

# Application of an Assessment Model for Potential Products with recognised Indication of Origin in the Production Chain of Wooden Truck Bodies in Itabaiana, Brazil

Adeilson Freire dos Santos, Maria Emília Camargo

PPGPI - Postgraduate program in intellectual property Science, UFS – Federal University of Sergipe, São Cristóvão/SE, Brazil

**Abstract**— The present article is aimed at showing the result of applying a model developed for assessing potential products with recognised indication of origin (*Indicação de Procedência – IP*, in Portuguese) registrations in Brazil. This model was applied on the production chain of wooden truck bodies in the municipality of Itabaiana, in the Brazilian State of Sergipe. This model is based on Bibliographic, Documentary and Delphi research methods. Its application consists of 3 (three) steps: 1 – Product Characterisation (CP), 2 – Preliminary Investigation with specialists (IPE) and 3 – Definitive Documentary Research (IDD). The product studied exhibited a historical, cultural and economic connection with the producing region, besides an 8.3 average degree of agreement, measured using the phrase completion scale proposed in the model, based on the opinion of specialists; thus, confirming the medium-to-high potential for applying for the IP registration through the competent body in Brazil.

**Keywords**— indication of origin, potential products, truck body, Itabaiana, assessment.

## I. INTRODUCTION

An indication of origin (*Indicação de Procedência – IP*, in Portuguese) is defined in the Brazilian Industrial Property Law (*Lei de Propriedade Industrial – LPI*, in Portuguese), in article 177, as a type of geographical indication (GI) showing the geographical name of a country, city, region or location of its territory which has become known as the centre for extraction, production or provision of a specific service [1]. The Brazilian government currently recognises and establishes the growing importance of such GIs, either with an indication of origin (IP) or a denomination of origin (DO), to the country's economy through Normative Instruction (IN) 95/2018 from the National Institute of Industrial Property (INPI). Therefore, the search for potential products to be granted these labels is of paramount importance to the regional development in Brazil.

In Brazil, more IPs are usually granted when compared to DOs, as the registration process of the latter is more complex, requiring more thorough technical studies. The greater flexibility of the registration process of IPs is seen as a great opportunity for rapid expansion, with more special attention needed for this type of GI.

When mapping potential products to be granted indications of origin, a historical-cultural survey is carried

out to identify information and corroborating elements of the region's notoriety as a producer or service provider. This survey serves as a form of recognition of a local reputation or a relationship between the product and its origin. Thus, it is strictly important to search for concrete evidences of this recognition, in order to effectively follow the application for recognition through the competent entities [2].

In this context, the present work investigated the potential for IP labels of wooden truck bodies produced in the city of Itabaiana, in the Brazilian State of Sergipe. According to the Brazilian Institute of Geography and Statistics (IBGE), this municipality is located in the central Agreste region of the State of Sergipe, with an area of 337,295 km<sup>2</sup>, and a population of approximately 95,196 inhabitants and a GDP (Gross Domestic Product) *per capita* of R\$ 15,449.45 [3].

The city is notorious for the high number of existing trucks, approximately 3,293; a figure only overtaken by the capital city of Sergipe, Aracaju, which has 5,941 trucks registered. Approximately 16% of the fleet of the State of Sergipe, which consists of 75 municipalities, is registered in Itabaiana [3].

The research was carried out by applying model for assessing products with a recognised IP, based on Bibliographic, Documentary and Delphi researches.

## II. METHODOLOGY

The method used for assessing the potential of the product wooden truck body with a recognised IP adopts the following basic concepts: **Product Grant, Legal and Institutional Requirements, and Proof of Indication of Origin**, as shown in Fig. 1.

Fig 1. Basic concepts for the IP model and background literature.

Basic Concepts	General Definition	Background Literature
<b>Attributes</b>	General characteristics of products that justify the assessment.	Cerdan [4], Dullius [5], Ma et al [6], Zheng et al [7].
<b>Legal and Institutional Requirements</b>	Aspects of the legislation applied to the IP and for institutional support, i.e., governments, companies or entities interested on IP registration.	Lei nº 9.279/96[1], IN 95/2018 [8], Valente [9], Silva et al [2].
<b>Proof of IP</b>	Collection of corroborating documents required for IP registration through the competent entity.	IN 95/2018 [8], Valente et al [9], Silva et al [2].

Source: Prepared by the authors (2018).

The procedures for collection/measuring highlight the basic concepts previously shown and operationalise the IP assessment model. The procedures are divided into 3 steps:

- 1 – Product Characterisation (CP),
- 2 - Preliminary Investigation with specialists (IPE) and
- 3 – Definitive Documentary Research (IDD).

Step 1 – **Product Characterisation (CP)** is related to the product's **Attributes**, with bibliographic and documentary researches being used to characterise the product. This step is aimed at getting the researcher in touch with what has already been produced and registered regarding the subject of research. Through these researches, it is possible to identify whether the product

presents a regional economic representativity, a target audience, sales and visibility that support moving to the following steps of the model.

Subsequently, Step 2 – **Preliminary Investigation with specialists (IE)** – consists in verifying, through experts' opinion, the **Legal and Institutional Requirements** associated to the product being assessed. This verification is carried out by applying the Delphi method, characterised as a method which seeks consensus among experts regarding future events. The Delphi survey method is based on the principle of collective judgment which, when well-structured, exhibits more accurate results than in an individual judgement. However, it is important to point out that three conditions are necessary to ensure the authenticity of the method: (a) the anonymity of the participants must be safeguarded in order to avoid previous biases and potential constraints as a result of change in opinion throughout the process; (b) regular feedback of the responses, so that experts can revise and strengthen their views, based on the group's opinion; and (c) statistical treatment of the data is also required, so that the team responsible may follow the development of the responses towards a consensus [10].

The criteria used to measure consensus is in the form of simple statistics. The relationship between the 1<sup>st</sup> and 3<sup>rd</sup> quartiles and the median or interval between alternatives is usually considered [10]. Consensus is reached if the distance between the 1<sup>st</sup> and 3<sup>rd</sup> quartiles and the median is below 25% of the maximum interval between alternatives [11]. Consensus can also be measured by the coefficient of variation. In this case, consensus is reached when this coefficient is lower than 30% [12].

The choice of experts to express their opinion regarding each product to be assessed is determined by the work experience criteria, which should be of at least 10 years.

In order to register the opinion of experts, the model has a questionnaire with a measuring scale, containing 10 questions, based on the literature and on the Brazilian legislation, as well as the **Legal and Institutional Requirements** for recognising an IP. The questionnaire is centred on 5 (five) categories based on the literature and on the IP legislation, namely: **Region with Recognised Product, Historical-cultural connection of the product with the region, Product description, Involvement of produces, State participation**. These categories have the same weighting coefficient, as they all gather the requirements for the concession of an IP. Each of these items is measured by the *phrase completion* scale, proposed by Hodge & Gillspie [13], which allows to

quantify the potential for an IP based on the opinion of experts. In this scale, the intensity of the items varies between 0 to 10, with 11 points. It is admitted that the mid-point is associated to a certain intensity which is not verified, for instance, in the *Likert scale*. In addition, point 0 allows the respondent not to give an opinion, if desired so. The tests carried out by Hodge & Gillspie [14] indicated that the scale is adequately consistent.

The model establishes at least 2 (two) application rounds, up to a maximum 3 (three) rounds, to the questionnaire, as described by the Delphi method [10].

At the end of the first round, the data collected are statistically treated using the SPSS Statistics software, Version 22.0, with the results being presented to the respondents before the second round. In addition, the median, quartiles or coefficients of variation are also defined in order to establish whether consensus has already been reached, according to the Delphi method. If necessary, the questionnaire can be changed according to the field research. Subsequently, the respondents take part in the second round, answering the questionnaire once again, until statistical consensus has been evidenced. The third round is only applied if statistical consensus is not reached in the second round.

The result of the second step of the assessment model considers the results of the coefficient of variation being within the parameters of statistical consensus established by the Delphi method, with the result of the potential of the product being recognised with an IP expressed by the average score of the responses from the experts. The classification of this potential to an IP is given according to Figure 1, which follows the principles of the phrase completion scale, developed by Hodge & Gillspie [8] that is: 0 (zero) corresponds to no potential; 5 (five) corresponds to average or below average potential. Values between 1 (one) and 4 (four) are considered below average. In turn, values between 6 (six) and 9 (nine) are seen as medium-to-high potential. The move towards Step 3 of the assessment model is only possible if the product exhibits a potential between medium to high. Fig. 2 presents the scale used for measuring the potential for an IP.

No Potential	Below Average	Average	Medium to high	Maximum
0	1	2	3	4
5	6	7	8	9
10				

Fig. 2. Scale for measuring the potential of a recognised IP.

Source: Adapted from Hodge & Gillspie (2003).

Finally, Step 3 consists of a **Definitive Documentary Research (IDD)**, which is associated to the basic concept of **Proof of IP**. In this step, the model recommends the

use of Bibliographic and Documentary researches to corroborate a possible registration request to the competent entity. This is performed with a historical-cultural survey, aimed at gathering elements, from a study on the facts, events and previous developments, for identifying the diversity of the region and to understand how its reputation was built. These elements can be collected from written sources, such as the following: statistic data, documents, management reports, association acts, technical works, specialised journals, novels, biographies, artworks, theses, dissertations and studies from historians, geographers, economists and agronomists. Oral records, also constitute these elements, namely interviews with local agents, such as residents, producers, wholesalers, previous and present municipal as well as regional authorities. Visits to the production sites also enable to understand the lifestyle in the region and to find images of typical regional products.

At the end of these steps the result is expressed as a product that has been assessed on IP recognition throughout all the spheres required to represent its potential for protection in Brazil.

### III. RESULTS AND DISCUSSION

Step 1 consists of the **Product Characterisation (CP)**, which was applied aimed at identifying the regional economic representativity and visibility that support the move towards the following steps of the assessment model. With this in mind, bibliographic and documentary data was collected from the libraries of the main Universities of the State of Sergipe, as well as from *Google Scholar* pages. This collection of data enabled to establish a relationship between the city of Itabaiana and the product wooden truck body.

According to Santana [15], this relationship is based on historical roots that exceed 60 years. Due to the truck activity in the region, Itabaiana relies on a local industry focused on the production of wooden truck bodies, as illustrated in Fig. 3, which also contributed to the city's recognition as the national truck capital [16].

In 2014, the Brazilian president sanctioned Law n. 13.044/14 from 19/11/2014, with art. 1 declaring the municipality of Itabaiana, in the State of Sergipe, as the national truck capital [11].

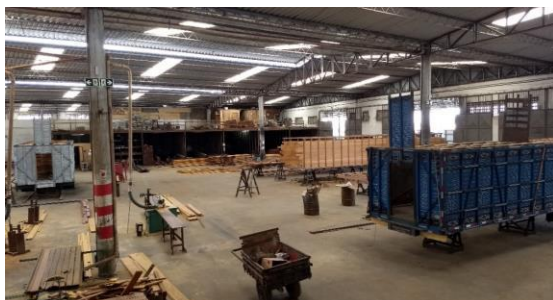


Fig. 3. Layout of a factory in the municipality of Itabaiana.

Source: Photographic record by the author during data collection, 2018.

According to Santana [15], the municipality has eleven factories from the wooden truck body sector, all with an operating licence. The authors state that the entrepreneurs hold a high degree of family relationship between them. It is also important to highlight that the former staff of the pioneering companies started their own businesses, given the experience acquired from the production process.

In a study carried out by Firmino [16], three large truck body factories were identified as giving a certain degree of importance to this segment in the region. The three companies combined employed 143 staff members, at the time of the research, with a monthly cost of R\$ 280,000.00 with feedstock, R\$ 169,000.00 with wages, with one of them reportedly spending R\$ 18,000.00 on taxes.

The feedstock used for manufacturing is wood, iron, screws and paint. These materials were purchased in the Brazilian states of Pará, Amapá, Espírito Santo and São Paulo. Finally, the product is sold throughout the Northeastern region of Brazil, as well as in other regions, such as in the North and Southeast, as shown in Fig. 4, when considering the example of one of the biggest factories in the region [16].



Fig 4. Destination states from the production of one of the truck body factories

Source: Adapted from Firmino, 2017.

The results of this data collection demonstrated the importance of the product to the region, considering the criterion established by the IP assessment model. From this result, Step 2 was performed.

In Step 2 – **Preliminary Investigation with Specialists (IPE)**, 5 employees that have worked in the wooden truck body production sector, in the municipality of Itabaiana, for at least 10 years were selected. This time of work takes into account their expertise, in order to contribute with their opinion regarding a future scenario for verifying the potential for IP recognition of the given product. The scenario presented was: “the region of Itabaiana obtaining the indication of origin registration for the product wooden truck body”.

These professionals shared their opinion by answering, in a first round, to 10 questions in the form of an intensity scale. Besides the responses to these questions, age, gender, time of work with the product and opinion regarding the structure and understanding of the questionnaire were collected.

As this step is based on the Delphi method, in order to ensure scientific validity, the anonymity of the respondents was safeguarded, having used the SPSS Statistics software, version 22.0, with the results being shown below. In addition, the feedback was given before the second round of questions was performed.

### Results from the First Round

Table 1 presents the characteristics of the respondents, focused on the average age of the respondents and their average time of work with the product. It can be observed that all the respondents had at least 10 years of work experience with the product, complying with the requirement of the model developed.

Table. 1: Characterisation of the respondents.

	Age	Time of Work	Gender
	56	25	Male
	42	33	Female
	42	10	Male
	46	32	Female
	29	10	Male
Average	43	22	

Source: Prepared by the author, based on data from SPSS Statistics, 2018.

Table 2 contains the overall results of the consensus between experts, the overall coefficient of variation (CV) of the study presented a value of 9.90%, being within the acceptable parameter considered in the literature, i.e., below 30%.

Table. 2: Consensus of round 1.



Average	Standard Deviation	Coefficient of variation
8.22	0.8136	9.90%

Source: Prepared by the author, based on data from SPSS Statistics, 2018.

Regarding the average measure of the responses of this step, considered the main indicator to measure the potential for IP, a value of 8.22 was obtained, characterised as a **medium-to-high potential** within the measuring scale.

Subsequently, the second round was performed, with the results from the first round being shown to the participants, who were asked to answer the questionnaire once again. Despite reaching a consensus in the first round, in order to ensure the validity of the Delphi method, the second round is mandatory. Accordingly, the participants received the responses from the group, having the opportunity to position themselves.

#### Results from the Second Round

The second round presented a better coefficient of variation, increasing consensus among the experts. The overall coefficient of variation, the measure of consensus, presented the value of 8.93%, while the average score of the responses increased to 8.3, according to Table 3.

Table 3: Consensus of round 2.

Average	Standard Deviation	Coefficient of variation
8.3	0.7416	8.93%

Source: Prepared by the authors, based on the data from SPSS Statistics, 2018.

The average score of 8.3 is considered the result and indicator for the potential of the product wooden truck body produced in the city of Itabaiana for IP recognition, in the opinion of the experts. This result confirms the **medium-to-high** potential of the product, according to the scale proposed in the IP assessment model.

Having obtained the result of medium-to-high, Step 3 was executed – the **Definitive Documentary Investigation (IDD)**, by gathering the elements capable of subsidising the request for IP registration, as a result of bibliographic and documentary researches in libraries of the city of Itabaiana and universities from the state of Sergipe, as well as visits to the production sites of the product studied. The evidences collected are described in publications, as shown in Fig. 5.

Publication	Author(s)	Origin	Approach	Year
Great Itabaiana and the Saga of the truck drivers (Itabaiana Grande e a Saga dos caminhoneiros, in Portuguese)	Carlos Mendonça	Itabaiana/Se	A book that tells the story of the city of Itabaiana and its connection with the truck, citing the factories of wooden truck bodies	2012
Itabaiana, our place: four centuries afterwards (Itabaiana, nosso lugar: quatro séculos depois, in Portuguese)	José de Almeida Bispo	Itabaiana/Se	A book that tells the story of the city of Itabaiana and its connection with the truck, citing the factories of wooden truck bodies	2013
Characterising the type of management in truck body factories in Itabaiana according to the Filion model (1999) (Caracterizando o tipo de gestão nas fábricas de carroceria de Itabaiana segundo o modelo de Filion (1999), in Portuguese)	Alan dos Santos Ferreira	Federal University of Sergipe	Characterises the type of management in factories of wooden truck bodies in the city of Itabaiana/Se	2013

Federal Law n. 13.044/14 from 19/11/2014	President of the Federative Republic of Brazil	Federal Government	Article 1 declares the municipality of Itabaiana, in the Brazilian State of Sergipe, as the national truck capital	2014
Characterisation of a Local Productive Arrangement: the case of the factories of wooden truck bodies in the city of Itabaiana (Caracterização de um arranjo produtivo Local: O caso das fábricas de carrocerias de madeira da cidade de Itabaiana/Se, in Portuguese)	Joanisson dos Reis Santana	Federal University of Sergipe	Outlines the activity profile of the city of Itabaiana, mapping the truck body factories, identifying the characteristics of the Local productive Arrangement	2014

Figure 5. Evidences of the relationship between the product and the city of Itabaiana/Se.

Source: prepared by the authors based on selected documents, 2018.

Following the application of all the steps of the model, it is possible to state that the product wooden truck bodies, produced in the Brazilian city of Itabaiana, presents a medium-to-high potential for applying to IP registration through the Brazilian competent body, the INPI, enabling the use of the sources described in Fig 5. as a to support this process.

#### IV. CONCLUSION

Geographical Indications (GI) have contributed to the development of the regions and for strengthening the

protection of intellectual properties worldwide. However, in Brazil, this label still lacks significant advances when compared to other countries, mainly in terms of support from public authorities.

The academy and research entities have striven to contribute to the growth of Geographical Indications in Brazil, seeking potential products around the country, and encouraging producers to include GIs.

An Indication of Origin (IP) represents an opportunity for rapid growth in Brazil, given the high number of popular products produced in certain regions, as well as due to the simpler and quicker registration process of this type of GI when compared to the registration process of the Denomination of Origin (DO), which requires more specific technical studies.

The product wooden truck body from the city of Itabaiana has shown evidences of its connection with the territory. Finally, the assessment model presented in this work demonstrates the possibility of replication with any other type of product to be studied.

#### REFERENCES

- [1] BRASIL (1996). Lei nº 9.279, de 14 de maio de 1996. Regula direitos e obrigações relativos à propriedade industrial. Brasília, 1996. Disponível em: [http://www.planalto.gov.br/ccivil\\_03/Leis/L9279.htm](http://www.planalto.gov.br/ccivil_03/Leis/L9279.htm), acessado em: 01/09/2018.
- [2] SILVA, A. L. da et al. Delimitação geográfica da área: homem, história e natureza. In: PIMENTEL, L. O. et al. (Org). Curso de propriedade intelectual & inovação no agronegócio: Módulo II, indicação geográfica. 4.ed. Brasília: MAPA, Florianópolis: FUNJAB, 2014. Cap.4, p.134-160.
- [3] INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). Informações sobre o município de Itabaiana. Disponível <https://cidades.ibge.gov.br/brasil/se/itabaiana/panorama>, acessado em 22/11/2018.
- [4] CERDAN, C. et al. Indicação geográfica de produtos agropecuários: importância histórica e atual. In: Pimentel, L. O. et al (Org). Curso de propriedade intelectual & inovação no agronegócio: Módulo II, indicação geográfica. 4 ed. Cap.1 p. 32-53. Brasília: MAPA, Florianópolis: FUNJAB, 2014
- [5] DULLIUS, P. R. Indicações Geográficas para o desenvolvimento territorial: as experiências do Rio Grande do Sul. 2009. Dissertação (Mestrado em Extensão Rural). Universidade Federal de Santa Maria. Santa Maria-RS, 2009. Disponível em: [http://w3.ufsm.br/ppgexr/images/Disserta%C3%A7%C3%A3o\\_Dullius.pdf](http://w3.ufsm.br/ppgexr/images/Disserta%C3%A7%C3%A3o_Dullius.pdf), Acesso em 15/10/2018.
- [6] MA, Y. et al. The Feasibility and Stability of Distinguishing the Kiwi Fruit Geographical Origin Based on Electronic Nose Analysis. Food Science and Technology Research, v. 20, n.6, p. 1173-1181. 2014.

- Disponível em:  
[https://www.jstage.jst.go.jp/article/fstr/20/6/20\\_1173/\\_article](https://www.jstage.jst.go.jp/article/fstr/20/6/20_1173/_article), acessado 18/10/2018.
- [7] ZHENG, Y. et al. Multicomposition analysis and pattern recognition of Chinese geographical indication product: vinegar. *European Food Research and Technology*. v. 238, p.337–344. 2014. Disponível em: <https://link.springer.com/article/10.1007/s00217-013-2135-2>, Acessado em 10/10/2018.
- [8] INSTITUTO NACIONAL DE PROPRIEDADE INDUSTRIAL (INPI). Instrução Normativa nº 95 de 28 de dezembro 2018. Estabelece as condições para o Registro das Indicações Geográficas. Disponível em: [http://www.inpi.gov.br/images/docs/instrucao\\_normativa\\_25\\_indicacoes\\_geograficas\[2\].pdf](http://www.inpi.gov.br/images/docs/instrucao_normativa_25_indicacoes_geograficas[2].pdf), acessado em 11/10/18.
- [9] VALENTE, M. E. R. et al. Indicação geográfica de alimentos e bebidas no Brasil e na União Europeia. *Ciência Rural*, Santa Maria, v.42, n.3, p.551-558, 2012. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0103-84782012000300027](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-84782012000300027), acessado em 10/11/2018.
- [10] WRIGHT, J. T. C. and GIOVINAZZO, R. A. Delphi – Uma ferramenta de apoio ao planejamento prospectivo. *Caderno de Pesquisas em Administração*, v.1, n.12, p. 54-65, 2000. Disponível em: <http://regeusp.com.br/arquivos/C12-art05.pdf>, Acessado em 09/09/2018.
- [11] CARDOSO, L. R. de A. et al. Prospecção de futuro e Método Delphi: uma aplicação para a cadeia produtiva da construção habitacional. *Ambiente Construído*, Porto Alegre, v. 5, n. 3, p. 63-78, jul./set. 2005. Disponível em: <http://www.seer.ufrgs.br/index.php/ambienteconstruido/article/view/3650/2008>> acessado em: 15/10/18.
- [12] KAYO, E. K.; SECURATO and J. R. Método Delphi: fundamentos, críticas e vieses. *Cadernos de Pesquisa em Administração*, v.1, n.4, p. 51 – 61, 1997.
- [13] HODGE, D. R.; GILLESPIE, D. F. Phrase completion: an alternative to Likert scales. *Social Work Research*, 27 (1), p. 45-55, 2003. Disponível em: [https://www.researchgate.net/publication/234692602\\_Phrase\\_Completions\\_An\\_Alternative\\_to\\_Likert\\_Scales](https://www.researchgate.net/publication/234692602_Phrase_Completions_An_Alternative_to_Likert_Scales), acessado 15/10/2018.
- [14] HODGE, D. R. and GILLESPIE, D. F. Phrase completion scales: a better measurement approach than Likert scales? *Journal of Social Service Research*, 33 (4), p. 1-12, 2007. Disponível em: <https://asu.pure.elsevier.com/en/publications/phrase-completion-scales-a-better-measurement-approach-than-likert>, acessado em: 16/10/2018.
- [15] SANTANA, J. R. et. al. Caracterização de um Arranjo Produtivo Local: o Caso das Fábricas de Carrocerias de Madeira da Cidade de Itabaiana-SE. In: EGEPE, XIII Encontro de estudos em empreendedorismo e gestão de pequenas empresas. Goiânia, GO. 2014. Disponível em <https://www.sigaa.ufs.br/sigaa/verProducao?idProducao=331347&key=f95902953da45e806c1f770c1a599e29>, acessado em 20/10/2018
- [16] FIRMINO, P. C. S. Arapiraca/AL e Itabaiana/SE: a feira livre como gênese e desenvolvimento de dois centros regionais do interior do Nordeste brasileiro. 2015. 316f. Dissertação (Mestrado). Universidade de São Paulo, São Paulo-SP, Brasil. 2015. Disponível em: <http://www.teses.usp.br/teses/disponiveis/8/8136/tde-23032016-133946/en.php>. Acessado em 14/10/2018.