Problems Faced By The Firework Industries In Manufacturing Of Green Crakcers - A Study With Special Reference To Virudhunagar District

K. JEYARAM[1] , Dr.G. KARUNANITHI[2]

[1]Ph.D., Research Scholar (Part-Time), Department of Commerce, Annamalai University, Annamalai Nagar- 608 002, Tamil Nadu. India.

[2]Assistant Professor in Commerce, PG Department of Commerce, Government Arts and Science College, Sivakasi – 626 124, Tamil Nadu (Deputed from Annamalai University, Annamalai Nagar) India.

ABSTRACT

The religious festivals like Diwali, Ganesh chaturthi, Dusshera, Durga puja are celebrated with a lot of fanfare. These festivals are characterised by mega festivities with high value gifting, spending enormous money on loud and bright fireworks. Pollution has been one of the biggest side effects of these celebrations with fireworks being one of the major contributors. Crackers and fireworks are found to be the chief sources of air pollution during Diwali festival. Consumers enjoy fireworks and often use them as means to display their wealth and happiness during festivals. At the other side, it is a position of environmental pollution. National Environmental Engineering Research Institute instructed to manufacture green crackers. Green crackers has less chemical composition. Its smog level is low. Many fireworks industries started to produce green crackers. They faced lot of problems in manufacturing green crackers. In Virudhunagar district, crackers are manufactured only in Sivakasi. In other taluks, whole sale and retail sales of crackers take place. In India, as per National Environmental Engineering Research Institute (NEERI) report 2022-2023, 1085 fireworks have registered for manufacturing green crackers out of which 90 per cent of the units are located in and around Sivakasi. Hence, 1085 units are considered as population units for fireworks manufacturers. The population is fed into Yamunae formula and samples size

determined is 292 at 95 per cent level of significance. Hence, Census survey method has been used. The present study focused focuses on the problems faced by the manufacturers of green crackers.

Keywords: Green crackers, NEERI, Fireworks, Manufacturers, Pollution, Diwali, Festivals.

INTRODUCTION

Festivals have been celebrated in India across centuries. Religious festivals like Diwali, Dussehra, Eid, Christmas, etc. bear symbolism and are rooted in the mythologies of their respective faiths, and are observed with specific rituals and celebrations. Most of these celebrations customarily use bright lights and firecrackers. The celebration of these festivals has gained gigantic proportions with the passage of time. The enthusiasm of the consumers has risen along with the pollution caused due to these festivities. Promotions by the marketers and fireworks industry further give a buoyancy to this fervour. Metros like Delhi are one of the first few where the pollution level during festivals has acquired dangerous proportions. By monitoring this, Government directed the fireworks industries to manufacture green crackers.

Fireworks in India are available throughout the year. Individual, of any age can buy fireworks. Moreover, the consumers have the right to burst the firecrackers wherever they desire. The regulation regarding fireworks consumption has been an adhoc affair depending upon the region, event and the level of pollution at that time. There are many reasons for the lack of laws and regulations governing fireworks

1. Enforcing rules for manufactures before the sale of crackers is easier than enforcing rules for display and bursting of crackers. According to the Supreme Court, there is no restriction on bursting crackers as it is difficult to implement and monitor. In October 2015, Supreme Court declined a public interest plea that sought a blanket ban on crackers near Diwali on similar grounds.

2. Regulating the consumer buying and use of fireworks will ultimately lead to low demand which will hurt the firecracker industry which is estimated to be of 2500 crores (Ban on Chinese fireworks' fails to boost domestic firecracker sales: Survey ,2016). and provides livelihood to lakhs of people in the country

3. The pollution due to Diwali (the most popular festival which is known to exhibit fireworks extensively) has been recorded

and reported by apex agencies like CPCB. However, the share of pollution due to other festivals has not attracted much attention. Moreover, the ratio of pollution due to fireworks to total pollution has not been known. Hence it is difficult to pinpoint the problem.

4. Government agencies are themselves a party to the celebrations through fireworks. Independence Day, winning of games by the nation and the triumph of the winning party in the elections is celebrated by the grand display of fireworks. Thus the government and political parties need to change their customary practices and vouch for the ill effects of pollution due to firecrackers.

5. Crackers form an important part of festival celebrations which have been rooted in our religious values. Hence imposing a blanket ban on them may hurt the sentiments of people.

6. Ruling party doesn't want to lose confidence, support and image in the eyes of public. Therefore the state is not interested in taking a risk by imposing a ban on fireworks.

STATEMENT OF THE PROBLEM

India is known as a land of festivals. In fact festivals are one of the best ways to look into India's culture and tradition. Each festival has its own history, fable, connotation and style of celebration. These festivals may be religious or economic/commercial, annual or semi-annual/ biannual, national or regional or seasonal. Indian festivals are associated with change of seasons, agricultural and religious events. The religious festivals like Diwali, Ganesh chaturthi, Dusshera, Durga puja are celebrated with a lot of fanfare. These festivals are characterized by mega festivities with high value gifting, enormous spending and loud and bright fireworks. Pollution has been one of the biggest side effects of these celebrations with fireworks being one of the major contributors. Crackers and fireworks are found to be the chief sources of air pollution during Diwali festival. Consumers enjoy fireworks and often use them as means to display their wealth and happiness during the festivals. At the other side, it is a position of environmental pollution. National Environmental Engineering Research Institute instructed to manufacture green crackers. Green crackers are the crackers which has less chemical composition. Its smog level is low.Many fireworks industries started to produce green crackers. They faced lot of problems in manufacturing green crackers.

SCOPE OF THE STUDY

The present study focuses on the problems faced by green crackers manufacturers.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To study the socio-economic profile of the respondents
2. To know about the business profile of the respondents.
3. To analyse the problems faced by manufacturers of green crackers
4. To give suggestions on the basis of findings of the study.

RESEARCH METHODOLOGY

Research methodology indicate research design, types of data used, tools for data collection, sampling framework and data processing.

Research Design

The research design is descriptive as it uses published data from various sources and collect firsthand information for analysis.

Types of Data Used

In this study, both primary and secondary data are used.

Tools for Data Collection

For collection of primary data, well-structured and pre tested questionnaire has been used. Secondary data has been gathered from journals, magazines, books, crackers association report and websites.

Sampling Framework

In Virudhunagar district, crackers are manufactured only in Sivakasi. In other taluks, whole sale and retail sales of crackers take place. In India, as per National Environmental Engineering Research Institute (NEERI) report 2022-2023, 1085 fireworks have registered for manufacturing green crackers out of which 90 per cent of the units are located in and around Sivakasi. Hence, 1085 units are considered as population units for fireworks manufacturers. The population is fed into Yamunae formula and samples size determined is 292 at 95 per cent level of significance.

Table 1 Sample Design for Fire Works

Town	No. of Fireworks units	Sample chosen
Virudhunagar	13	3
Sivakasi	977	262
Sattur	11	3
Rajapalayam	15	4
Srivilliputhur	9	2
Aruppukottai	12	3
Vembakottai	14	4
Watrap	19	5
Thiruchulli	2	2
Narikudi	5	1
Kariyapatti	8	3
Total	1085	292

Source: NEERI Report, 2023

Among the 1085 registered fireworks units, 292 units are chosen proportionately by using convenience sampling method.

Data Processing

The collected primary data is coded, edited and tabulated for further analysis. Statistical Package for Social Sciences (SPSS) is used for analysis of data. Percentage analysis and Kendall's Concordance test has been used for analyzing the primary data.

ANALYSIS AND DISCUSSION

In this section, Socio-economic profile of the respondents, business profile of the respondents and problems faced by the respondents in manufacturing green crackers are studied.

Socio-Economic Profile of the Respondents

Table 2 spells out the socio-economic profile of the respondents.

Table 2 Socio-Economic Profile of the Respondents

Socio-Economic Profile		No. of Respondents	Percentage
Age (in years)	Below 30	72	24.66
	30-45	110	37.67
	45-60	91	31.16
	Above 60	19	6.51
Gender	Male	188	64.38

	Female	104	35.62
Educational Qualification	School level	127	43.49
	College level	112	38.36
	Others	53	18.15
Marital Status	Married	255	87.33
	Unmarried	37	12.67
Family Size	Below 4	144	49.32
	4-6	87	29.79
	Above 6	61	20.89
Nature of the Family	Joint Family	92	31.51
	Nuclear Family	200	68.49
Monthly Income (in Rs.)	Below 50,000	127	43.49
	50,000-1,00,000	104	35.62
	Above 1,00,000	61	20.89

Source: Primary data

Out of 292 respondents,

- 110 (37.67%) are in the age group of 30-45 years.
- 188 (64.38%) are male
- 127 (43.49%) have completed their education upto school level
- 255 (87.33%) are married
- 144 (49.32%) have below 4 members in their family
- 200 (68.49%) come under nuclear family system
- 127 (43.49%) have earned below Rs. 50,000 per month

Business Profile of the Respondents

Table 3 lists out the business profile of the respondents.

Table 3 Business Profile of the Respondents

Business Profile		**No. of Respondents**	**Percentage**
Business Experience (in years)	Below 10	95	32.53
	10-20	156	53.42
	Above 20	41	14.04
	Sole trader	129	44.18

Ownership of business	Partnership	101	34.59
	Company	62	21.23
Ownership of the Business Premises	Own premises	98	33.56
	Rented premises	86	29.45
	Leased premises	42	14.38
	Govt. allotted Sheds	66	22.60
No. of workers employed in the premises	Below 10	144	49.32
	10-20	81	27.74
	Above 20	67	22.95
Source of Motivation to engage in the business	Own interest	86	29.45
	Family business	56	19.18
	Constant Demand for the product	60	20.55
	Stable profit	59	20.21
	High progress	31	10.62

Source: Primary data

Out of 292 respondents,

- 156 (53.42%) have 10-20 years business experience
- 129 (44.18%) are sole traders
- 98 (33.56%) have done their business in own premises
- 144 (49.32%) have employed below 10 workers
- 86 (29.45%) are engaged in fireworks business in own interest

Problems Faced in Manufacturing Green Crackers

The problems faced by the respondents in manufacturing green crackers are given in Table 4.

Table 4 Problems Faced in Manufacturing Green Crackers

Problems	**Ranks**								**Total**
	I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	

Non-availability of raw materials for green crackers	175	42	17	12	9	16	10	11	**292**
Non-availability of skilled labourers for production of green crackers	22	174	23	18	5	20	23	7	**292**
High cost of raw materials	27	34	164	11	14	32	7	3	**292**
Lack of awareness of the customers towards green crackers	33	19	44	159	23	5	3	6	**292**
Cumbersome process of manufacturing green crackers	12	14	28	45	164	16	12	1	**292**
Need for extra storage space for green crackers	9	6	10	12	35	167	31	22	**292**
Need for High amount of investments	10	2	4	7	16	17	171	65	**292**
Lack of training for	4	1	2	28	26	19	35	177	**292**

manufacturing green crackers									
Total	**292**	**292**	**292**	**292**	**292**	**292**	**292**	**292**	

Source: Primary data

Kendall's concordance test has been used to analyse the problems faced by the respondents in manufacturing green crackers. The null hypothesis framed is that the problems faced by the respondents in manufacturing the green crackers are not significant.

Table 5 Problems Faced in Manufacturing Green Crackers – Mean Rank

Statements	**Mean Rank**
Non-availability of raw materials for green crackers	66.16
Non-availability of skilled labourers for production of green crackers	47.26
High cost of raw materials	75.72
Lack of awareness of the customers towards green crackers	51.83
Cumbersome process of manufacturing green crackers	96.35
Need for extra storage space for green crackers	69.83
Need for High amount of investments	91.63
Lack of training for manufacturing green crackers	78.84

Source: Primary data

Most of the respondents have faced a problem of 'Cumbersome process of manufacturing green crackers' with the mean score of 96.35 followed by 'Need for High amount of investments'.

Table 6 explains the results of Kendall's concordance test.

Table 6 Problems Faced in Manufacturing Green Crackers – Kendall's concordance test

N	292
Kendall's W[a]	.054
Chi-Square	205.633

df	291
Asymp. Sig.	.000
a. Kendall's Coefficient of Concordance	

The calculated value of Kendall's concordance test is 0.054 which is significant as it lies between 0 and 1 and the chi-square test value is 205.633which is also significant as its p value is less than 0.05. (0.000<0.05). Thus, the null hypothesis is rejected. Hence, it is proved that the problems faced by the respondents in manufacturing the green crackers are significant.

SUGGESTIONS

On the basis of findings of the study, some suggestions are given.

1. Government has to provide financial assistance for those who manufacture green crackers.
2. Proper training should be given to train the manufacturers for manufacturing green crackers.

SUGGESTIONS

On the basis of findings of the study, some suggestions are given.

3. Government has to provide financial assistance for those who manufacture green crackers.
4. Proper training should be given to train the manufacturers for manufacturing green crackers.

CONCLUSION

As per Cracker's Association Report 2022-2023, 1085 fireworks units are functioning. All the 1085 units are manufacturing green crackers. Even though they do not produce green crackers in their entire capacity, they engage themselves in producing green crackers at meagre level. Most of the respondents have faced a problem of 'Cumbersome process of manufacturing green crackers' and followed by 'Need for High amount of investments'.

REFERENCES

1. Kaul, V.K. (2015). India's diversity: From conflict to innovation. World Affairs, 19 (4), 10-43.

2. Zagorsky, J. L. (2017, June 30). America's rights to bear fireworks are growing. State restrictions are loosening, prices are dropping-but injuries are climbing. Scientific American. Retrieved from https://www.scientificamerican.com/article/america-rsquo-s-rights-to-bear-fireworks-are-growing/

3. Breugel, V. L. (2013). Community-based tourism: Local participation and perceived impact. A comparative study between two communities in Thailand (Master Thesis). Faculty of Social Sciences, Radboud University, Nijmegen.

4. Central Pollution Control Board (CPCB) (2016). Delhi Deepawali monitoring report: 2016. Monitoring of ambient air & noise monitoring conducted by CPCB: 2016 [press release]. Retrieved from http://cpcb.nic.in/Deepawali_data/Deepawali_2016.pdf