

Research Article

Mass Communication Tools: Exploring Effectiveness for Assam Tea Worker Community

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A B S T R A C T

Assam's tea workers, a diverse mix of ethnic communities, have lived in isolated tea garden colonies since the British era. This research paper presents a field survey among these workers, assessing the effectiveness of various mass media tools in disseminating public awareness messages. The survey, comprising 15 questions, aimed to measure seven indicators related to the visibility and understanding of different media messages. The findings reveal a poor reach and impact of these mass media tools among the studied population.

Keywords: Mass Communication Design, Communication Model, Communication Design, Communication Research, Assam Tea Tribe

Introduction

Tea, being the second most consumed beverage worldwide after packaged water, is a daily staple for many, with approximately five billion cups consumed globally each day (Bolton, 2019; UKTIA, 2023). India, contributing to around 27% of global production, stands as the world's largest producer and consumer of tea (Khullar, 2006). The majority of the world's tea comes from two primary varieties, *C. sinensis* var. *sinensis* and *C. s. var. assamica*, with the latter named after Assam, a northeastern state in India.

The discovery of tea is attributed to a Chinese emperor, Shih Nung, who stumbled upon it in 2737 BC when a wild tea leaf fell into his hot water bowl. Evidence of tea consumption dates back to the Han dynasty (206 BC - 220 AD), with tea containers found in tombs from that period.

The first book dedicated entirely to tea, the *Ch'a Ching*, or *Tea Classic*, was written by Chinese writer Lu Yu in 780 AD. Shortly after, tea was introduced to Japan by Japanese Buddhist monks who had visited China for studies (UKTIA, 2023).

Tea was brought to Europe by Dutch merchants in the early 17th century. The first public serving of tea in London was at Garraway's Coffee House in 1657, and it quickly became a popular drink in England. The British East India Company began importing tea from China in 1689, and by 1700 AD, tea had become a widely consumed non-alcoholic beverage in several countries. During this time, tea was used to alleviate various ailments such as depression, headaches, eye pain, joint pains, and other similar conditions (Willson & Clifford, 1992).

In India, the Singpho tribal people were the first to use tea.

Singpho and Khamti people used to make tea beverages. Scottish adventurer Robert Bruce reportedly discovered the tea plant growing wild in Assam and was introduced to the local Singpho Chief Bessa Gam by Maniram Duta Baruah (Gokhale, 1998). In 1823 AD, Robert introduced tea as a plantation in Assam. He died shortly thereafter, without having seen the plant properly classified. It was not until the early 1830s that Robert's brother Charles arranged for a few leaves from the Assam tea bush to be sent to Calcutta for proper examination by botanist Nathaniel Wallich. The plant was identified as a variety of tea *Camellia sinensis*, but different from the Chinese one. In 1834, the Tea Committee of Lord William Bentinck, then British India's Governor-General, decided to encourage the planned cultivation of tea. As an experiment, next year, the first tea garden was opened in 1835 in the Lakhimpur district (Hunter, 1879). The first batch of tea was shipped to London in 1838 and auctioned the next year. The Assam Company began operations in 1840, where Maniram Duta Baruah was a Dewan (chief administrative and financial officer). After 1841 Maniram no longer appears in the Assam Company's records as its land agent. The records provide no clues as to why or when he was dismissed (Sharma, 2011). He started his tea estates at Cinnamara near Jorhat and Singlo near Charaideo. Roseswar Barua who started with 7 gardens (Chakravorty, 1997) followed him. The other tea companies that came into prominence around this time included the Dum Duma Company, the Jokai Company, the Assam Frontier Tea Company and the Dihing Company (Imperial Gazetteer of India, 1908).

Assam today is the world's largest tea-producing region and the fourth-largest tea exporter (Inter-Governmental Group on Tea, 2020). There are around 800 large and medium-sized tea estates in Assam, whereas around 0.13 million small tea growers contribute about 29% of the state's total tea production (Kakati, 2016). As per the Tea Board of India report, Assam produced 696.67 million KG of tea in 2022-23. Assam tea employs 17 per cent of the total workforce in the state (Assam Human Development Report, 2014).

During the formative days, labour scarcity was a constant hindrance to the expansion of tea plantations in Assam (Gait, 1902). The companies imported Chinese workers to work in the tea plantations, but by 1848, they all left. The British tried to recruit from the local populace for a fixed term. Kacharis, Matakis, Kukis, Nagas, Singphos and Apatanis could be engaged (Kar, 2001). The Gaon Burha (headman) of the villages supplied them (Warren, 1975). Mostly they were people becoming landless due to buying and possessing land by the tea companies (Borgohain, 2015). However,

it was difficult to keep them and trace if they deserted midway. They were unwilling to commit themselves to the extremely hard work in the plantations. The repressive environment prevailing in the tea gardens failed to lure the natives (Sharma, 2012). Under the circumstances, the planters started procuring labour from other States of India. Full-fledged recruitment of cheap, helpless and illiterate labourers from Bihar, Orissa, Bengal, Chota Nagpur Plateau, erstwhile United Provinces, Central Provinces and Madras began (Barpujari, 2007), mostly from regions where famine, drought, flood and epidemics were prevalent (Duara & Mallick, 2012). The majority of these immigrant labourers were peasants who cultivated rice, maize, wheat, barley, millets and so on in their homelands. (Imperial Gazetteer Bengal, 1907). Tea was an agro-industry that did have similarities to their prior agricultural lives, yet the plantation regime was an extremely new experience for these immigrant labourers.

The tea saplings were planted by cleaning the forests, and within such jungle areas, the workers were made to reside in lines (queues, serially). By the late nineteenth century, most tea gardens became physically isolated both by geographical distance and deliberate exclusion by fencing off from urban settlements and surrounding rural society (Behal, 2006). Workers were subjected to physical and social control by various methods, such as, they were compelled to reside within the vicinity of the gardens and were made completely dependent on their employers for every necessity of life (Behal, 1985). These socially secluded enclaves remained damp throughout the year. Dirty ponds were the major source of drinking water, which were also used for bathing, washing clothes and shared by animals. Tea garden workers got 25 square feet of area for their settlement. There was no escape for these highly vulnerable people (Varma, 2016). They were foreign to the Assam hills, did not speak the language and had no knowledge of the terrain. Their ignorance of local territory, coupled with rewards paid to local hill dwellers to track them with dogs, ensured that the plantation's existence had to be borne against all odds. (Bremner, 1989). They were not allowed to mix up with the outside world, or even venture out (Kurmi, 1991). The scope of movement from even one garden to another was virtually non-existent. (Gupta, 1981).

Disease, malnutrition and a high rate of mortality were the harsh realities of plantation life for the labourers (Behal 1985). Out of 84,915 workers imported to Assam through ships between 1863-66, as many as 31,876 died during the same period (Kurmi, 1991). Diseases like cholera, diarrhoea, dysentery, malaria, anaemia (hookworm disease or ancylostomiasis) was included in this category since 1893,

kala-azar, dropsy, influenza, hookworm and respiratory complications were widely prevalent. (Shlomowitz and Brennan, 1990). Cholera deaths were widespread among the workers right from the moment they began their journey to the Assam tea plantations. Apart from cholera, impure drinking water was also believed to be the main cause of diarrhoea and dysentery, which had a very high share in mortality percentages in the plantations (Report on Labour Immigration into Assam, 1878). Dr G. C. Ramsay, the then principal of the India branch of the Ross Institute London states that most malarial cases in Assam tea plantations were, an “unwitting creation of mankind” (Minutes of Evidence, 1931). Anaemia was extremely common among labourers and especially women, which often accounted for high maternal mortality rates (Gangulee, 1939; Amrith, 2008) It was indeed an accepted notion that among the garden population, the percentage of mortality of women was greater than that of men mostly due to the risks of childbirth (Report on Labour Immigration into Assam, 1879). Pre-term and stillbirths as well as teenage pregnancy were reported to be very common amongst them with severe implications for the young women’s growing bodies. In the early twentieth century, the medical officer of Nazira observed the appalling rates of abortions and opined that in certain gardens, almost 65 per cent of women labourers did not give birth to living children (Behal, 2014).

A system was established to classify plantations based on mortality rates, with any garden exceeding an annual death rate of 7 per cent being labelled as “unhealthy” (Report on Labour Immigration into Assam, 1884). An act passed in 1873 empowered the local government to close such “unhealthy” plantations. In 1889, 12.2 per cent of gardens in the Brahmaputra Valley were deemed “unhealthy” (Report on Labour Immigration into Assam, 1890). In response to the growing number of unhealthy gardens, the Government of Assam implemented rules in 1891 requiring any garden that appeared on the unhealthy list for two consecutive years to ensure they were adhering to the recommendations of sanitary officers (Das, 1931). However, this measure did not improve the situation, as the percentage of unhealthy gardens rose to 16.4 per cent in 1892 (Report on Labour Immigration into Assam, 1894). The labourers’ reluctance to invest in proper nutrition was often cited as a reason for their declining health and inability to recover from illness (Report on Labour Immigration into Assam, 1883).

Despite the protection offered by laws and the presence of trade unions, the tea labour force remains one of the most vulnerable sectors of India’s ‘organised’ labour class. Various studies indicate that labour relations in plantation

economies continue to be oppressive, even as production conditions have undergone significant changes, particularly in terms of technology, labour management, and marketing (Mishra et al., 2012). Regular tea workers, despite having steady employment, remain in perpetual poverty. These workers can be categorised as ‘working poor’: individuals who have regular work but are still poor (Sarkar, 2016). Among these workers, 50% of households fall into the ‘below poverty line’ category. For 37% of their households, expenditure exceeds income, resulting in recurrent debt (TISS, 2019). They are subject to traditional money lending, controlled by traders and sometimes by wealthier members of their community (Kar, 1993). To reduce production costs, owners are gradually moving towards casualisation of employment. Currently, only 30-40% of tea garden workers in Assam are formally employed. The tea sector has the highest proportion of female workers among all organised industries (Mishra et al., 2012). Women were not recruited for their skills in such work but were recruited as part of a family unit (Chatterjee, 2001), and to control the male worker force and to ensure the steady reproduction of ‘cheap’ workers (Rasaily, 2016).

Poor socio-economic conditions, illiteracy, overcrowded and unhygienic living conditions make the tea garden population susceptible to many health problems (Saikia et al., 2014). Unhealthy dietary habits, working barefoot, drinking salted tea throughout the day, tobacco chewing, excessive alcohol consumption, poor sanitation, poor childcare, and other factors contribute to the exceptionally poor nutritional status of their children (Vir, 2008). In addition to undernutrition, a comprehensive study (Medhi et al., 2006) highlighted high incidences of infectious diseases among the tea garden population. Symptoms related to anaemia and associated morbidities are present in around 75% of adolescent girls (Panyang et al., 2018). In a case study, anaemia was found to be a leading contributor to maternal deaths in Assam’s tea estates, with 363 maternal deaths per 100,000 live births compared with 174 for the rest of India (Sachdev, 2018). The surveys also revealed that a maximum number of maternal deaths in the public health centres, community health centres, and district hospitals in upper Assam were from the tea tribe community. Gender-specified and age-stratified analysis showed the association of increased risk of hypertension with intake of tobacco in women, while consumption of locally prepared alcohol was an important risk factor for hypertension in both men and women. The practice of serving salted tea during working hours in heavy doses is making the tea workers vulnerable to killer diseases. Consumption of salted tea has also been said to be a cause of anaemia among women workers and risk of cardiovascular diseases

among men and women (Dibrugarh University 2017). Despite various health awareness programmes aimed at minimising the consumption of salt tea, the habit is yet to be stopped among the workers. Workers are not aware of nutrition as well as hygiene (Hazarika, 2012). Due to a lack of behavioural change communication regarding the use of proper sanitation facilities, even after having a facility at home, 38.9% of the tea plantation workers do not use the toilet. 16.2% wash hands with ash, mud and plain water after defecation. The same source of drinking water is accessible to domestic animals in 17.5% of households (Bora et al., 2018). The arrangement of clean and plentiful water and the habit of filtering water are almost absent, resulting in widespread waterborne diseases in the tea plantation areas. Water shortage also creates hygiene problems – for instance, women are forced to reuse inadequately washed menstruation cloths causing reproductive tract infections.

Drinking alcoholic beverages is an accepted way of life among tea garden workers as they are accustomed to the consumption of local drinks known as Haria or Sulai. Sulai is made from fermented molasses and often adulterated with calcium carbide, urea, methanol, and even used batteries, while haria is made from fermented rice. The preparation of these drinks is done in a very unhygienic manner. These are illegally made and traded inside the tea gardens. Consumption of such unhealthy drinks not only creates havoc in the lives of the workers but also increases their mortality rates. It is a major factor behind their miserable health conditions (Dibrugarh University 2017) and has a detrimental effect on the lives of their womenfolk. In many cases, children also get used to alcohol from an early age. Drunkenness often leads to fights, clashes, violence and disturbance of peace in the tea gardens. It leads to disharmony in their family affecting personal growth and mental well-being. The occurrence of domestic violence is rampant in the tea gardens caused by the excessive consumption of alcohol by both men and women (Dibrugarh University 2017). Physical assaults by drunken male members are a regular feature. Productivity is also affected in the workplace. It is estimated that only one per cent of the workers are active after attaining the age of 60 (Hazarika, 2012).

The tea plantation workers generally spend a substantial amount of their earnings at the cost of their family's needs on country liquor (Joseph, 2009; Roy, 2005). An in-depth cross-sectional study was conducted to assess tobacco and alcohol use among tea garden workers in Assam. A higher rate of alcohol and tobacco intake was found among those who had no formal education or were school dropouts or those parents were illiterate (Medhi et al., 2006a).

A study among tea garden women workers sampled in the Sonitpur district found that 72.25 per cent of the women

were illiterate (Devi, 2014). Overall, in the state, around 78% of female tea workers are either illiterate or can only sign their names to collect their wages (compared to around 40% of male workers) (TISS, 2019). Only 18 per cent of workers are aware of available welfare schemes for workers. (Hazarika, 2012). Most tea industry workers in Assam are not even aware of how their wages are calculated.

Early marriage is common in the majority of tea gardens. According to a study conducted by the Regional Resource Centre for North Eastern States, Ministry of Health and Family Welfare, Govt. of India, 43% of married women in the tea gardens are of 18 years or younger. 11% of girls in the age group of 10-15 years are married. This affects the health status of both mother and child. Most of these women workers are not aware of the significance of menstrual hygiene and that the usage of unclean clothes might lead to serious health issues (Dibrugarh University 2017). The tea garden workers are not aware of family planning measures and they do not feel its necessity. Multiple childbirth, which is a common feature of tea garden women, only adds to their difficulties. 80% of them have more than 5 children (Hazarika, 2012). The higher fertility rate in turn has its corollary reflection on the status of reproductive health of women. (Sengupta, 2009). Lack of awareness blocks women's enthusiasm for and access to adequate prenatal and postnatal care. Despite provisions of hospitals and other facilities provided by the management, many tea workers, especially the elder women, are in favour of childbirth at home with the help of dais or local midwives (Kar, 1993). Most of the women do not know about their pregnancy at an early stage or do not disclose pregnancy. Loss of daily wage may be a reason for it. 36% of the mothers do not initiate breastfeeding within the necessary first hour (National Health Systems Resource Centre, 2015)

In addition to tasks such as weeding, hoeing, transplanting, manuring, and pruning, men in the tea gardens also predominantly sprayed tea bushes with pesticides (Bhadra, 1985). Concerns arose in the later part of the twentieth century about the effects of these poisonous pesticides on the workers who sprayed them. This labor-intensive work caused significant discomfort to the workers' bodies when exposed to these substances. After the bushes were sprayed, the soil became laden with corrosive products, often causing blisters on the feet of workers who walked barefoot (Chatterjee, 2001). While spraying pesticides, the plantation workers typically did not know the name or type of the pesticides, their hazard category, precautions to be followed, details on handling emergencies such as spillage or direct exposure, or the names of antidotes. Pesticide sprayers often ate lunch without washing their hands after exposure to these dangerous chemicals (GNRTFN,

2016). Even adolescents were engaged in the spraying of pesticides.

Compared to the progress being made in today's world in areas such as entertainment, sports, and cultural exchange, this worker community has remained deprived of socio-economic and moral knowledge (Tasa, 2013). A lack of civic knowledge has led to much chaos in this worker community. They are unaware of individual rights in society and the nation, as well as various acts, laws, rules, and regulations. Communal harmony, peace, and discipline depend on such education (Tasa, 2013). In addition to mob lynching acts on the management and healthcare providers, superstitions have taken lives within the tea estates. The practice of superstitions like witch-hunting is still prevalent among the tea laborer communities. In some cases, a woman is branded as a witch if she is widowed or unmarried. People sometimes take pride in killing witches or resort to violent means to stop witchcraft, believing they are protecting their community from the so-called 'evil' (Kar, 1993). During the festival of light Dewali, they light the first lamp made of earth or green papaya inside their house. If a daaini (local witch) finds this first lamp outside the house, the household may be destroyed, according to their belief. The head of the household may die by vomiting blood. On that day, as per their belief, the daainis collect brooms, torn pieces of cloth, and female hair lying outside the house; dance naked at the smashan, the site of the funeral, and drink human blood from tender livers. Therefore, to protect the household, every family member rubs their hands, legs, and underarms with the oil from the first lamp (Kurmi, 1991). The practice of bej/oja is also prevalent, which they believe magically treats ailments, relationships, family disputes, bad fortune, and other matters. Almost all tea worker families believe in such faith healers, who provide prescriptions of tantra-mantra. They suggest worshipping viral diseases, storms, and all. The secret mantras of Kan Fuka are pronounced in the disciples' ears who hardly understand anything about it (Tasa, 2013).

It is found that among the tea labor households (living within the tea gardens) nearly 65 per cent of those whose fathers were working in the gardens have a job within the garden. Many of them start working at the age of 12-14 years. The employment of adolescents and child laborers as permanent workers is a special feature of the plantation industry. Non-adult permanent workers accounted for around 3.1 per cent of the total permanent workers in the tea industry as a whole (Bhowmik 1981/2002). The actual incidence of child labor is considered higher since many of them are employed as casual workers. Girls below the age of 18 years are recruited for plucking and packaging. The wages of this category of workers, known as chokri hazira, are less than the regular daily wages in the tea gardens

(Dibrugarh University 2017).

There is a significant proportion of out-of-school children in the tea gardens, standing at 45% as compared to the state average of 23% (UNESCO, 2003). The rate of missing children is also high among the tea tribe, although the reporting rate is less. Parents' poverty, low levels of education, and high levels of alcohol consumption influence their ability, motivation, and desire to support their child's education. They rarely take an interest in their child's education as only a minority of them have visited their child's school or met the teacher (Nomani, 2008). The most important factor contributing to the lack of interest in higher education is the availability of jobs within gardens as 'non-adult' workers. As children start supplementing the family income at an early stage, it lessens the burden on the parents. Many parents rather demand that their children be allowed to work in their 'ancestral occupation'. The mere availability of such an option to earn at an early age makes formal education less attractive even for children (Fernandes et al., 2003). Behind the reluctance of individuals and households to opt for occupational diversification also lies the significance attached to the garden as a 'way of life' and as a 'home'. Moreover, human security aspects, such as fear of social exclusion and discrimination along ethnic lines play a role in constraining the choices made by some households (Mishra et al., 2012). The emergence of small businesses near the labor lines, the holding of weekly markets, and the provision of basic amenities by tea garden management indicate that the laborers rarely need to leave the tea estate areas. From the management's point of view, such an arrangement creates a captive labor force.

The migrant population of the Assam tea plantation workers were composed of 3 different distinct linguistic elements such as the Kolarian-speaking (Ho, Munda, Santhal, Kharia, etc.) group, Dravidian-speaking (Oraon, Khond, Gond, Malpaharia, etc.) and the group speaking Oriya, Bengali and Hindi. After settling in the close-quartered tea garden colonies of Assam, due to extremely limited interaction with the outside world, bearing interior location, language barriers and dissimilarity in physical outlooks, they were isolated from the local population and as a result, the multi-tribe, multi-caste, multi-lingual society slowly started interacting among themselves in solidarity minimizing the ethnocultural barriers and communication gap. Hence, they started adopting a new but common language, which is an admixture of Assamese, Hindi and Bengali, now popularly known as Chah Bagisar Asomia (Tea Garden Assamese Language), or Sadani, or Sadri (Tanti, 2002). Over generations, they have used it with variations according to the dialects of their place of migration. Over longer holidays, students do not speak enough Assamese to retain what they have learnt in school, thus forcing teachers to spend

weeks reviewing and revising the syllabus of the previous school session. It is evident that the children use their home language when communicating with each other and that they switch to the school language when communicating with teachers (ASER, 2009).

A report submitted to the Ministry of Women and Child Development, Government of India by the Centre for Women's Studies, Dibrugarh University suggests that the majority of workers speak only Sadri as their medium of communication (73.70% in Dibrugarh and 62.70% in Tinsukia) and very few speak Assamese as the singular mode of communication, (0.30% in Dibrugarh and 1% in Tinsukia). However, a substantial percentage (13.7% in Dibrugarh and 24.70% in Tinsukia) were reported to be speaking both the languages of Sadri and Assamese, while others speak Hindi, Oriya, Sabar etc. (Dibrugarh University 2017). With their common language, they also have started celebrating a host of common festivals such as Dangoria Puja, Baghut Puja, Dharma Puja, Karam Puja, Menasha Puja, Sarun Puja, Kali Puja, Durga Puja, Tusu Puja, Madula Puja etc. in almost every month of the year with their traditional customs and systems. Karam puja for Mother Earth accompanied by 'Jhumur Nritya' and Tusu Puja dedicated to folk goddesses are the most popular ones among them.

Posters, loudspeaker announcements, printed leaflets, and special programmes on radio and television are part of the communication campaigns created in the state language and disseminated by the governments and the tea industry management. Such campaigns include awareness on sanitation, nutrition, maternal health, adult education, banking, drinking water filtration, family planning, waste disposal, educating girl children, prevention of alcoholism, skill development, disaster preparedness and other themes (Goduka & Das, 2021). To know the effectiveness of such campaign messages, it is necessary to know which media the target audience uses, at what times, for how long or how many times, and in what combination, in what preference. Therefore, a field survey among Assam tea plantation workers was planned to measure the effectiveness of different mass media tools in communicating awareness messages among them.

Methodology

The population of the sample survey was the tea plantation workers employed in the tea estates of Charaideo, Sivasagar and Golaghat districts in Assam. The sample size was 186. A structured schedule of 15 questions was prepared to gain insight into the effectiveness of mass media tools among Assam tea plantation workers. Only closed-ended questions were included because the survey is a quantitative study. Data collection was done with community participation to reduce apprehension of being examined or investigated. The interviews were taken in the Sadri dialect and Assamese

language. Although due to the lack of a script of Sadri, the questionnaire was in Assamese, the researcher, being a native of the tea plantation areas, explained the questions in Sadri, to the respondents who did not understand Assamese. The software package SPSS was applied to the Pearson Chi-Square test.

Table 1. Sampling methods

Stage	Description
A	Convenience Sampling of the districts.
	Districts were selected based on their high tea garden concentrated areas and familiarity with the researcher.
B	Purposive Sampling of the tea estates.
	Within the selected districts, the selection of tea gardens was made based on the size of the tea gardens, ownership of the tea gardens, and on the availability of permission/consent to access the workers' colonies, viz. the 'coolie lines'.
C	Simple Random Sampling of the tea plantation workers.
	The respondents were selected among the tea plantation workers within the selected gardens using Simple Random Sampling.
	Since written records of date of birth were not available in most of the cases, especially in this community, age estimation was applied.

Table 2. Indicator variables

S. No.	Indicator Variable
1	Seeing banners or posters within the last 6 months
2	Listening to programmes on tea workers on the radio
3	Watching and understanding government ads or public awareness announcements on television
4	Understanding loudspeaker announcements made in the tea estate area
5	Seeing government awareness messages during movie shows
6	Seeing and understanding government ads and announcements on mobile phone
7	Knowing government schemes through any media tool.

Table 3. Respondent structure

Category	Classification	Frequency	Percent	Valid %	Cumulative %
Gender	Female	141	75.8	75.8	75.8
	Male	45	24.2	24.2	100.0
	Total	186	100.0	100.0	
Age	Up to 18 years	38	20.4	20.4	20.4
	19 to 40 years	135	72.6	72.6	93.0
	Above 40 years	13	7.0	7.0	100.0
	Total	186	100.0	100.0	-
Education	No formal Education	23	12.4	12.4	12.4
	Class I to V	22	11.8	11.8	24.2
	Class VI to X	94	50.5	50.5	74.7
	Above X	47	25.3	25.3	100.0
	Total	186	100.0	100.0	-

Table 4. When did the workers see a poster or banner on public awareness/ scheme?

Classification	Frequency	Percent	Valid %	Cumulative %	95 % CI	
Within 3 months	14	7.5	7.5	7.5	3.70	11.35
3 to 6 months	17	9.1	9.1	16.7	4.96	13.32
6 to 12 months	110	59.1	59.1	75.8	52.01	66.27
Not in a year or do not remember	45	24.2	24.2	100.0	16.52	28.65
Total	186	100.0	100.0	-	-	-

Table 5. (If poster/banner seen) What were the poster/banners about? (Multiple options allowed)

Responses	Frequency	Percent	% of cases
Education	3	1.9%	2.3%
Health or nutrition	31	19.5%	23.5%
Cleanliness or sanitation	113	71.1%	85.6%
Women or children	8	5.0%	6.1%
Something else or do not know	4	2.5%	3.0%
Total	204	100.0%	120.5%

Table 6. (If poster/banner seen) Was there any picture or photo on the poster or banners?

Responses	Frequency	Percent	Valid %	Cumulative %	95 % CI	
No	5	3.5	3.5	3.5	0.0	4.5
Yes	136	96.5	96.5	100.0	93.4	100.0
Total	141	100.0	100.0			

Table 7. (If poster/banner seen) Did the workers read the text of the poster or banners?

Responses	Frequency	Percent	Valid %	Cumulative %	95 % CI	
No	106	75.2	75.2	75.2	66.4	81.1
Yes	35	24.8	24.8	100.0	17.6	32.0
Total	141	100.0	100.0	-	-	-

**Table 8.(If poster/banner seen) What mostly attracts the workers towards the poster/banners?
(Multiple options allowed)**

Responses	Frequency	Percent	% of cases
Image	131	83.4%	Colour
Colour	21	13.4%	15.1%
Text or slogan	5	3.2%	3.6%
Total	157	100.0%	112.9%

Table 9.(If poster/banner seen) Poster/banners are put up in which language? (Multiple options allowed)

Responses	Frequency	Percent	% of cases
English	13	8.8%	9.4%
Assamese	132	89.8%	95.0%
Tea tribal dialect or other or do not remember	2	1.4%	1.4%
Total	147	100.0%	105.8%

Table 10.Do the workers listen to special programmes on tea workers on the radio?

Responses	Frequency	Percent	Valid %	Cumulative %	95 % CI	
Yes	10	5.4	5.4	5.4	2.1	8.6
Listen to the radio but not programme on tea workers	17	9.1	9.1	14.5	5.0	13.3
Do not listen to the radio	159	85.5	85.5	100.0	80.4	90.6
Total	186	100.0	100.0	-	-	-

Table 11.Do the workers watch government ads or public awareness announcements on TV?

Responses	Frequency	Percent	Valid %	Cumulative %	95 % CI	
Yes, understand the ads	7	3.8	3.8	3.8	1.0	6.5
Watch TV, not seen such ads	49	26.3	26.3	30.1	20.0	32.7
Watch ads, do not understand much	43	23.1	23.1	53.2	17.0	29.2
No TV or do not watch	87	46.8	46.8	100.0	37.4	51.8
Total	186	100.0	100.0	-	-	-

Table 12.Do the workers understand the announcements made through loudspeakers?

Responses	Frequency	Percent	Valid %	Cumulative %	95 % CI	
Yes	109	58.6	58.6	58.6	51.5	65.7
No	26	14.0	14.0	72.6	8.9	19.0
No such announcement made	51	27.4	27.4	100.0	21.4	34.5
Total	186	100.0	100.0	-	-	-

Table 13.During movie shows in the tea estate, have the workers seen government advertisements or public awareness announcements?

Responses	Frequency	Percent	Valid %	Cumulative %	95 % CI	
No	127	68.3	68.3	68.3	57.6	71.5
Yes, understand	7	3.8	3.8	72.0	1.0	6.5
Yes, do not understand much	17	9.1	9.1	81.2	5.0	13.3
Do not watch movies or do not know	35	18.8	18.8	100.0	13.1	24.5
Total	186	100.0	100.0	-	-	-

Table 14. Have the workers seen any play or theatre in or around the tea estate area?

Responses	Frequency	Percent	Valid %	Cumulative %	95% CI	
No	170	91.4	91.4	91.4	86.7	95.0
Yes	16	8.6	8.6	100.0	4.5	12.7
Total	186	100.0	100.0	-	--	-

Table 15. Do the workers watch videos on the mobile phone?

Responses	Frequency	Percent	Valid %	Cumulative %	95% CI	
No	39.8	39.8	91.4	39.8	32.7	46.9
Yes	60.2	60.2	8.6	100.0	53.1	67.3
Total	100.0	100.0	100.0	-	-	-

Table 15. Do the workers watch videos on the mobile phone?

Responses	Frequency	Percent	Valid %	Cumulative %	95% CI	
No	74	39.8	91.4	39.8	32.7	46.9
Yes	112	60.2	8.6	100.0	53.1	67.3
Total	186	100.0	100.0	-	-	-

Table 16. (If videos watched) Do the workers come across government ads or public awareness messages on the phone?

Responses	Frequency	Percent	Valid %	Cumulative %	95% CI	
Yes, understand	43	38.4	38.4	38.4	29.2	47.5
Yes, do not understand	27	24.1	24.1	62.5	16.1	32.2
No or do not remember	42	37.5	37.5	100.0	28.4	46.6
Total	112	100.0	100.0	-	-	-

Table 17. Have the workers seen these facilities around the tea estate? (Multiple options allowed)

Responses	Frequency	Percent	% of cases
Auditorium	16	13.7%	14.3%
LED projector	4	3.4%	3.6%
Public library	10	8.5%	8.9%
None of these	87	74.4%	77.7%
Total	117	100.0%	104.5%

Table 18. How do the workers know about government schemes etc.? (Multiple options allowed)

Responses	Frequency	Percent	% of cases
Poster or banner	28	19.4%	28.9%
Newspaper	9	6.3%	9.3%
TV	16	11.1%	16.5%
Mobile phone	5	3.5%	5.2%
Loudspeaker	9	6.3%	9.3%
Friends or others	71	49.3%	73.2%
Local market	6	4.2%	6.2%
Total	144	100.0%	148.5%

Data Analysis

The study reveals that 16.52 to 28.65% population have not seen or do not remember seeing any poster or banner on public awareness in a year. Those who saw, mostly (around 59.1%) did so within 6 to 12 months of the survey. Out of them, most (71.1%) were about cleanliness or sanitation. 93.4 to 100% population glanced upon some picture or photo on the poster or banner. 66.4 to 81.1% population did not read any text on the poster or banner that they saw. Image mostly (83.4) attracts them towards the poster or banner while text/ words/ slogans only attract 3.4% people, 89.8% of which were in Assamese. 80.4 to 90.6% population do not listen to the radio, while 5 to 13.3% listen to the radio and still have not heard any special programme on tea workers. 20.0 to 32.7% population do watch television but have not seen any public awareness announcement on TV, while 17.0 to 29.2% have watched such ads/announcements and yet do not

understand much. 51.5 to 65.7% population understand the announcements made through loudspeakers in the tea estate area. 57.6 to 71.5% population have not seen any public awareness announcement during (beginning/ interval) movie shows in the tea estate area, while 5.0 to 13.3% have watched such ads/announcements and yet do not understand much. 86.7 to 95.0% population have not seen any play or theatre around the tea estate area. 53.1 to 67.3% have watched a video on the mobile phone. Among them, 29.2 to 47.5% have come across public awareness messages on the phone. 74.4% of respondents have seen none of the auditorium, LED projector or public library in or around the tea estates. We also observed with Pearson Chi-squared statistic χ^2 at appropriate degrees of freedom, corresponding to $p < 0.005$ that there is strong evidence of an association between gender, age and educational classification of the respondents and their responses.

Measurement of Effectiveness

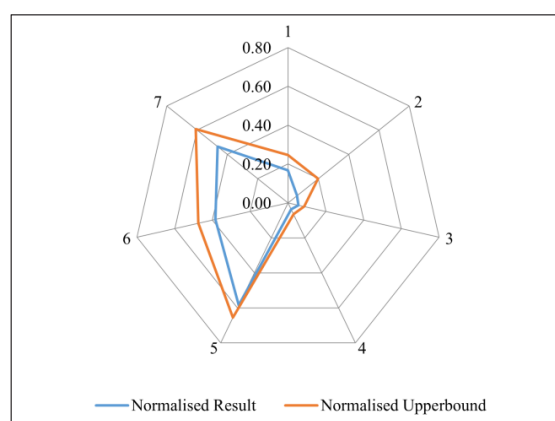


Figure 1. Measurement of the effectiveness of media tools among Assam tea plantation workers

Table 19. Measurement of the effectiveness of media tools among Assam tea plantation workers

Indicator variable	Sample result	Estimated upper bound at 95% CI	Normalised result	Normalised upper bound
I1. Seeing a poster or banner in 6months	16.7	24.7	0.17	0.25
I2. Listening to tea workers' programmes on the radio	5.4	8.6	0.05	0.09
I3. Watching and understanding awareness announcements on TV	3.8	6.5	0.04	0.07
I4. Understanding loudspeaker announcements played in the tea estate area	58.6	65.7	0.59	0.66
I5. Seeing awareness messages during movie shows	6.0	19.8	0.06	0.20
I6. Seeing and understanding government ads and announcements on mobile phone	38.4	47.5	0.38	0.48
I7. Knowing government schemes through any media tool	46.5	61.0	0.47	0.61
Measured Effectiveness			0.25	0.33

Findings

The research findings indicate that the effectiveness of mass media tools among the examined population has been notably low. Apart from seeking entertainment, tea plantation workers seldom engage with the media to obtain information. The study discloses that nearly one-third of Assam tea plantation workers either have not seen or cannot recall viewing any posters, banners, or public awareness campaigns in a year, with the majority of these materials focusing on cleanliness or sanitation. Approximately 3 to 4 out of 5 individuals under scrutiny did not read any textual content on the displayed posters or banners.

In the instances where individuals did encounter posters or banners within a year, their attention was predominantly drawn to images rather than the accompanying text, words, or slogans. Furthermore, these posters were primarily in the state language. The investigation reveals that radio, in its current format as a communication tool, has diminished in popularity, and radio programs tailored exclusively for tea workers fail to capture their interest. Roughly one-fourth of those exposed to government advertisements or public awareness announcements on television find them challenging to comprehend. This contrasts with the fact that over half of the studied population understands announcements conveyed through loudspeakers in the tea estate area.

This emphasizes the significance of contextual familiarity in facilitating the population's comprehension of messages (Goduka & Das, 2023). More than half of the population has not observed any government advertisements or public awareness announcements during movie shows in the tea estate area. The occurrence of play or theatre activities around the tea estate area is infrequent. The majority of the population prefers watching videos on mobile phones. It's worth noting that respondents were not queried about phone ownership; therefore, this data includes those who have access to others' phones. Among them, over a quarter have encountered government advertisements or public awareness messages on their phones.

Three out of four workers have not witnessed any auditorium, LED projector, or public library in or around the tea estates. Half of the individuals studied relied on friends or others for information about government schemes or benefits. Importantly, all these findings hold true regardless of the gender, age, or educational classification of the respondents.

Results

The evaluation of mass media tools' efficacy among Assam tea plantation workers has been quantified on a scale of 0 to 1, with 0.5 established as the benchmark for average

effectiveness, relying on seven indicator variables. The effectiveness matrix reveals that, despite setting 0.5 as the average effectiveness threshold, none of the indicators, except for indicator 5 (loudspeaker), which serves as a local arrangement primarily for tea estate-related messages rather than a conventional mass media tool, managed to attain it.

Consequently, the survey outcomes underscore the necessity for a novel methodology and approach to cultivate a completely different communication experience for Assam tea plantation workers, aiming to enlighten them as informed citizens.

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