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Economics of rubber industry in Kerala: An analytical study of indigenous rubber and import of rubber

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***Abstract*---**The present research paper is an attempt to examine the need to import rubber and the difference between indigenous rubber and the import of the rubber industry in Kerala. The study of indigenous rubber and the import of rubber is very important and significant for the Rubber industry in Kerala in the context of growing rubber imports from other countries to India. In the present study, 54 respondents opined that the import of rubber has a positive impact on our economy and they supported it whereas 179 respondents opined that the import of rubber harms our economy and they reject it. Therefore, it can be clearly stated that the import of rubber will negatively affect the economy. Comparison between indigenous rubber and import of rubber showed the fact that the effect is moderate for all sub-variables namely offering products at a lower price, providing superior quality products, providing regulating price mechanism in the market, providing goods well packed at lower cost, launching a different variety of products which suits the convenience of the people, coaxing other dealers to bring down the prices by reducing prices, preventing black marketing and hoarding, price reduction in fast-moving items, providing after-sales services. There is no difference in the comparison of the indigenous rubber and import of the rubber industry in Kerala. To be more specific, the import of rubber has no specific advantage over indigenous rubber in the Rubber industry in Kerala.

***Keywords*---**economic slump, global economic scenario, import of rubber, indigenous rubber, rural industrialization.

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Introduction

India is a developing economy where the majority of the people are poor and dependent on agriculture for their livelihood. Since the rural sector is predominant, industrialization should give more importance to rural industrialization Rubber is one of the major agricultural products of Kerala and a major portion of the total rubber production in India is accounted for by the state of Kerala. There is a significant place for the rubber industry in the economy of Kerala (Chadha & Sahu, 2002). The rubber industry of Kerala is one of its most important industries, accounting for the major amount of rubber production in the state. Rubber is the major agricultural product of Kerala and almost 90% of the total rubber production in India is accounted for by the state of Kerala. The rubber industry in Kerala also employs a large number of people in this region. Kerala has an intriguing past of rubber plantations which has transformed the fate of lakhs of people across the length and breadth of the state

Over the last decade, India is trying to develop into a major hub of demand for developing-country commodities' exports, including rubber, and a key target of investment. Trade linkages with India are significant for the exporters internationally (Chamberlin, 1949). Hence, any growth uncertainty in the trade can hit India quite badly. For the moment, the global economic scenario is immobile grim despite the modest recovery in a few developed countries. Nevertheless, the most worrying thing is the economic slump in India which has been budding as a major universal economic force and a rubber powerhouse (Parry et al., 2004; Schandlet al., 2016; Hall, 2016). Policymakers all over the world are worried about the probable blow of the sustained and protracted Indian economic slowdown.

Against this backdrop, the present paper is an attempt to examine the need to import rubber and the difference between indigenous rubber and the import of the rubber industry in Kerala (Chan, 1962). The study of indigenous rubber and the import of rubber is very important and significant for the Rubber industry in Kerala in the context of growing rubber imports from other countries to India. The researcher prepared a questionnaire keeping in mind all the important aspects related to indigenous rubber and the import of rubber (Mukhopadhyay, 2016; Kornochalert et al., 2014).

Methodology

The present study is based on primary data. Primary data was collected from the Rubber industrial units (Sole Proprietor, Firm, and Company) from three regions of Kerala i.e., Southern Region, Central Region, and Northern Region through a structured questionnaire. The questionnaire was constructed after consulting the experts in the field of the Rubber industry (Chengappa, 2004). Based on their suggestion, some items were deleted and some items were modified. The responses of the users were, by and large, encouraging. They responded freely in highlighting different aspects of the rubber industry.

Here, the sample comprises two hundred and thirty-three Rubber industrial units (233) of the total population (LM) of 590 with the Confidence level =95%,

Confidence interval=5%, Level of Significance=5%, and the Z value=1.96 (Two-Tailed). The territorial spread of the field of investigation is confined to three major regions in the state i.e.: Southern Region (Thiruvananthapuram, Kollam, Pathanamthitta, Alappuzha), Central Region (Kottayam, Idukki, Ernakulum, Trissur, Palakkad, Malappuram), and Northern Region (Kozhikode, Wayanad, Kannur, Kasaragod). From Southern Region, sixty-three units (27.0%) are selected and from Central Region one hundred and eighteen units (50.6%) are selected and from Northern Region, fifty-two units (22.3%) are selected for the study (Signes et al., 2016; Setiawan, 20120). Since the exact target figure for Rubber manufacturing industrial units working in the state is available (590 units), a systematic sampling method is used in the study.

Results and Discussion

Now let us make an analysis on the indigenous rubber and import of rubber industry in Kerala and undertake the Binomial Test to examine the need of the import of rubber which is provided below.

Table 1
Indigenous rubber and Import of rubber

Binomial Test					
	Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Use of Import	Yes	54	0.23	0.5	0.000
	No	179	0.77	Result	
		233	1.00	Significant	

Source: Computed from field Survey

The above result shows that 54 respondents opined that the import of rubber has a positive impact on our economy and they support it whereas 179 respondents opined that the import of rubber harms our economy and they reject it The test result of P-value is .000 which is less than 0.05. Thus, we reject the null hypothesis (Ho). The import of rubber will negatively affect the economy.

The next part of the analysis is very important as far as the present research study is concerned. Here a comparison is done between indigenous rubber and import of rubber with selected variables (Kannan, 2013). Further analysis was done with the help of the Wilcoxon Signed Ranks Test. Hence an objective was formulated in this direction.

Objective: To make a comparison between the scope of indigenous rubber and the import of rubber in Kerala.

Hypothesis: Statistically there is no significant scope of comparing indigenous rubber and import of rubber in Kerala.

Table 2
Comparison of Indigenous rubber and Import of rubber

Sub variables	N	Mean	Std. Deviation	Mean	Std. Deviation
Offering products at lower price	233	3.476**	.9652	3.361**	.9090
Providing superior quality products	233	3.335**	.8707	3.429***	.9356
Regulating price mechanism in the market	233	3.459**	.9374	3.438**	.9499
Providing goods well packed at lower cost	233	3.369**	.9383	3.373**	.9062
Launching different variety of products which suits the convenience of the people	233	3.476**	.9517	3.339**	.9007
Coaxing other dealers to bring down the prices by reducing prices	233	3.468**	.9050	3.395**	.9231
Preventing black marketing and hoarding	233	3.373**	.9297	3.425**	.9024
Price reduction in fast moving items	233	3.373**	.9250	3.408**	.9383
Providing after sales services at cheap rates for overcoming the competition	233	3.395**	.9370	3.442**	.9902
Maintaining and establishing cheap outlets for making stability in operations	233	3.459**	.9511	3.433**	.8983
Keep good stock of the levels of raw materials (rubber) maintained	233	3.391**	.9858	3.373**	.9062
Availability of more durable products	233	3.403**	.9333	3.369**	.9056
Accessibility of superior quality rubber as raw material	233	3.386**	.9632	3.378**	.9576
Production of variety of goods	233	3.399**	.9911	3.446**	.9040

Source: Computed from field Survey,-Low effect, **-Moderate effect, ***-High effect.*

Based on the above table a comparison was done. Accordingly, the mean value assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable offering products at a lower price is 3.476 (Moderate effect) and 3.361 (Moderate effect) respectively (Mukherjee & Zhang, 2007; Berger, 2019; Schoen, 2019). The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable providing superior quality

products is 3.335 (Moderate effect) and 3.429 (Moderate effect) respectively. The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable providing regulating price mechanism in the market is 3.459 (Moderate effect) and 3.438 (Moderate effect) respectively.

The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable providing goods well packed at a lower cost is 3.369 (Moderate effect) and 3.373 (Moderate effect) respectively. The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable launching a different variety of products which suits the convenience of the people is 3.476 (Moderate effect) and 3.339 (Moderate effect) respectively (Stern, 1965; Tan, 1984). The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable coaxing other dealers to bring down the prices by reducing prices is 3.468 (Moderate effect) and 3.395 (Moderate effect) respectively.

The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable preventing black marketing and hoarding is 3.373 (Moderate effect) and 3.425 (Moderate effect) respectively. The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable price reduction in fast-moving items is 3.373 (Moderate effect) and 3.408 (Moderate effect) respectively. The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable providing after-sales services at cheap rates for overcoming the competition is 3.395 (Moderate effect) and 3.442 (Moderate effect) respectively (George & Joseph, 1992). The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable maintaining and establishing cheap outlets for making stability in operations is 3.459 (Moderate effect) and 3.433 (Moderate effect) respectively.

The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable keep a good stock of the levels of raw materials (rubber) maintained is 3.391 (Moderate effect) and 3.373 (Moderate effect) respectively. The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable availability of more durable products is 3.403 (Moderate effect) and 3.369 (Moderate effect) respectively. The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable accessibility of superior quality rubber as raw material is 3.386 (Moderate effect) and 3.378 (Moderate effect) respectively. The score assigned by the respondents towards the indigenous rubber and import of rubber for the sub variable production of a variety of goods is 3.399 (Moderate effect) and 3.446 (Moderate effect) respectively.

Table 3
Indigenous rubber and import of rubber- Wilcoxon Signed Ranks Test

Ranks				
		N	Mean Rank	Sum of Ranks
Offering products at a lower price	Negative Ranks	78[a]	66.35	5175.00
	Positive Ranks	55[b]	67.93	3736.00

	Ties	100[c]			
	Total	233			
Wilcoxon Signed Ranks Test	-1.714	P value		0.086	Not sig.
	Negative Ranks	65[d]		66.18	4301.50
Providing superior quality products	Positive Ranks	76[e]		75.13	5709.50
	Ties	92[f]			
	Total	233			
Wilcoxon Signed Ranks Test	-1.556[c]	P value		0.120	Not sig.
	Negative Ranks	77[g]		72.41	5575.50
Regulating price mechanism in the market	Positive Ranks	70[h]		75.75	5302.50
	Ties	86[i]			
	Total	233			
Wilcoxon Signed Ranks Test	-.283[b]	P value		0.777	Not sig.
	Negative Ranks	70[j]		71.14	4980.00
Providing goods well packed at a lower cost	Positive Ranks	71[k]		70.86	5031.00
	Ties	92[l]			
	Total	233			
Wilcoxon Signed Ranks Test	-.055[c]	P value		0.956	Not sig.
	Negative Ranks	78[m]		74.99	5849.50
Launching different variety of products which suits the convenience of the people	Positive Ranks	61[n]		63.61	3880.50
	Ties	94[o]			
	Total	233			
Wilcoxon Signed Ranks Test	-2.205[b]	P value		0.027	Sig.
Coaxing other dealers to bring down the prices by reducing prices	Negative Ranks	80[p]	67.25	5380.00	
	Positive Ranks	60[q]	74.83	4490.00	
	Ties	93[r]			
	Total	233			
Wilcoxon Signed Ranks Test	-.986[b]	P value		0.324	Not sig.
Preventing black marketing and hoarding	Negative Ranks	61[s]	72.59	4428.00	
	Positive Ranks	76[t]	66.12	5025.00	
	Ties	96[u]			
	Total	233			
Wilcoxon Signed Ranks Test	-.683[c]	P value		0.495	Not sig.
Price reduction in fast moving items	Negative Ranks	65[v]	73.77	4795.00	
	Positive Ranks	76[w]	68.63	5216.00	
	Ties	92[x]			
	Total	233			
Wilcoxon Signed Ranks Test	-.465[c]	P value		0.642	Not sig.
Providing after sales services at cheap	Negative Ranks	63[y]	65.61	4133.50	
	Positive Ranks	70[z]	68.25	4777.50	

rates for overcoming the competition	Ties	100[aa]			
	Total	233			
Wilcoxon Signed Ranks Test	-.776[c]	P value		0.438	Not sig.
Maintaining and establishing cheap outlets for making stability in operations	Negative Ranks	71[ab]		65.99	4685.50
	Positive Ranks	63[ac]		69.20	4359.50
	Ties	99[ad]			
	Total	233			
Wilcoxon Signed Ranks Test	-.393[b]	P value		0.694	Not sig.
Keep a good stock of the levels of raw materials (rubber) maintained	Negative Ranks	67[ae]		63.83	4276.50
	Positive Ranks	62[af]		66.27	4108.50
	Ties	104[ag]			
	Total	233			
Wilcoxon Signed Ranks Test	-.208[b]	P value		0.836	Not sig.
Availability of more durable products	Negative Ranks	66[ah]	63.95		4221.00
	Positive Ranks	60[ai]	63.00		3780.00
	Ties	107[aj]			
	Total	233			
Wilcoxon Signed Ranks Test	-.579[b]	P value		0.563	Not sig.
Accessibility of superior quality rubber as raw material	Negative Ranks	72[ak]		68.05	4899.50
	Positive Ranks	67[al]		72.10	4830.50
	Ties	94[am]			
	Total	233			
Wilcoxon Signed Ranks Test	-.078[b]	P value		0.938	Not sig.
Production of a variety of goods	Negative Ranks	69[an]	66.13		4563.00
	Positive Ranks	71[ao]	74.75		5307.00
	Ties	93[ap]			
	Total	233			
Wilcoxon Signed Ranks Test	-.830[c]	P value		0.406	Not sig.

Source: Computed from field Survey

Now the statistical significance of the comparison made between indigenous rubber and import of rubber industry in Kerala, for which one of the notable Non-parametric tests namely Wilcoxon signed-ranks test using the Z statistic was performed. In the above table, it is clear that in all cases except Launching a different variety of products which suits the convenience of the people, P-Value greater than 0.05, (P>0.05). This means that there is no statistical significance in the comparison of the indigenous rubber and import of the rubber industry in Kerala. To be more specific, the import of rubber has no specific advantage over indigenous rubber in the Rubber industry in Kerala.

Conclusion

- 54 respondents opined that the import of rubber has a positive impact on our economy and they supported it whereas 179 respondents

opined that the import of rubber harms our economy and they reject it. Therefore, it can be unambiguously stated that the import of rubber will negatively affect the economy.

- Comparison between indigenous rubber and import of rubber showed the fact that the effect is moderate for all sub-variables namely offering products at a lower price, providing superior quality products, providing regulating price mechanism in the market, providing goods well packed at lower cost, launching a different variety of products which suits the convenience of the people, coaxing other dealers to bring down the prices by reducing prices, preventing black marketing and hoarding, price reduction in fast-moving items, providing after-sales services at cheap rates for overcoming the competition, maintaining and establishing cheap outlets for making stability in operations, keep a good stock of the levels of raw materials (rubber) maintained, availability of more durable products, accessibility of superior quality rubber as raw material and production of a variety of goods.

Therefore, it is concluded that policymakers all over the world are concerned regarding the possible drivers of the continued and prolonged Indian economic hold-up. The majority of the respondents opined that the import of rubber harms our economy. There is no difference in the comparison of the indigenous rubber and import of the rubber industry in Kerala. To be more specific, the import of rubber has no specific advantage over indigenous rubber in the Rubber industry in Kerala.

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