



## Implications of GI on Indian Specialty Coffee – A Case Study on ‘Monsooned Malabar Arabica Coffee’

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Geographical Indication registrations are initiated keeping in mind various benefits out of it such as product differentiation, branding, price premium, increase in exports etc. There are more than 400 registered GIs in India among which 7 are specialty coffee varieties. The process of identification of unique specialty varieties of coffee and getting it registered with the Geographical Indication registry, Chennai is initiated by the Coffee Board of India. The present study aims at assessing the economic impact of first GI tagged coffee variety, ‘Monsooned Malabar Arabica Coffee’ by evaluating the exports. The study also analyses whether the GI tag was instrumental in increasing the income of the producers, the analysis is done by assessing the variation in price per metric ton of coffee being exported. The researchers also evaluate whether the GI registration has brought about temporal evolution to the coffee variant. The causal impact test results shows that this coffee variety with GI tag was able to increase its exports and earn a premium price after the GI tag registration. The results of temporal factor, that is increase in number of labourers in the plantation after the GI registration, even though it reveals a positive increase it is not attributable to the receipt of GI tag. The researchers conclude that the GI registration has brought about positive impact in the case of ‘Monsooned Malabar Arabica Coffee’.

**Keywords:** Geographical Indications, Arabica Coffee, Impact Assessment, WIPO

Coffee popularly called as ‘brown gold’ is the second largest traded commodity of the world second only to petroleum. It is one of the most popular beverages.<sup>1</sup> Among the cash crops grown in India coffee claims a prestigious position. According to the recent statistics as revealed by India Brand Equity Foundation (IBEF), India is the third largest producer of coffee among Asian countries and sixth largest producer and fifth largest exporter of coffee in the world.<sup>2</sup> Coffee production is an ideal blend of art and science. The cultivation of coffee in India is unique with eco-friendly human activity. Indian coffees with their distinct quality and unique aroma are appreciated worldwide.<sup>3</sup> Until recently coffee market was not having much product differentiation and all coffee were treated the same, now with change in product and process the coffee has wide range of differentiation.<sup>4</sup> In India the Coffee Board of India is the nodal agency for research and development which supports the coffee industry. It not only provides technical support relating to the coffee production, blending and roasting but also helps in promotion activities. One such promotion initiative from the

Coffee Board of India was to identify specialty coffees from specific geographical locations and to register those unique varieties of coffee with the Geographical Indications Registry of India, Chennai. Geographical indications are unique Intellectual Property Rights which are defined in the Article 22(1) of the TRIPS agreement. Geographical Indications are indications of the quality and uniqueness of a product which are attributable to its geographical origins or human skill sets of a particular region.<sup>5</sup> Geographical indications tags are used to convey important information relating to a product such as its name, place of origin and the unique qualities assumed by the product due to its geographical origin. Geographical indications tags are referred to as ‘sleeping beauty of IPRs’ due to the fact that these were in existence from time immemorial and got recognition and relevance only recently. Now the nations including developing ones are trying their best to protect their unique specialty products and produce with Geographical Indication tag.<sup>6</sup> So far, the Coffee board of India have identified and registered 7 unique varieties of coffee with the Geographical Indications registry, Chennai. According to World Intellectual Property Organisation (WIPO) Geographical

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Indication certification can be used as a marketing tool and is helpful in various activities such as signaling specific quality, increasing exports, premium price, product differentiation etc.<sup>7</sup> The present study aims to find out the impact of Geographical Indication Tag registration on the first GI tagged coffee variety of India, the 'Monsooned Malabar Arabica Coffee'.

### **Geographical Indications and Coffee**

The concept of recognizing products having unique qualities as a result of their geographical lineage with an IPR called Geographical Indications is a practice adopted by the European and other developed countries long back. The concept of GI became more popular and the developing countries became interested in adopting it only after WTO made it mandatory for its member countries to develop laws for protecting Geographical Indications.<sup>8</sup> Geographical indications tag can be registered for a wide range of products and produces like handicraft, handloom, agricultural produce, natural produce etc. Coffee is one of the beverages that are protected world – wide with the use of Geographical Registration. An irony seen when it comes to the producers and consumers of Coffee is that majority of the coffee producers are from developing countries and its major consumers belong to the developed ones.<sup>9</sup> This brings forth the fact that the consumers of coffee can be more informed about the concept of Geographical Indications tag than the producers of coffee who are from the developing countries. Hence the use of Geographical Indication tag as a strategic tool for product differentiation and quality assurance is very important and the coffee producers from the developing nations should be more vigilant and serious about exploring the possibility of using GI tag as a marketing tool. Different countries have given protection to specialty coffee varieties in different ways, countries like Columbia have given the coffee varieties GI protection by passing special laws (*sui generis*) while other countries like Kenya have given protection to specialized coffee under the Trademark Act.<sup>10</sup> Majority of the Geographical Indications registration in India are initiated by the State or public organisations, they as 'proprietors' grant the permission to use the GI tag to 'authorised users. When it comes to coffee it is the Coffee Board of India that has taken initiative for the identification of unique local blend of coffee and getting GI

registration for them. The Board has also made it a point to register a GI logo for easy identification of each GI tagged coffee. The GI registration is valid for a period of 10 years in India after which the registration needs to be renewed, here also the Board has regularly renewed the GI registration and protected it from unauthorized claims.

### **Monsooned Malabar Arabica Coffee**

Among the exotic range of coffee exported from India Monsooned Malabar Arabica Coffee claims a premium position. The reason for the premium position of this specialty coffee is that the coffee beans used for this blend is from best plantations of Kerala and Karnataka. The coffee received its magic flavour from a process known as 'monsooning'. This process took place at first by mere accident when the coffee beans from Karnataka and Kerala were exported to the European nations by sea. The South west monsoon of Kerala coast made the coffee beans 'swollen' during its travel to Europe and it turned yellow. The monsooned coffee beans turned out to be less acidic and gave it a musty flavour. This process is now recreated in special warehouses situated across the West coast of Southern India up to Kozhikode and the coffee beans stored here are exposed to moist monsooned winds which give it the unique taste, flavour and aroma.

A policy or a programme is implemented with a view to bring positive changes to its beneficiaries and bring about desired objectives.<sup>11</sup> Protection of produces/products having unique characteristics that are attributable to the specific geographical location through Geographical indication tag, a form of Intellectual Property Rights, were put forth by the Article 22 (1) of TRIPS agreement. India being one of the signatories of the TRIPS agreement implemented the Geographical Indications of Goods (Registration and Protection) Act 1999. India unlike various other countries have given protection to GI registration under Sui – genesis legislation which is capable of providing stronger legal protection. Important economic objectives of GI registration are promotion of exports of goods having Geographical Indications tag, premium pricing, increased income etc. This study is carried out to assess whether the Geographical Indication registration of specialty coffee – 'Monsooned Malabar Arabica Coffee' was capable of increasing the exports of the product. The study also analyses whether the GI tag was

instrumental in increasing the income of the producers, the analysis is done by assessing the variation in price per metric ton of coffee being exported. The researchers also evaluate whether the GI registration has brought about temporal evolution to the coffee variant, which is analysed by assessing the growth of number of persons employed in the plantation where the coffee variant under study is grown.

The impact assessment is done in two ways one is 'diachronic method' where the impact is assessed over a period of time and the second is the 'synchronic method' where the impact is assessed by comparing the product with close substitute that is being produced in the same production area.<sup>12</sup> In this study the impact of GI tag on specialty coffee 'Monsooned Malabar Arabica' is assessed using a combination of diachronic and synchronic methods. Diachronic method was adopted by measuring the impact of geographical indication tag on exports of monsooned Malabar arabica coffee both in terms of value (price per metric ton) and weight and also the number of labourers employed in the delimited area of Geographical Indication before and after the award of the GI tag. The synchronic method of impact measurement was done by comparing the GI tagged Monsooned Malabar Arabica Coffee with that of non-GI tagged specialty coffee Mysore Nuggets Extra Bold and Robusta Kaapi Royale. An impact analysis is done to ensure that the change has happened wholly due to the intervention under study and not due to any other random factors.<sup>13</sup> The impact analysis for this study was carried out using the 'Causal Impact' measurement package of R studio. For measuring the Causal Impact, the data of Monsooned Malabar Arabica coffee during pre and post GI tag acquisition period was compared with non-GI specialty coffees Mysore Nuggets Extra Bold and Robusta Kaapi Royale. Comparison with substitutable specialty coffees were done in order to make sure that the impact was not on account of random factors and are purely due to the influence of GI tag registration. The data needed for the study was retrieved from the official website of Coffee Board of India for the period ranging from 2000 to 2020. A period of 20 years span was taken as the impact assessment requires pre-registration and post registration period.

In this study the data was analysed using 'Causal Impact' package provided in R studio. The research was done in order to identify the impact of

Geographical Indications tag on specialty coffee 'Monsooned Malabar Arabica'. When comparing the results before and after the GI registration in real world there are many other attributes, other than the factor under study that can influence the results. These externalities are called 'noise'. This issue was overcome by Kay Brodersen and the team at Google, they built an algorithm called Causal Impact to address the 'noise'. The core of this algorithm is to build a Bayesian Structural time series model based on test group and control groups. The control groups are used to construct a synthetic time series baseline, which represents the values that we would have got if there were no impacting event. In this study 'Monsooned Malabar Arabica Coffee' is the test group and Mysore Nuggets Extra Bold and Robusta Kaapi Royale are the control group.

#### Impact of GI Registration on Monsooned Malabar Arabica Coffee Exports

The result of causal impact package run on R studio for analysing the impact of GI tag on the total weight of Monsooned Malabar Arabica Coffee in terms of exports in Metric tons (lakhs) reveals the information as per Table 1.

During the post-intervention period, the response variable had an average value of approx. 4.63K. By contrast, in the absence of an intervention, we would have expected an average response of 3.76K. The 95% interval of this counterfactual prediction is [2.87K, 4.56K]. Subtracting this prediction from the observed response yields an estimate of the causal effect the intervention had on the response variable. This effect is 0.87K with a 95% interval of [0.07K, 1.76K].

Table 1 — Impact of GI registration on the total weight of Monsooned Malabar Arabica Coffee exports

	Average	Cumulative (Total after GI registration)
Actual	4632	60216
Prediction (s.d.) (if there were no intervention)	3757 (431)	48842 (5602)
95% CI	[2867, 4559]	[37272, 59261]
Absolute effect (s.d.)	875 (431)	11374 (5602)
95% CI	[73, 1765]	[955, 22944]
Relative effect (s.d.)	23% (11%)	23% (11%)
95% CI	[2%, 47%]	[2%, 47%]

Source: Impact value calculated from statistics published by Coffee Board of India

Summing up the individual data points during the post-intervention period, the response variable had an overall value of 60.22K. By contrast, had the intervention not taken place, we would have expected a sum of 48.84K. The 95% interval of this prediction is [37.27K, 59.26K].

The above results are given in terms of absolute numbers. In relative terms, the response variable showed an increase of +23%. The 95% interval of this percentage is [+2%, +47%].

This means that the positive effect observed during the intervention period is statistically significant and unlikely to be due to random fluctuations.

The probability of obtaining this effect by chance is very small (Bayesian one-sided tail-area probability  $p = 0.018$ ). This means the causal effect can be considered statistically significant.

The above test reveals that Geographical indications registration has a significant impact on the exports of Monsooned Malabar Arabica Coffee. The results show that the exports have increased significantly after the receipt of Geographical indications tag and that the increase in exports is not by mere accident or on account of other factors.

### Impact Assessment based on Price Per Metric Ton (in Lakhs)

The result of causal impact package run on R studio for analysing the impact of GI tag on the price per metric ton of Monsooned Malabar Arabica Coffee exported reveals the information as per Table 2.

Posterior tail-area probability  $p$ : 0.00102

Posterior probability of a causal effect: 99.89765%

During the post-intervention period, the response variable had an average value of approx. ₹ 2.40 lakhs / MT. By contrast, in the absence of an intervention, we would have expected an average response of ₹ 1.69 lakhs / MT. The 95% interval of this counterfactual prediction is [1.28, 2.12]. Subtracting this prediction from the observed response yields an estimate of the causal effect the intervention had on the response variable. This effect is ₹ 0.71 lakhs / MT with a 95% interval of [0.28, 1.12].

Summing up the individual data points during the post-intervention period (which can only sometimes be meaningfully interpreted), the response variable had an overall value of ₹ 28.79 lakhs / MT. By contrast, had the intervention not taken place, we would have expected a sum of ₹ 20.32 lakhs / MT. The 95% interval of this prediction is [15.39, 25.40].

The above results are given in terms of absolute numbers. In relative terms, the response variable showed an increase of +42%. The 95% interval of this percentage is [+17%, +66%].

This means that the positive effect observed during the intervention period is statistically significant and unlikely to be due to random fluctuations.

The probability of obtaining this effect by chance is very small (Bayesian one-sided tail-area probability  $p = 0.001$ ). This means the causal effect can be considered statistically significant.

### Impact of GI Registration on Temporal Factor

The result of causal impact package run on R studio for analysing the impact of GI tag on the temporal factor (number of labourers employed in the plantation) of Monsooned Malabar Arabica Coffee compared to that of non-GI specialty coffee reveals the information as per Table 3.

Posterior tail-area probability  $p$ : 0.046

Posterior probability of a causal effect: 95.4%

Table 2 — GI Impact assessment on Monsooned Malabar Arabica Coffee based on price per metric ton (in ₹ Lakhs)

	Average	Cumulative (Total after GI registration)
Actual	₹ 2.4	₹ 28.8
Prediction (s.d.) (If there were no intervention)	₹ 1.7 (0.22)	₹ 20.3 (2.61)
95% CI	[1.3, 2.1]	[15.4, 25.4]
Absolute effect (s.d.)	₹ 0.71 (0.22)	₹ 8.46 (2.61)
95% CI	[0.28, 1.1]	[3.39, 13.4]
Relative effect (s.d.)	42% (13%)	42% (13%)
95% CI	[17%, 66%]	[17%, 66%]

Source: Impact value calculated from statistics published by Coffee Board of India

Table 3 — Impact of GI registration on Temporal Factor (Number of labourers employed in the plantation) of Monsooned Malabar Arabica Coffee

	Average	Cumulative (Total After GI registration)
Actual	428533	4285325
Prediction (s.d.) (If there were no intervention)	411761 (9849)	4117606 (98494)
95% CI	[393208, 430732]	[3932080, 4307320]
Absolute effect (s.d.)	16772 (9849)	167719 (98494)
95% CI	[-2199, 35325]	[-21995, 353245]
Relative effect (s.d.)	4.1% (2.4%)	4.1% (2.4%)
95% CI	[-0.53%, 8.6%]	[-0.53%, 8.6%]

Source: Impact value calculated from statistics published by Coffee Board of India.

During the post-intervention period, the response variable had an average value of approx. 428.53K. In the absence of an intervention, we would have expected an average response of 411.76K. The 95% interval of this counterfactual prediction is [393.21K, 430.73K]. Subtracting this prediction from the observed response yields an estimate of the causal effect the intervention had on the response variable. This effect is 16.77K with a 95% interval of [-2.20K, 35.32K]. For a discussion of the significance of this effect, see below.

Summing up the individual data points during the post-intervention period (which can only sometimes be meaningfully interpreted), the response variable had an overall value of 4.29M. Had the intervention not taken place, we would have expected a sum of 4.12M. The 95% interval of this prediction is [3.93M, 4.31M].

The above results are given in terms of absolute numbers. In relative terms, the response variable showed an increase of +4%. The 95% interval of this percentage is [-1%, +9%].

This means that, although the intervention appears to have caused a positive effect, this effect is not statistically significant when considering the entire post-intervention period as a whole. Individual days or shorter stretches within the intervention period may of course still have had a significant effect, as indicated whenever the lower limit of the impact time series (lower plot) was above zero. The apparent effect could be the result of random fluctuations that are unrelated to the intervention.

## Conclusion

The 'Monsooned Malabar Arabica Coffee' has benefited from GI registration. The causal impact test results shows that this coffee variety with GI tag was able to increase its exports and earn a premium price after the GI tag registration. The results of temporal factor, that is increase in number of labourers in the plantation after the GI registration, even though it reveals a positive increase it is not attributable to the receipt of GI tag. The research finds that there are benefits from GI registration.

The benefit of GI registration should be capitalised by the Coffee Board of India. First and foremost, the coffee producers should be made aware about the prospects and possibilities of Geographical indications tag. The coffee producers should know the importance of Geographical indications tag, how it

can be of help as a marketing tool and how the GI can be protected using the legal policies available, only then they will be serious about using and protecting their GI. The Board should identify more coffee varieties and develop specialty coffee that can become eligible for GI registration. The Board should take initiatives to register GI labels for those coffee variants which do not have a registered GI label. For those GI registered coffee variants that already have GI label, steps should be taken to popularize the label both at domestic and international level. The label can bring advantages of reduced search cost for the customers and increase the visibility of the product among the customers. The Coffee Board can in line with the Tea Board protect its GI coffee varieties by using other Intellectual Property Rights like Trademark and Copy Rights. The name of the GI coffee variant can be protected through Copy right and the GI label can be given more protection by registering it as a trademark. The GI tag if managed professionally can bring social changes as this tag is a collective tag which brings benefits to a group of producers, unlike trademark which promotes monopoly.

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