products tend to be marginalized (Carbone, 2017; Rinallo and Pitardi, 2019).

Strict rules regarding traditional production methods can lead to *inhibition of innovation*, resulting in higher costs (Rinallo and Pitardi, 2019). Among the possible negative consequences of strategies such as the GI are the reduction of the diversity of available products and the establishment of static forms of production. Cultural preservation strategies are always involved in a tension between the continuity of traditional forms of production and change (Bowen and De Master, 2011). In this context, Niederle and Gelain (2013) emphasize the importance of GI remaining flexible, so that it can adapt to changes in the ecosystem.

Van Caenegem and Nakano (2020), in turn, argue that the idea that GI hinders innovation is a matter of perspective. One of the producers interviewed by the authors stated that the form of production employed by GI is environmentally sustainable, allowing life in the community to remain picturesque and peaceful, something that would not be allowed with a high level of industrialization.

Nevertheless, it is worth highlighting the research by Durand and Fournier (2017), in which the authors found that the GI are used in Vietnam and Indonesia to modernize local agriculture. In these countries, GI is used by the government to encourage producers to adopt innovative methods.

Lack of information is another recurrent problem mentioned in the literature. Many producers do not know what a GI is or do not correctly understand the way it works, as well as the benefits it can offer (Mancini, 2013; Mesić *et al.*, 2017; Bustamante, 2019; Fraga *et al.*, 2019; Bashir, 2020; Blakeney *et al.*, 2020; Oledinma and Roper, 2021). In addition to affecting the access of producers to the GI, lack of information also hinders the GI establishment process (Galtier *et al.*, 2013; Quiñones-Ruiz *et al.*, 2017; Blakeney *et al.*, 2020). There is also a lack of knowledge on the part of the consumers about GI (Conneely and Mahon, 2015; Lamarque and Lambin, 2015; Fraga *et al.*, 2019).

Carbone (2018) highlights that market failures and lack of information have a significant impact on the success of a product that has its special qualities derived from its place of origin. From the consumers' perspective, reliable information about the origin of goods is essential when making a purchase decision. On the supply side, this information provides the basis for competition among producers (Carbone, 2018). Disseminating information about GI is important because, as demonstrated in Mesić *et al.* (2017), those producers who have more information about the sign tend to have positive expectations about the GI. They also

demonstrate a greater willingness to start the GI process and produce following its rules.

The *inefficient institutions* that regulate the GI are also repeatedly pointed out as a problem for producers. In Australia, for example, the trademark law, which is responsible for the GI in the country, is not able to protect and precisely regulate the connection between the product and its territory. As a result, producers feel unmotivated to invest in the sign (Zito, 2019; Van Caenegem and Nakano, 2020). In India, Anson (2018) identified conceptual problems in GI laws, which treat intermediaries as producers, which makes room for the commercialization of low-quality products with the GI label and appropriation of value.

Some articles demonstrate that the GI's rules hinder the ability of producers to modernize and adapt to new markets (Bowen and De Master, 2011; Galtier *et al.*, 2013; Mancini, 2013; Niederle and Gelain, 2013; Durand and Fournier, 2017). The attempt to create rules that are too broad to favor the interests of all agents, or the most powerful agents can lead to weak institutions that fail to protect the product's connection with the *terroir*, in addition to making it difficult for producers to access the value created in the territory (Bowen, 2012; Mancini, 2013; Neilson *et al.*, 2018; Oledinma and Roper, 2021). Problems related to the institutional environment and GI's rule were also mentioned by Conneely and Mahon (2015), Zhao *et al.*, (2014), and Hoang *et al.* (2020).

In addition to the problems already mentioned, some articles pointed to the *lack of incentives and support* as one of the difficulties of the GI. Conneely and Mahon (2015) interviewed lamb producers in Ireland and identified the lack of support during the GI establishment process. Nizam (2017), in an article on the positioning of olive oil producers with GI in the global market, found that a considerable part of the producers claims that there is a lack of public support for marketing. The lack of governmental support is not only mentioned by Nizam (2017), but also by Pensado-Leglise and Sanz-Cañad (2018) and Chalupová *et al.* (2021). Among the problems mentioned in the literature related to the lack of support, are the lack of financial and informational support (Filipovic, 2019; Chalupová *et al.*, 2021).

Bureaucracy is an issue that can hinder the process of GI, as well as the participation of producers, burdening the processes and demanding too much time from agents in the territory (McMorran *et al.*, 2015; Bustamante, 2019; Zito, 2019). However, Quiñones-Ruiz *et al.* (2016) highlight the importance of the process of getting a GI to not be a bureaucratic process, but a form of collaborative learning, in which interested agents can increase their knowledge about the product characteristics and develop strategies to use these qualities.

Although GI aims to offer protection against *free-riders* and against the sale of counterfeits and, therefore, it can guarantee the authenticity and traceability of products (Mesić *et al.*, 2017; López-Bayón *et al.*, 2020; Oledinma and Roper, 2021), some articles show that some producers take advantage of the established reputation in the territory to sell lower quality products at higher prices. Zito (2019), for example, explains that, due to some problems in the Australian legislation, regional names are used in products that have no connection with the territory. Problems in dealing with free riders related to legislation and policies were also identified by Traversac *et al.* (2011) in a wine GI in France, and by Oledinma and Roper (2021) in a cider GI from the United Kingdom. The sale of counterfeit products can lead to income losses for GI producers (Bashir, 2020).

The greater the area of protection under a GI, and the greater the number of producers, the greater the difficulties are in

agreeing on the form of governance, as well as in avoiding conflicts and offering protection against opportunistic behavior, which can reduce trust and the advantages offered by a GI (Carbone, 2017; López-Bayón *et al.*, 2020). When the geographical limits of a GI are expanded, producers who did not contribute to the development of the GI and who offer inferior quality products start to enjoy the benefits of the territory's reputation (Rinallo and Pitardi, 2019).

Discussion and implications for future research

Figure 4 shows a theoretical framework that summarizes the main benefits and difficulties of GI to producers, as well as the relationship between these variables.

GI can lead to higher quality products, which allows access to higher-priced markets. This is because GI is seen as a differentiation strategy (Fronzaglia *et al.*, 2019). Consumers are willing to pay a higher value for a GI product when they recognize its special characteristics (Ghosh, 2016; Quiñones-Ruiz *et al.*, 2016; Quiñones-Ruiz *et al.*, 2017; Hoang *et al.*, 2020; Mattas *et al.*, 2020). Another issue related to quality is the preservation of cultural identity, which also influences the consumer perception of the product since it identifies its place of origin. This leads to the reduction of information asymmetry, which is better transmitted throughout the entire supply chain.

GI are strategies of collective nature, and the organization of producers is essential for their success (Bowen, 2012; Ghosh, 2016; Gal and Jambor, 2020). Therefore, they are an incentive for producers to organize themselves, which can bring benefits, such as more access to knowledge, as well as a bigger production scale, which facilitates market access (Tierling and Schmidt, 2016). More knowledge leads to better product quality (Lamarque and Lambin, 2015; López-Bayón *et al.*, 2020). Due to all the benefits GI can offer, they are seen as a tool to foster development (Rahmah, 2017; Neilson *et al.*, 2018).

However, it is worth noting that there are barriers related to the GI that can hinder the development. Certain benefits of the GI can lead to some of these challenges. When trying to preserve cultural identity, for example, it is possible that static rules are established in a way that impedes modernization (Bowen and De Master, 2011; Niederle and Gelain, 2013; Rinallo and Pitardi, 2019). The high quality of traditional production, on the other hand, can lead to higher costs (Cei *et al.*, 2018).

Inefficient institutions are also a challenge that producers may have to deal with. There are, for example, rules that allow the production of low-quality products (Bowen, 2012; Mancini, 2013) which, in turn, result in lower prices, as consumers do not recognize the product's value (Zhao *et al.*, 2014). Institutions may also not provide sufficient protection against free riders, as well as make room for the appropriation of value by more powerful agents (Traversac *et al.*, 2011; Anson, 2018; Zito, 2019). Appropriation of value also results in lower revenues for producers (Kizos and Vakoufari, 2011).

The difficulty in reaching consensus among agents can lead, among other problems, to organizational difficulties (Dentoni *et al.*, 2012; Nizam, 2017), which hinder access to the benefits that a producer's organization can offer, such as access to more information (Tierling and Schmidt, 2016). Organizational problems can also allow the appropriation of value by more powerful agents since there is no protection against opportunistic behavior that an organization, as pointed out by Bowen and De Master (2011), can provide.

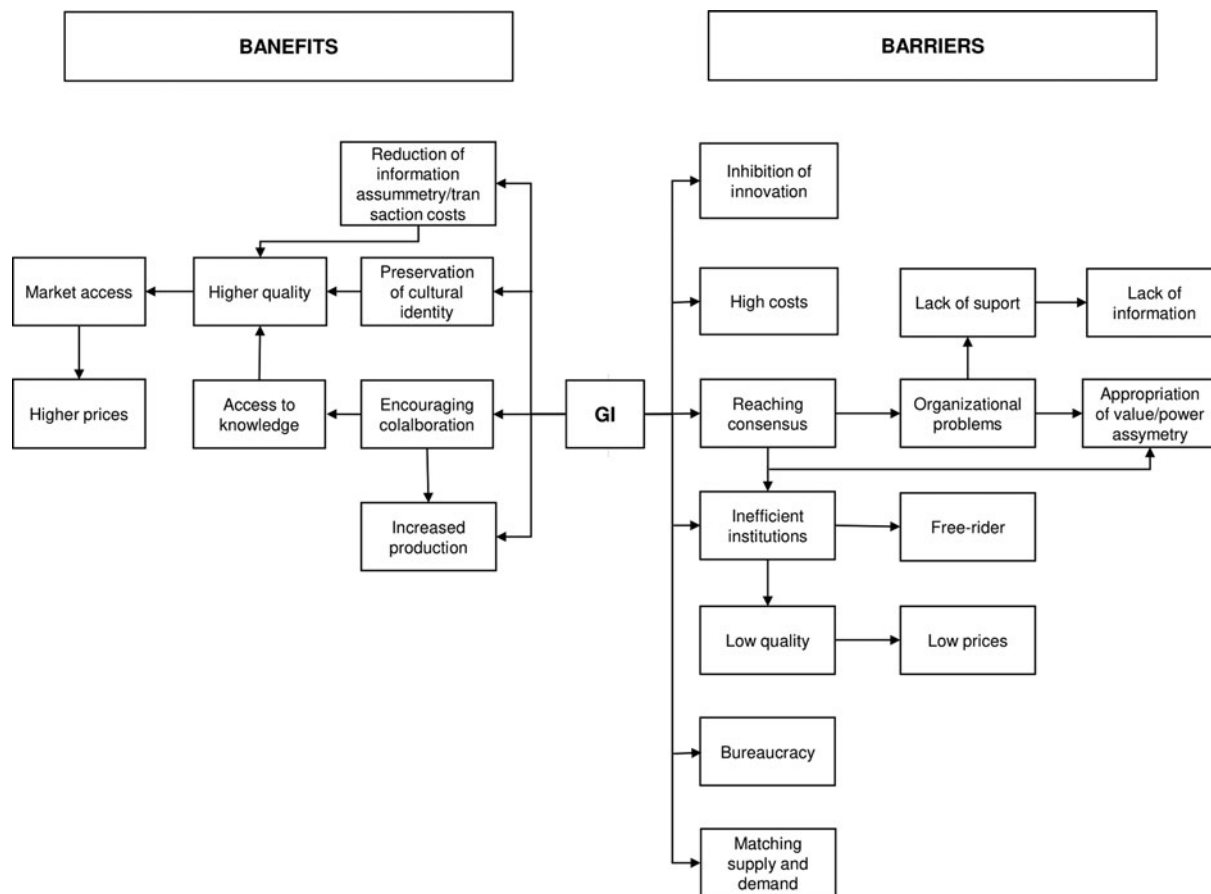


Fig. 4. Relation between the main benefits and barriers of IM for producers. Note: elements indicated by ‘+’ are seen as benefits, while those indicated by ‘-’ are understood as difficulties. Source: Prepared by the authors.

The lack of information can have its origin in organizational problems and the lack of support. According to Mesić *et al.* (2017), to reduce information problems, besides providing informational and financial support for producers, local authorities must inform them about the benefits of a GI. In addition, difficulties in matching supply and demand, as well as a large amount of bureaucracy, were also identified as GI challenges for producers.

Considering the findings of this review, it is possible to conclude that the benefits that a GI can offer are not absolute, and their effectiveness may vary. Issues such as higher prices and quality, for example, are not present in all GI and vary from region to region. Therefore, it is necessary to be careful and not draw general conclusions about the impacts of these signs based only on specific realities, as previously pointed out by Van Caenegem and Nakano (2020). Thus, the existence of a GI alone does not guarantee rural development.

Hence, this review corroborates the idea of Bowen (2012), that GI must be adapted to the resources, objectives and contexts of each case. GI in Europe have a long history, but they are still a recent phenomenon in developing countries, and more research is needed in these regions, as the impacts of the geographic sign can vary from place to place (Jena and Grote, 2012; López-Bayón *et al.*, 2020). It is important to highlight that, in developing countries, as explained by Bowen (2012), GI faces a specific set of challenges, such as the lack of adequate legislation to regulate and incentivize them, and little tradition of collective

actions. These characteristics can lead to a set of obstacles capable of hindering producers’ access to the potential benefits of a GI.

It is worth noting that articles available in databases other than those analyzed here may have addressed difficulties and barriers of GI that were not discussed. Despite this limitation, this review still has the potential to contribute to future research on GI and to the development of policies and strategies that aims to support producers during and after the registry of a GI, since it summarizes the main benefits and barriers of this label to producers. It also offers some paths for future research based on gaps identified in the literature.

Firstly, most of the articles are about GI of the European Union. Therefore, more research about the benefits and barriers to producers is needed in other locations, especially in developing countries. Secondly, it is necessary that studies consider the socio-cultural characteristics of producers and how they influence their access to the benefits of GI. Such issues were not addressed in depth in the articles selected for review. Studies about family farming and GI can help fill this gap.

Finally, most of the articles selected are case studies. Although this method can offer a lot of contributions to the literature, it has also the limitation that its results usually cannot be generalized. In this sense, it is important future research uses different methodological approaches that analyze a broader context and that allows identifying how these benefits and barriers behave in different scenarios.

Acknowledgements. This work was supported by the São Paulo Research Foundation (FAPESP) [grant number 2019/24420-5], the National Council for Scientific and Technological Development [grant number 426189/2018-3] and the Coordination for the Improvement of Higher Education Personnel CAPES/DS [grant number 88881.593696/2020-01].

Conflict of interest. The authors declare none.

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