



Spatial Dynamics of Vendors' Space-Sharing Under the Influence of Natural Calamities in the Coastal area of Puducherry Municipality

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Abstract:

Vendor survey was conducted in some selected wards (no.4,12,20,39) of Puducherry municipality on the basis of 100 respondent vendors surveyed in Puducherry, this study was conducted to gather information that how space is shared among the local vendors in the concerned area. All the figures are drawn from the primary survey, 2024. Here we are dealing with age-sex composition, qualification status, groups of educational qualification, number of earning members in the family, monthly income in the family, family income structure, types of stall, stall condition, stall occupied area, financial support is provided or not to them, duration of living in this area, time of using the beach, type of affecting hazard, loss of assets of respondent vendors during hazard, types of effects in stall during hazards, process of handling general hazards in Puducherry, process of handling extreme hazards in Puducherry, precautionary measures taken by the respondent vendors, kind of alert during hazards, problems faced by respondent vendors, perception study of the respondent vendors.

Keywords: *Spatial Dynamics, Vendors, Space-Sharing, Natural Calamities, Coastal Area, Puducherry Municipality.*

Introduction:

The coastal area of Puducherry is a key socio-economic environment at which local sellers, tourists, locals, and the elements of nature interact in a continual manner. Sellers in this locality are heavily relying on the beach and the surrounding coastal areas to their means of earned income. These areas are shared by various stakeholders; they are not utilized by one group, as there are various purposes and occasions when they are used by different groups. This type of spatial sharing establishes an active interaction between the work of humans and nature. Meanwhile, coastal locations are extremely susceptible to natural disasters including cyclones, storms, precipitation, and tsunami.

Thus, this research paper tries to comprehend the experiences of vendors in sharing and utilizing the coastal spaces within the Puducherry and the impact of natural hazards on their socio-economic status and space planning.

According to the Dictionary of Human Geography, social space is a continuous area occupied and used by the individuals. Those individuals have particular approach about the area. Social space includes an area, the interactions among the individuals in that area, the social institutions and their structures etc.

Analysis of Sharing of space or shared space is the major thrust in this work, the concept is dynamic and is opposed to single use of a space. The concept can thus be defined as a process by which a same space that is perceived differently by different social groups and is shared and used differently by different individuals according to their own motives.

Significance of The Study-

The relevance of the study is that it attempts to relate the notion of spatial sharing to the disaster vulnerability within a coastal urban location. Street vendors constitute a component significant to informal economy and are significant to local economy based on tourism in Puducherry. However, being important, they tend to be overlooked in the impacts of urban planning and the disaster management policies.

This research is useful in bringing into focus, the livelihood issue experienced by the vendors owing to frequent occurrence of natural disasters. It also gives a sense on how the space of coastal areas is used, fought, and changed with time by the vendors. The results can be applicable in disaster management departments and municipal authorities in planners to develop more inclusive policies to protect vendors, prepare against hazards, and manage the coastal space sustainably.

Statement of the Problem -

The coasts of Puducherry are also exposed to natural hazards often causing serious problems to local vendors who use the coasts as a source of livelihood. The critical issue that was addressed in the current study is the fact that the vendors are increasingly becoming vulnerable because of reliance on shared coastal areas that are prone to hazards. Therefore, the issue presented through this study is to investigate-“ Spatial Dynamics of Vendors’ Space-Sharing Under the Influence of Natural Calamities in the Coastal area of Puducherry Municipality”.

Objectives

1. To find out the Socio-Economic Condition Of Vendors.
2. To find out the impact of Various natural Calamities On the Vendors.
3. To find out the Precautionary Measures taken by the Vendors for Natural Hazard.
4. To Evaluate Vendors’ Perception on Puducherry Municipality.

Hypothesis

The hypothesis of this work is that there has been massive scale sharing of space along the coastline of Pondicherry and Natural Calamities such as Cyclone and Tsunami affecting their livelihood, Stall location, and daily Economic activities.

Methodology-

Pre field

1. **Literature review:** A thorough study of previous literatures available on Pondicherry was done based on which the theme of the work was selected,
2. **Preparation of questionnaire:** Questionnaire to survey for vendors along the Coastal area of Puducherry Municipality
3. **Secondary data collection:** Secondary data were collected from available District Census handbook and other previous reports on Pondicherry.

Field work

1. **Primary surveys** were done in groups, and socio economic data were collected from the local people and vendors. Surveys were also done to collect data on tourist profile,
2. **Antique maps** were collected from museum,
3. **Careful preparation** of master table was done based on the collected data.

Post field work

1. This included analysis and interpretation of primary and secondary data towards the successful completion of the said field report,
2. Ms Excel was used in the said analysis and preparation of the diagrams.

Study Area-

The union territory of Pondicherry is located between 11°46' and 12° 3' North latitude and between 79°36' to 79°53' east longitude. It consists of 4 coastal regions viz- Pondicherry, Karaikal, Mahe and Yanam. Pondicherry and Karaikal are situated on the east coast of Tamilnadu while Yanam in Andhra Pradesh while Mahe on the west coast of Kerala. However our study area is concerned over only Pondicherry unit which is the capital of this union territory located on the Coromondal coast of Bay of Bengal, about 162 km south of Chennai.

DISCUSSION AND ANALYSIS

SOCIO-ECONOMIC CONDITION OF VENDORS

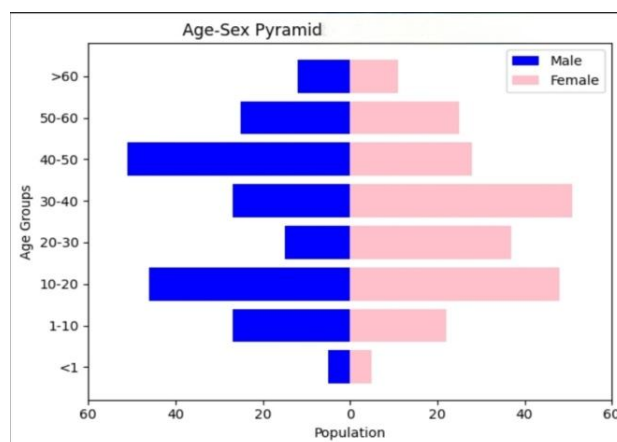


Fig no. 1- Age-sex Pyramid

Age-sex composition

The age-sex composition of the respondents has been represented by an age-sex pyramid. The pyramid diagram (Fig no. 1) has been divided into two sections: one for males and the other for females. So, from the given diagram, it is quite clear that the percentage share of male and female population in young age groups (from 0-29) are almost equal, but the male population share is slightly higher than females. In the middle age group (from 30-50), the percentage share of female population is higher than the percentage share of the male, and in the age above 50, the percentage share of male population is higher than the female population share. The most important reason behind such a situation is the male-dominating society of India, which in turn only prefers a boy child, and sometimes an unhealthy condition of females also leads to their low percentage share.

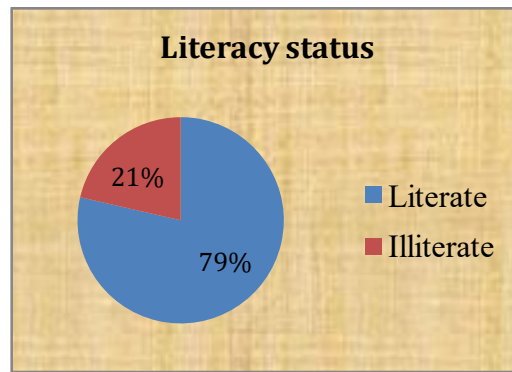


Fig no. 2- Literacy Status

Literacy status:

The pie diagram(Fig no. 2) shows the total number of literate and illiterate population among the respondent vendors in fig. From the given diagrams it is clear that literate population is comparably higher than the illiterate ones, this is so because of the reason that, people are now a days are aware of importance of education and it might be easier to access education in the concerned area.

The relation between literate and illiterate population to the total population is represented by two Lorenz curves(Fig no. 3), the first one shows the relation between cumulative percentage of total and cumulative percentage of literate population, literate population is slightly deviated

From the line of equal distribution, Thus it can be said that the distribution of cumulative percentage between literacy rate and total population tends to go upward to the equal distribution line which show almost equal distribution of literacy among the respondents and the second curve shows the deviation of illiterates from line of equal distribution, it can be said from the observation that the line of concentration of illiterate population is highly deviated from the line of equal distribution.

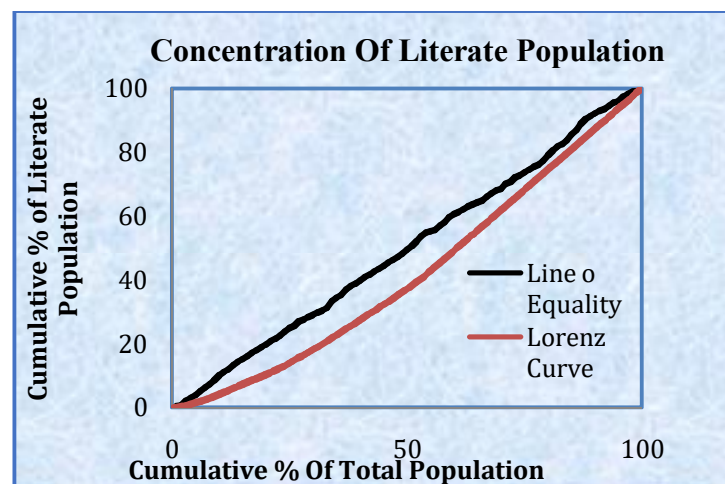


Fig no. 3- Concentration of Literate Population

Interpretation of Literate Population :

Lorenz Curve can be drawn to show the disparity of population from equal distribution line. In the 'X' axis shown cumulative % of total population and 'Y' axis can be shown cumulative % of literate population. In this picture the derivation of literate population is less because most people in Pondicherry region are literate. That causes Lorenz Curve is showing very less deviated from equal area distribution line. In this region high facility of education system that causes disparity % of literate population is low.

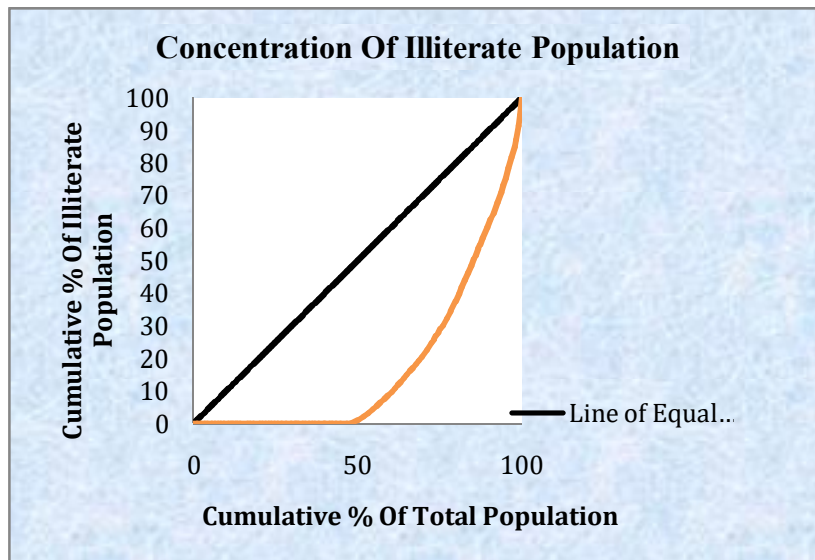


Fig no. 4- Concentration of illiterate Population

Interpretation of Illiterate Population:

In this figure (Fig no. 4) the derivation of Illiterate Population is high because most of the people in Puducherry region are literate. That causes Lorenz Curve is showing very high deviated from Equal Area Distribution Line. In this region high facility of education causes the illiterate population are not present largely in this entire Puducherry Municipal Area.

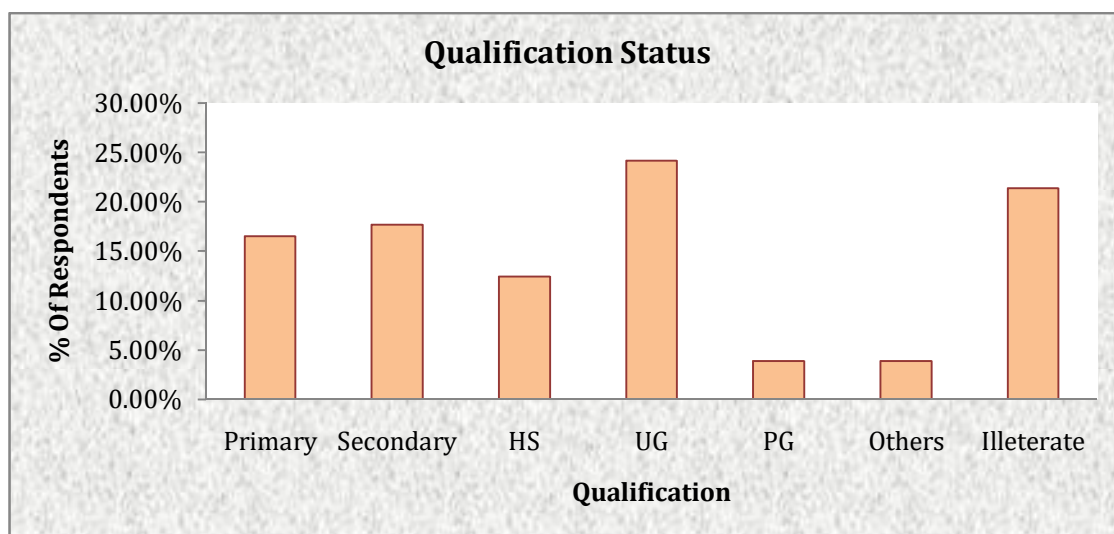


Fig no. 5- Qualification status

Types of qualification:

A bar diagram has been used to represent different types of qualification among the respondent vendors in diagram. Thus, the doughnut diagram has been divided into 7 sectors each one represent different levels of qualification namely primary, secondary, under graduate, post graduate, others and illiterates. It can be said from the primary data analysis that the highest percentage of 24.14% is shared by the under graduates, followed by illiterates 21.30%, secondary education 17.70%, primary education 16.55%, higher secondary education 12.41%, but it is quite surprising to see that post graduate and illiterate population shares same percentage that is 3.91%. So, from the above analysis it can be said that most of the vendors have completed their under graduate degree which is very important now-a-days to sustain life.

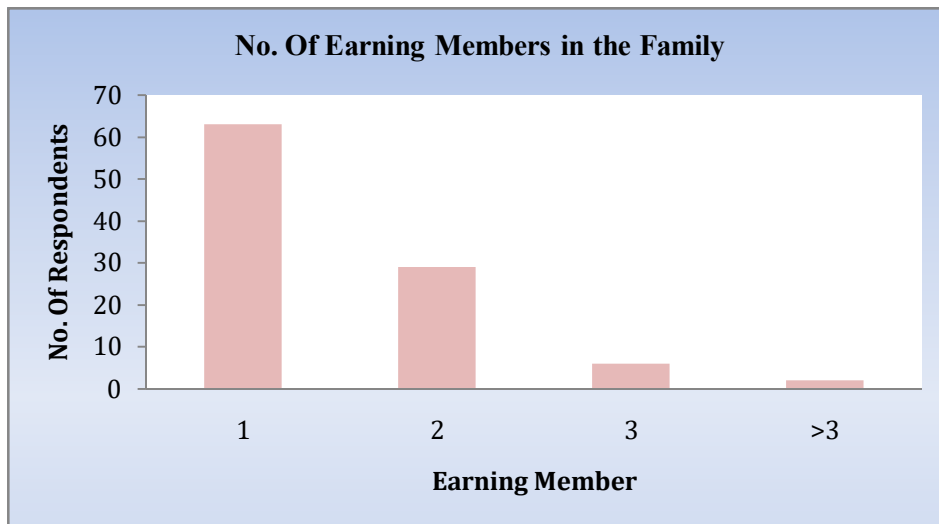


Fig no. 6- No. of Earning Members in the family

Number of earning members in the family:

A bar diagram has been used to represent the number of earning members in the family in diagram. According to this diagram we can see that majority of respondent's family have only one earning member more than 60%, 30% of families have two earning members and rest of families have more than two earning members. It may be because of that now a days educated woman are also pursuing jobs to earn their living and not get dependent on others. From the survey it is found that most of the people depend on the sea and the coastal area for their daily life earnings. So it can be easily said that the sharing of space in the coastal area by the local people in the sector of earning money is recognizable.

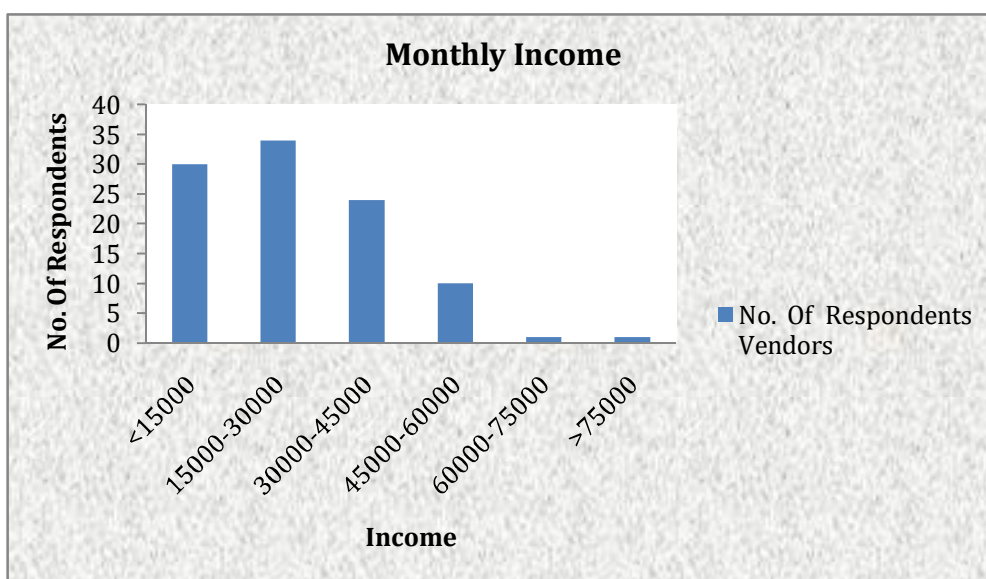


Fig no. 7- Monthly income

Monthly income:

Here with this columnar diagram we tried to represent monthly income of the respondent vendors. Maximum number of vendors has monthly income between 15000-30000 and least number of respondents have monthly income more than 75000. A large number of respondents have their income level below rs.15000, maximum respondent vendors have their monthly income between 15000-45000 it is because of the reason

that maximum family has only one earning member. The space they share for earning is very important as because most of the vendors have their stalls and shops at the beach or near the beach area.

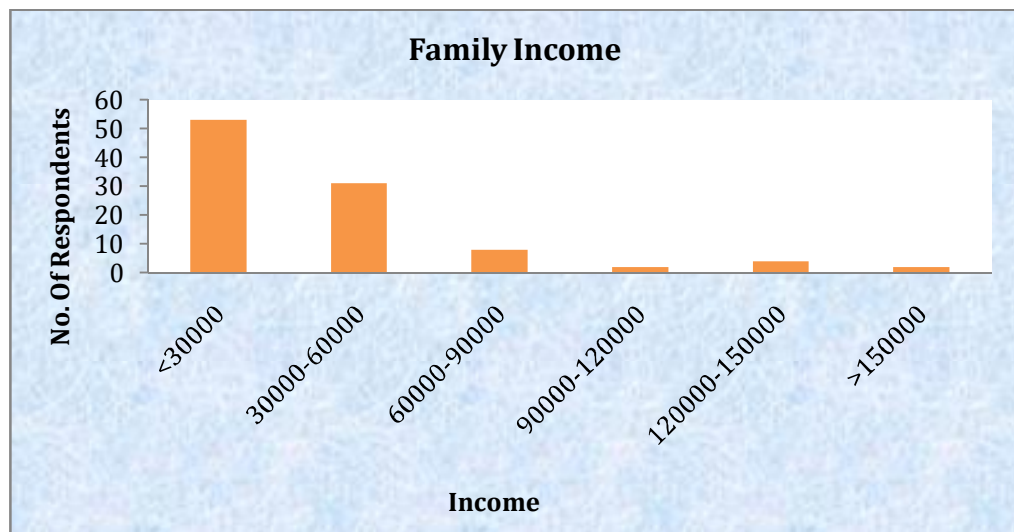


Fig no. 8- Family income

Family income:

A columnar diagram has been used to show the family income structure of the respondent vendors in diagram. Maximum number of vendors having their monthly income below rs.30,000 and rs.30,000-60,000, 10-20% of respondent vendors having their family income more than 60,000, this diagram of their family income clearly shows that the dependency ratio is high, from the above data we also get to know that maximum families of vendors have only one earning members also it highlights the space sharing of the people. This is so because most of the vendors’ income is totally depended on the beach and on tourism.

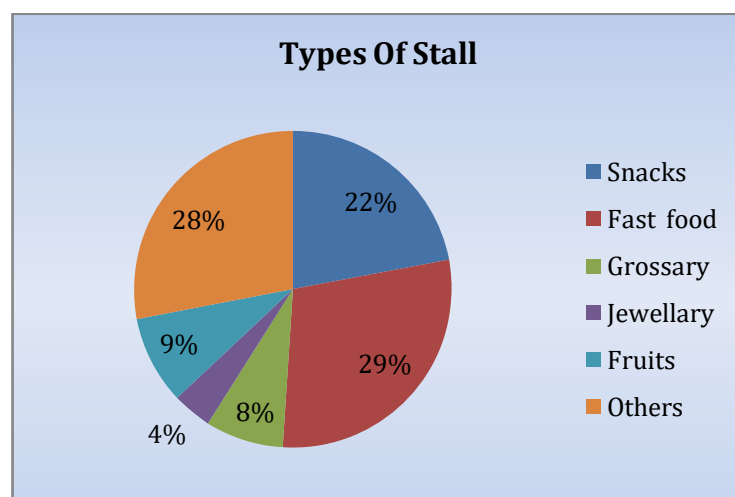


Fig no. 9- Types of stall

Type of stall:

A pie diagram has been used to represent the types of stall in the concerned area in diagram. According to our survey in Puducherry we came across different stalls, which were of different natures some were of snacks, fast food, grocery, jewellery etc. Among them about 22% sells snacks, 29% stalls are for selling fast foods, 8% are for grocery items and other 4% and 9% are selling jewellery and fruit respectively and 28% comprises for others. Most of the stalls are situated at the beach or near the coastline.

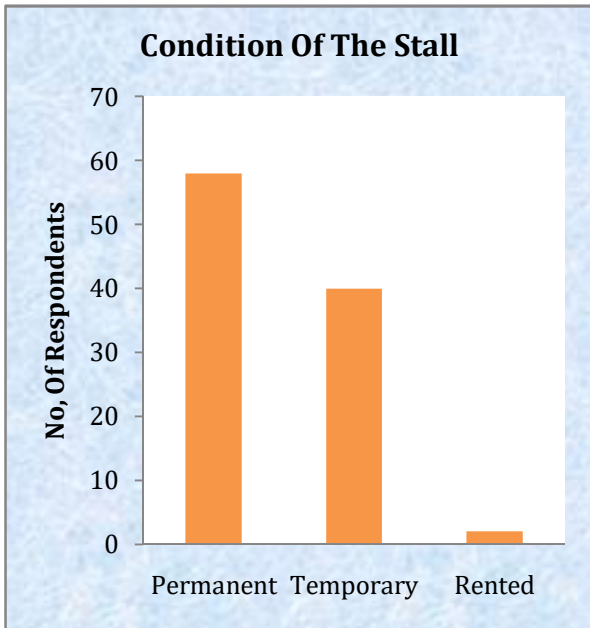


Fig no. 10- Condition of stall

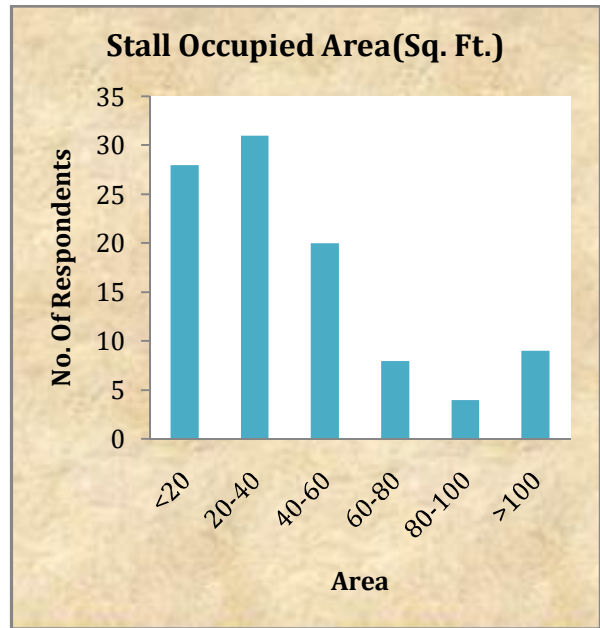


Fig no. 11- Stall occupied Area (sq.ft)

Stall condition:

A bar diagram has been preferred to represent the stall condition of the study area in diagram. From this bar diagram, it is prominent that among the surveyed 100 stalls, 58% stalls are permanent, 40% are temporary and rest 2% are rented. So it is clear that most of the vendors are having their permanent stall, and the stalls are at the beach area which is sharing the space with the nature or with natural environment.

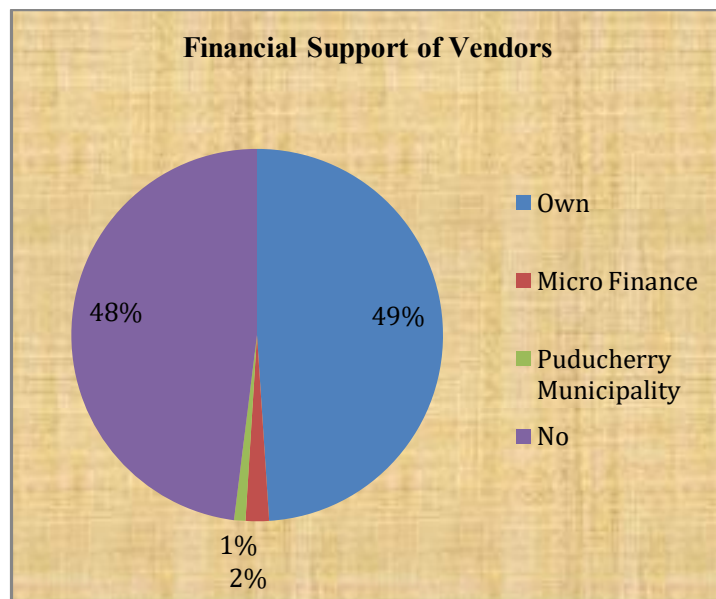


Fig no. 12- Financial support of vendors

Financial support to the vendors:

A doughnut diagram has been used to show the mediums of financial support to the respondent vendors of the concerned area. From our survey in Puducherry we have found that the most of vendors built their stall by their self-perseverance. There were no help provided by the government, it is almost 49%, but some stalls are built by the help of Puducherry municipality, it was a very mere amount provided by them provided to only 1% of the vendors.

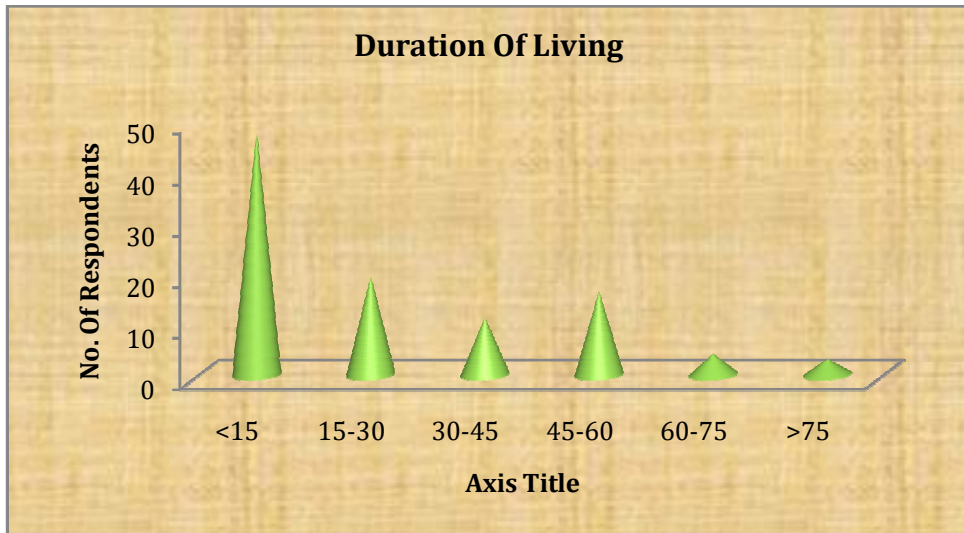


Fig no. 13- Duration of living

Duration of living:

A cone diagram has been used to represent the duration of living of the respondent vendors in the concerned area in diagram. According to this cone diagram(Fig no. 13) it is prominent that a most of the vendors are living in this area for more than 15 years and it's about 45%, about 25% are living for 15 to 30 years, very low amount of respondent vendors are living here more than 60 years.

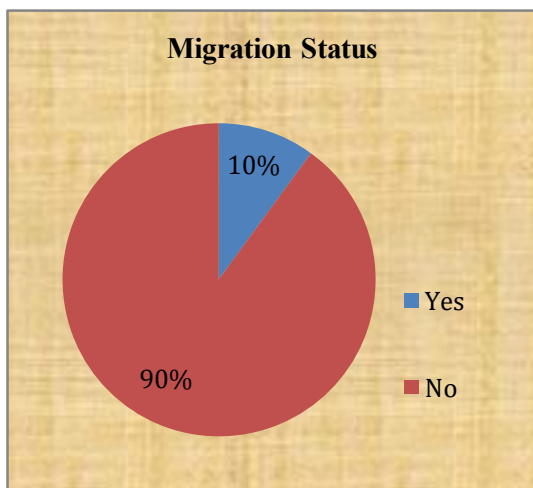


Fig no. 14- Migration status

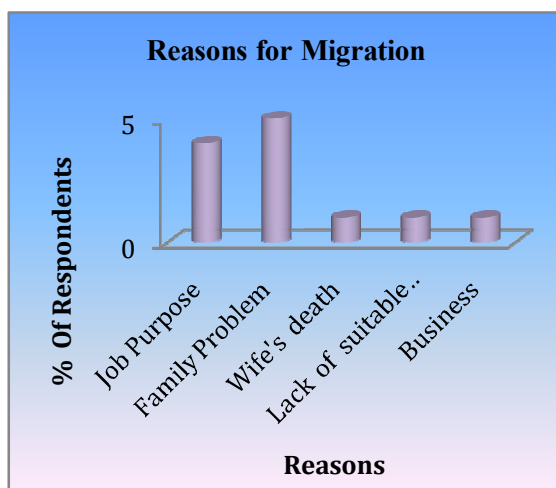


Fig no. 15- Reasons for migration

Migration status and reasons for migration:

A pie diagram (Fig no. 14) has been used to show the migration status and the respective reasons for the migration in diagram. It can be seen from the diagram that most of the vendors of Puducherry are non-migrated it is about 90% rest of the vendors are migrated from the neighbouring areas, about 10% vendors are migrated. According to the vendors they are migrated due to some reasons most of the vendors are migrated for job purpose, some are migrated for family reasons and wife's death, lack of suitable salary, business, this has been shown by the bar diagram (Fig no. 15). The duration of living of the vendors also indicate that they have shared the coastal space for a long period of time and therefore they have accommodated with the costal nature preferably.

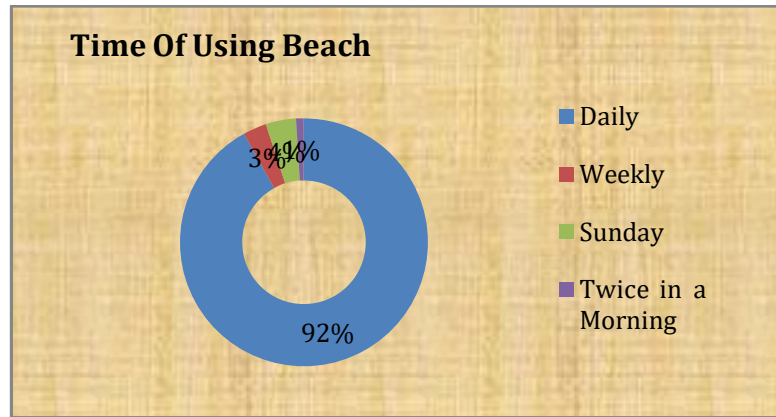


Fig no. 16- Time of using beach

Time of using beach:

A donut diagram(Fig no. 16) has been considered to show the time of using beach by the respondent vendors. According to this diagram it is clear that 92% vendors use the beach on a daily basis, 3% use the beach on a weekly manner and 4% use beach only on Sunday's, and about 1% use twice in a month. This represents the space sharing concept in a high manner. From the survey it is found that most of the people use the beach area daily for their business and other purposes.

IMPACT OF VARIOUS NATURAL CALAMITIES ON THE VENDORS

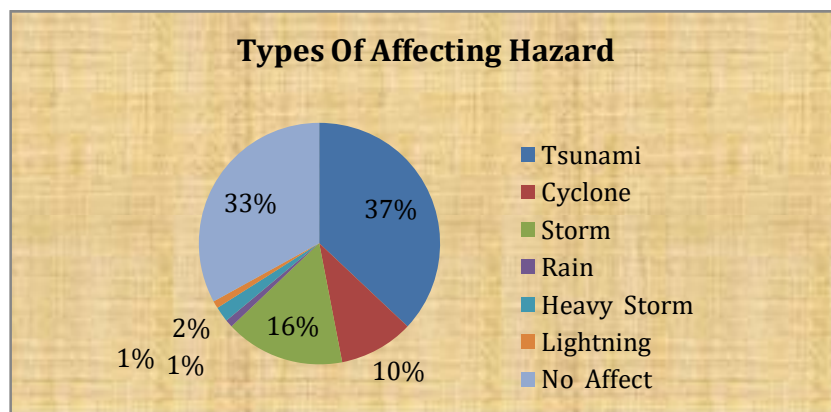


Fig no. 17- Types of Affecting Hazard

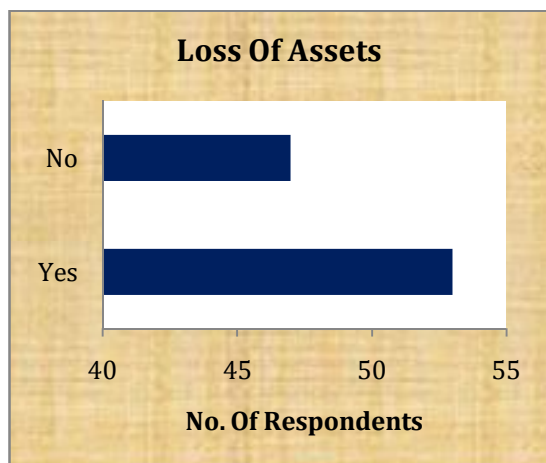


Fig no. 18- Loss of Assets

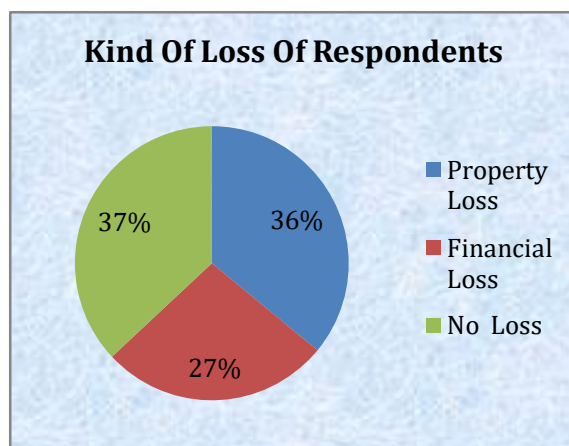


Fig no. 19- Kind of loss of respondents

Type of affecting hazard, Loss of assets during hazard and Kind of losses:

A pie diagram(Fig no. 17) has been used to show the different types of affecting hazard in the concerned area. The types of affecting hazards are tsunami, cyclone, storm, rain, heavy storm, lightning etc. Most affected hazard is tsunami it's about 37% which is then followed by storm that is 16%, cyclone which is of 10% share,2% for lightening and 1% for each heavy storm and rain respectively.

According to the bar diagram (Fig no. 18) it is notified that most of the vendors are affected by hazards which is about 53% and remaining percentage (47%) of the vendors are not affected by hazards.

The pie diagram (Fig no. 19) shows the kind of loss experienced by the respondent vendors. The diagram shows that 36% of vendors has lost their property in hazard and 27% of vendors has gone through are financial loss due to the hazards and rest of 37% vendors have not experienced any loss.

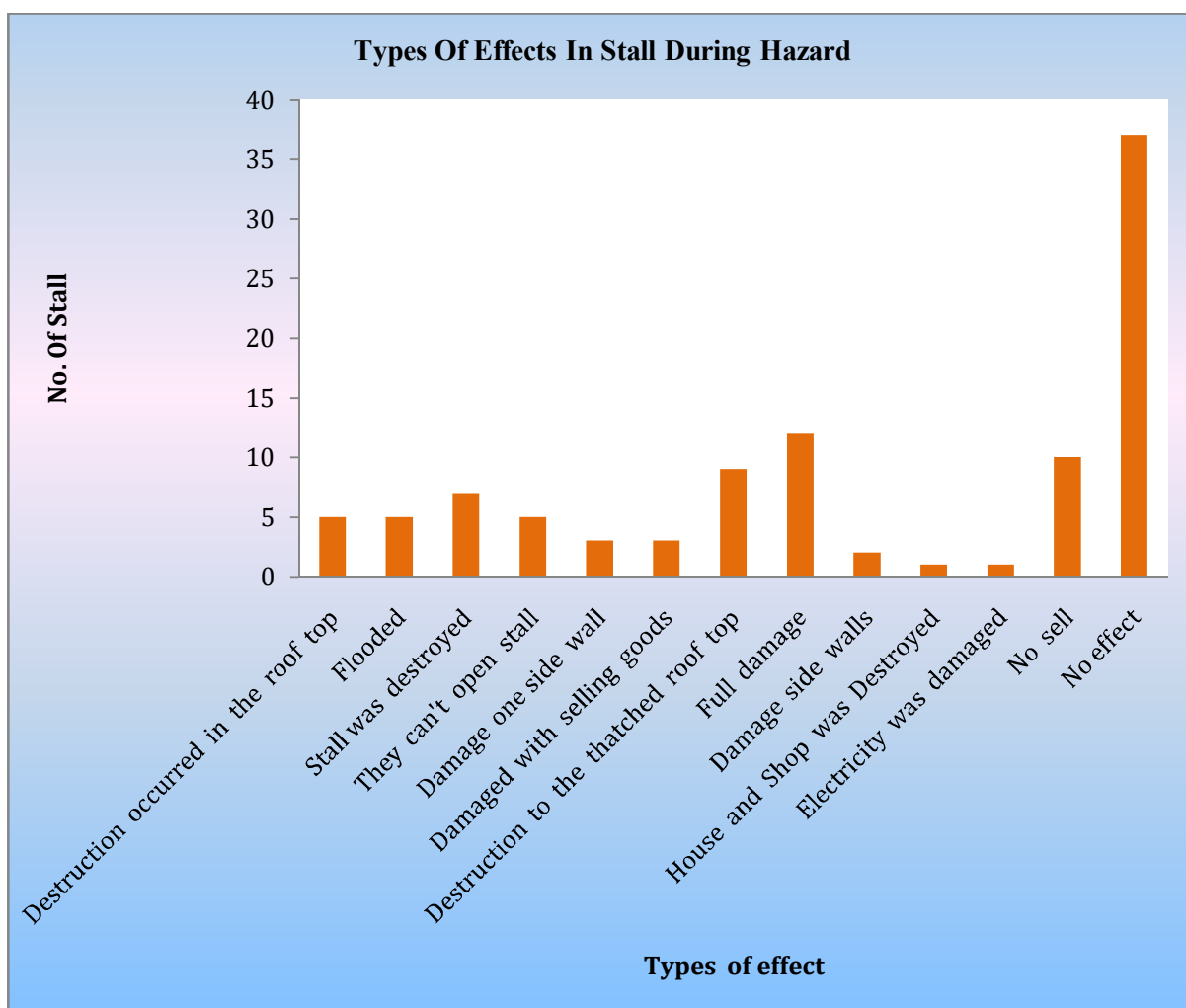


Fig no. 20- Types of effects in stall during hazard

Types of effects in stall:

A bar diagram(Fig no. 20) has been used to represent the types of effects in stall in diagram. In our study area, Puducherry, we have found that more than 35% of the stalls do not get affected by natural hazards but about 15% stalls get fully damaged by hazards and only 10% of the stalls get damaged related to the rooftop of the stalls, the damages related to the walls of the stalls and electricity is also there in small percentages, the damages of selling goods are less than 5%, there are about 5% of shopkeepers who could not open the shops during the hazards.

PRECAUTIONARY MEASURES TAKEN BY THE VENDORS FOR NATURAL HAZARD

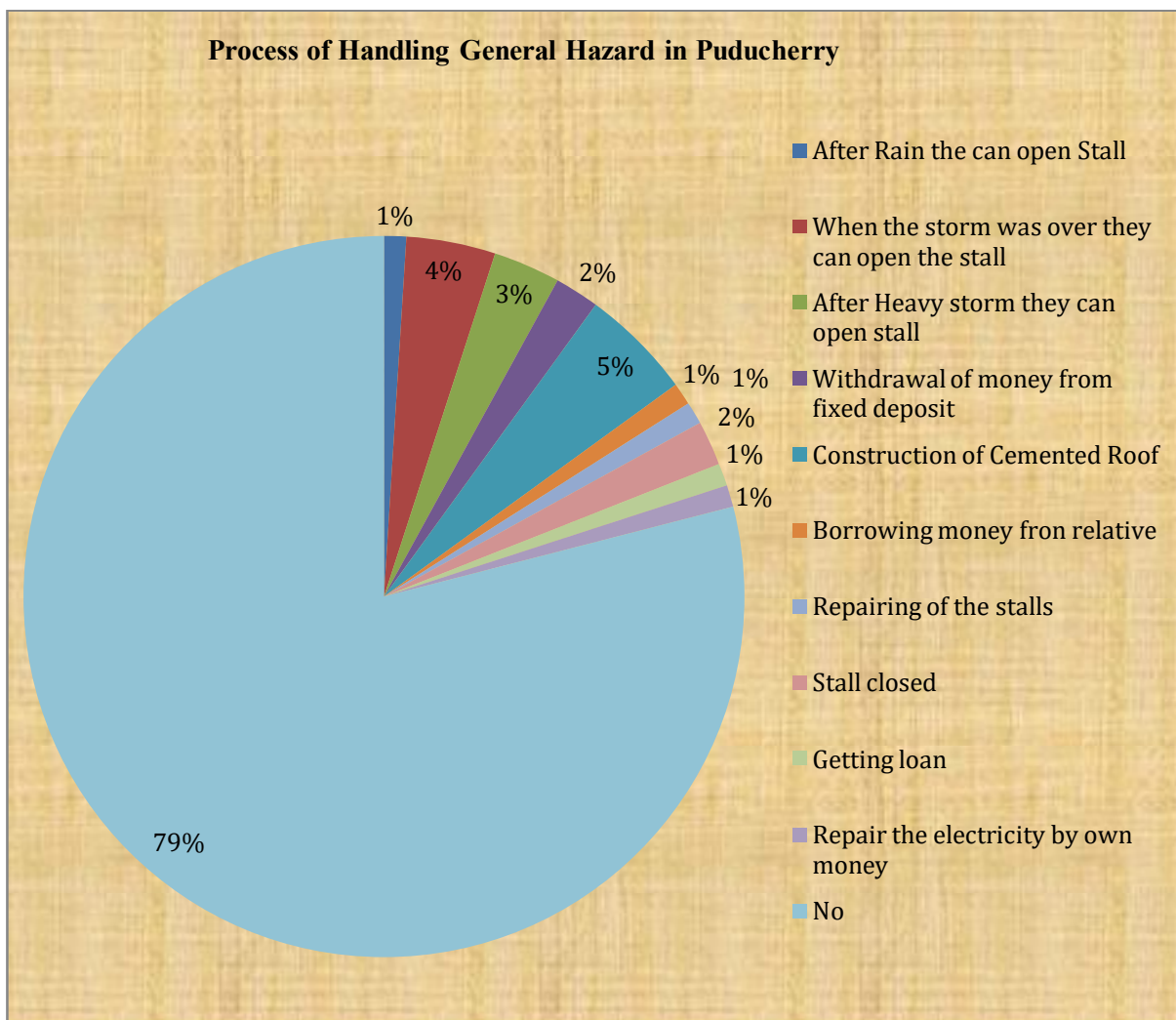


Fig no. 21-Process of Handling General Hazard in Puducherry

Process of handling general hazards:

A pie diagram (Fig no. 21) has been chosen to represent the processes of handling the general hazards faced by the respondent vendors in diagram. It is observed that the vendors near the shore areas have better knowledge about the process of handling general hazard condition. There are some stalls near the beach which are not permanent so that they have the option to open the stall after the effects of hazard gets over without having any major damages, they also have the option to withdraw money from their fixed deposits or loans or having money from their friends to recover the damages done to their stalls if any but this kind of vendors are very few in number most of the vendors have no idea how to handle the situation. Therefore on the basis of the primary survey data a pie diagram is drawn which shows that 79% of vendors gave the answer "No" to the question as they don't know how to handle the situation 5% had constructed cemented roof to reduce damages and 1% of vendors applies the other different options such as getting help from others States, after cyclone they repair the stall by their own money, getting loan from bank, repairing, construction of new Stall, Move to another place.

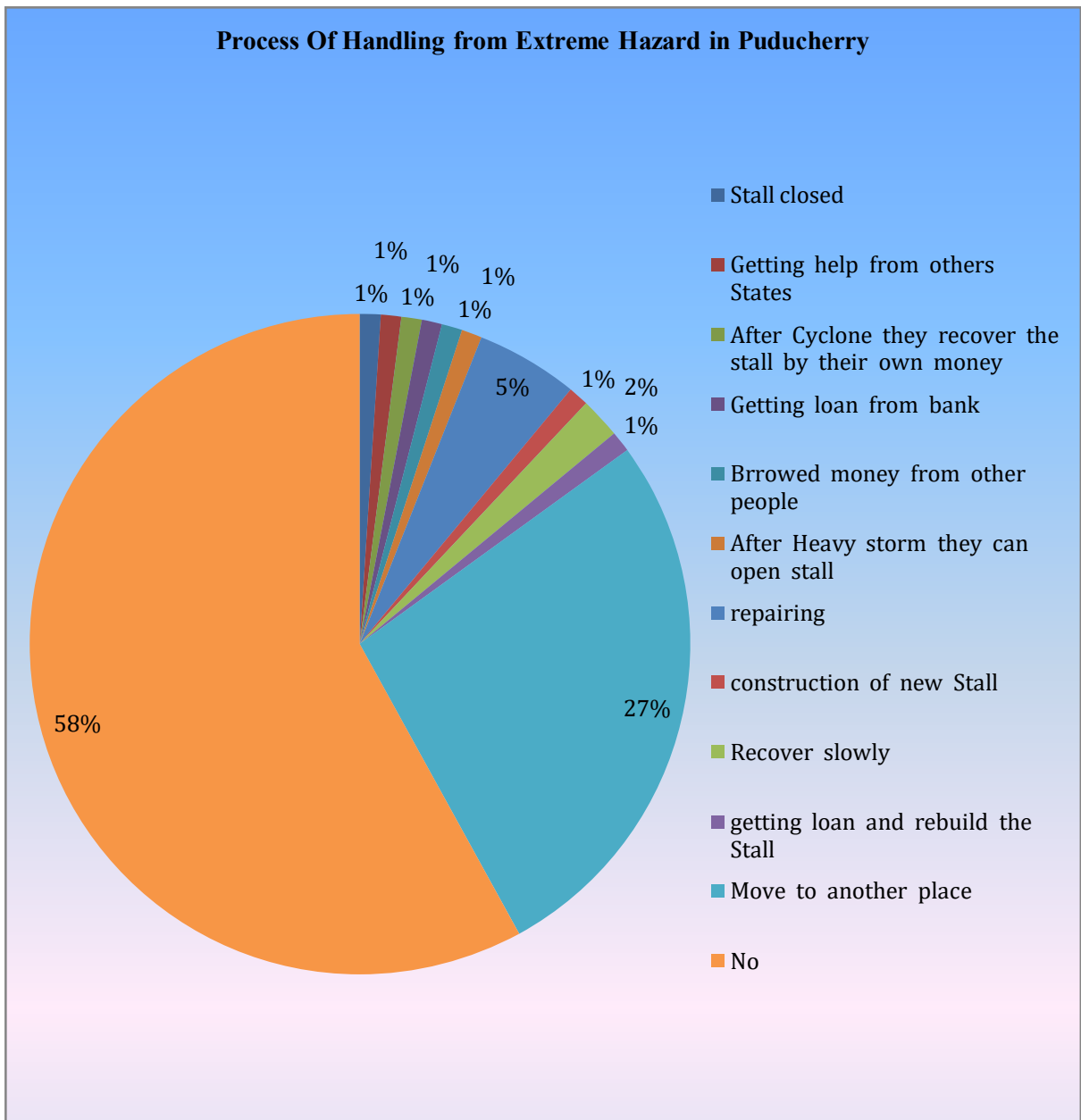


Fig no. 22- Process of Handling from Extreme Hazard in Puducherry

Process of handling extreme hazards:

A pie diagram(Fig no. 22) has been used to show the process of handling the extreme hazards faced by the respondent vendors in diagram. It is observed that there are number of cases of extreme hazard condition in Puducherry. The vendors near the coastal areas and also near the

beach know different process to handle the extreme hazard conditions. Such as getting help from others States, after Cyclone they recover the stall by their own money, borrow money from other people, after heavy storm they can open stall, repairing, construction of new Stall, recover slowly, getting loan and rebuild the Stall, move to another place etc. but most of them did not have any idea to handle the situation. Therefore on the basis of this primary data a pie diagram is constructed which shows that 59% people did not have any process to apply to handle the situation or they don't know what to do, 27% of vendors borrowed money to recover the situation, 5% closed the stall in hazard conditions and 1% applies other different options as mentioned previously.

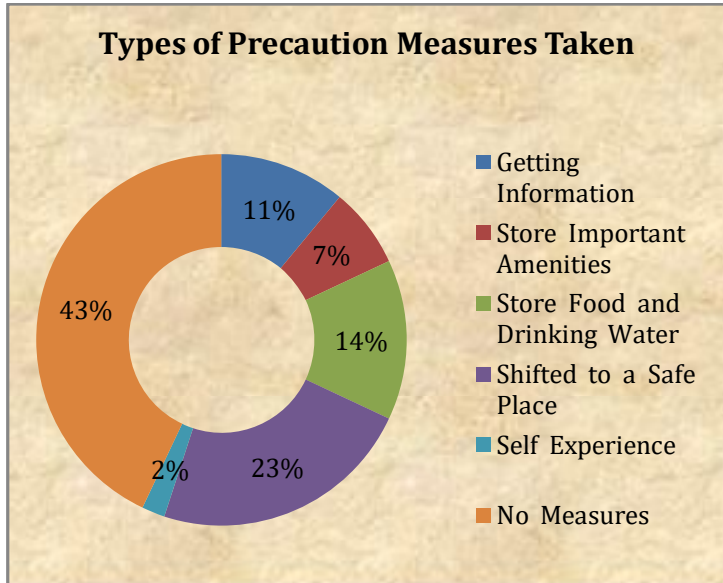
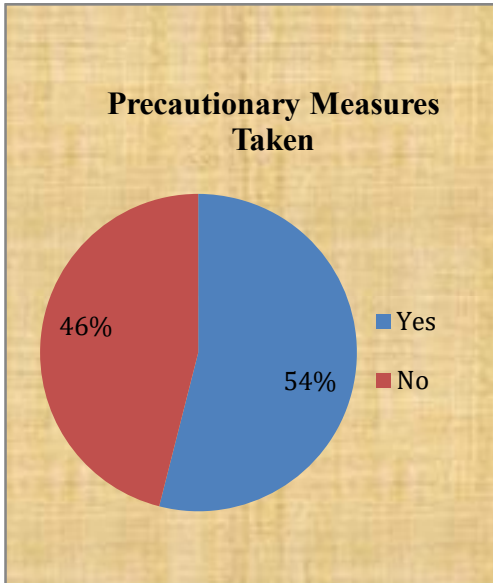


Fig no. 23- Precautionary Measures taken

Fig no. 24- Types of Precautionary Measures taken

Precautionary measures taken by the respondent vendors during the hazards:

Precautionary measures taken by the respondent vendors are represented by a pie diagram (Fig no. 23). Thus, from the given diagram it is quite clear that 46% vendors said that they did not adopt any kind of precautionary measure and 54% said they adopt different precautionary measures. It is observed that (Fig no. 24) the vendors those who adopt precautionary measures are of various types such as, getting Information, store important amenities, store food and drinking water, shifted to a safer place, etc. most of the people shifted to a safe place which is the nearby stadium in Puducherry.

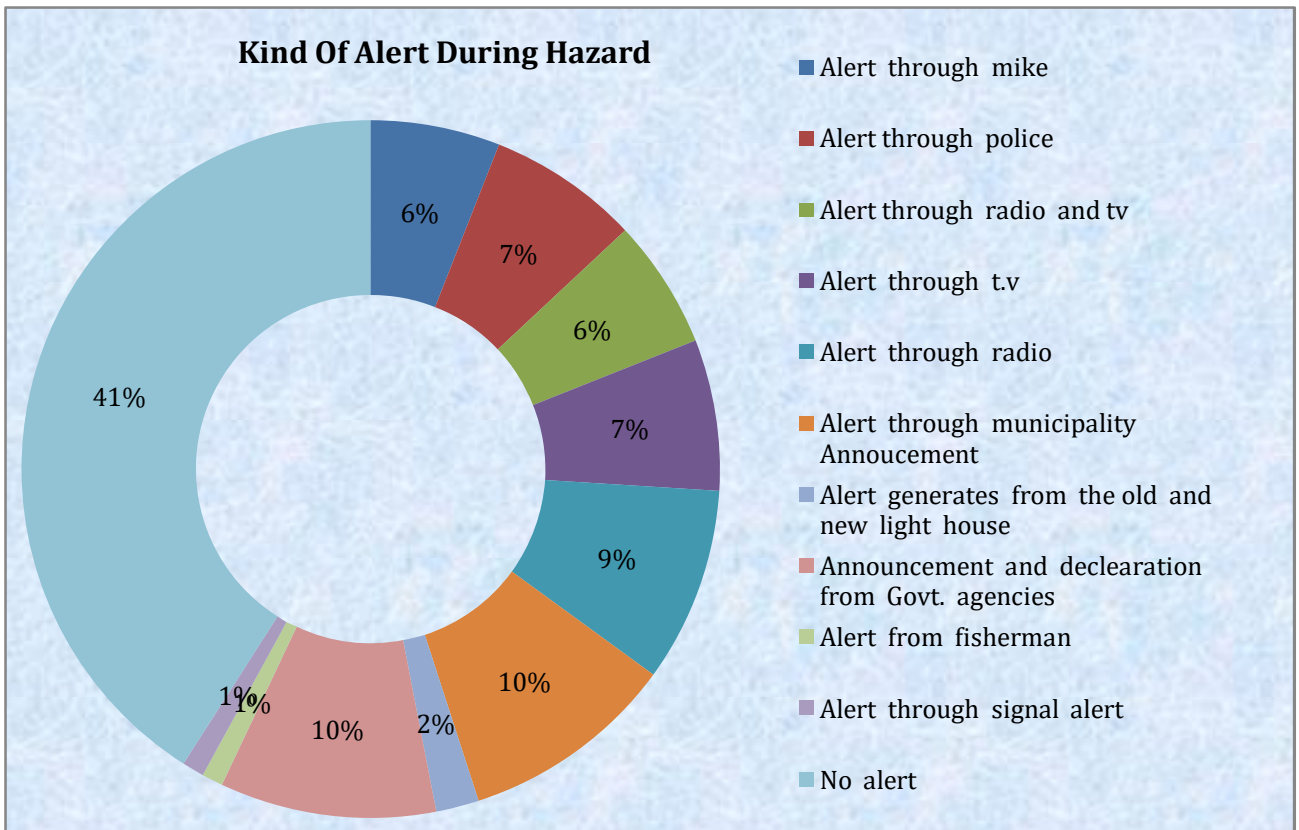


Fig no. 25-Kind of Alert During Hazard

Kinds of alerts during hazards:

Donut diagram(Fig no. 25) has been used to represent the kind of alerts received by the respondent vendors during the hazards in diagram. It has been seen that the vendors near the coastal areas get various types of alerts before or at the time of hazard condition they get alerted through loud speakers, police personals, through radio and TV, through municipality announcement, alerts generated from the old and new light house, announcement and declaration from government agencies, alerts from fisherman, through signals etc. From the primary survey report a cone graph is constructed to show the various types of alerts and their measures which show most of the people or vendors near coastal area did not get any kind of alert during or before the hazard condition. There are few vendors who get alerted through municipality, announcement and declaration from government agencies, alert through radio and TV, etc.

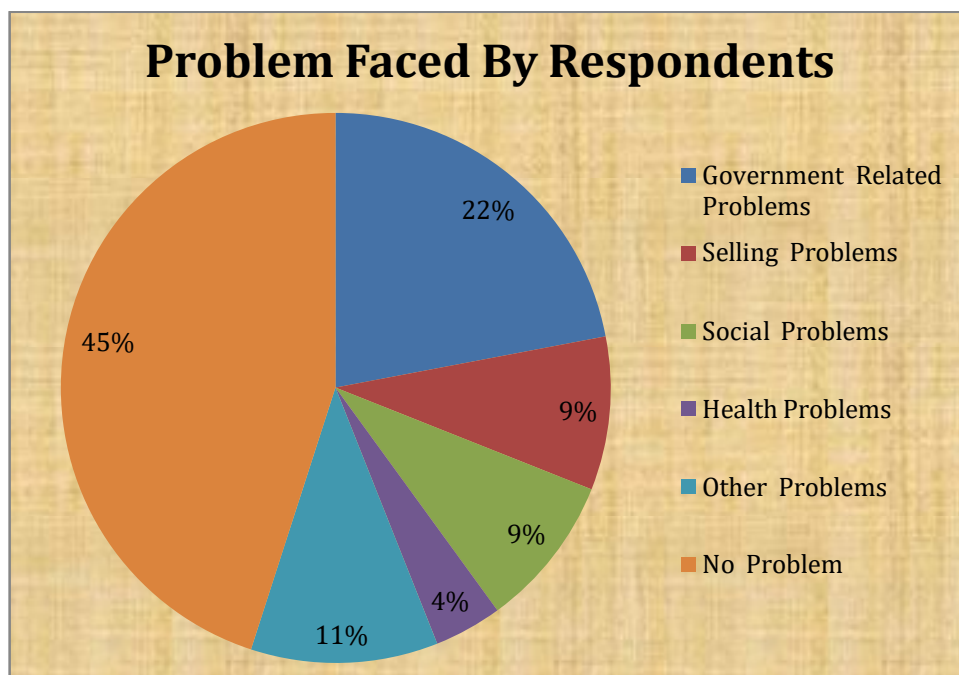


Fig no. 26- Problem faced by respondents

Problems faced by the respondent vendors:

A pie diagram (Fig no. 26) has been constructed to represent the problems faced by the respondent vendors. The respondent vendors of the coastal area of Puducherry confessed that they suffer from different type of problems in different sectors such as governmental problem, health problem, selling competition problem, social problem, and other kinds of problem by the pie graph the problematic condition of the vendors is represented which shows that 22% vendors have different governmental problems, 9 %vendors have selling problem, 9% have social problems, 4% people have different health related problems and 11% people have other problems in different sectors there are 45% of vendors with no problems in any sector.

Perception study of the respondent vendors

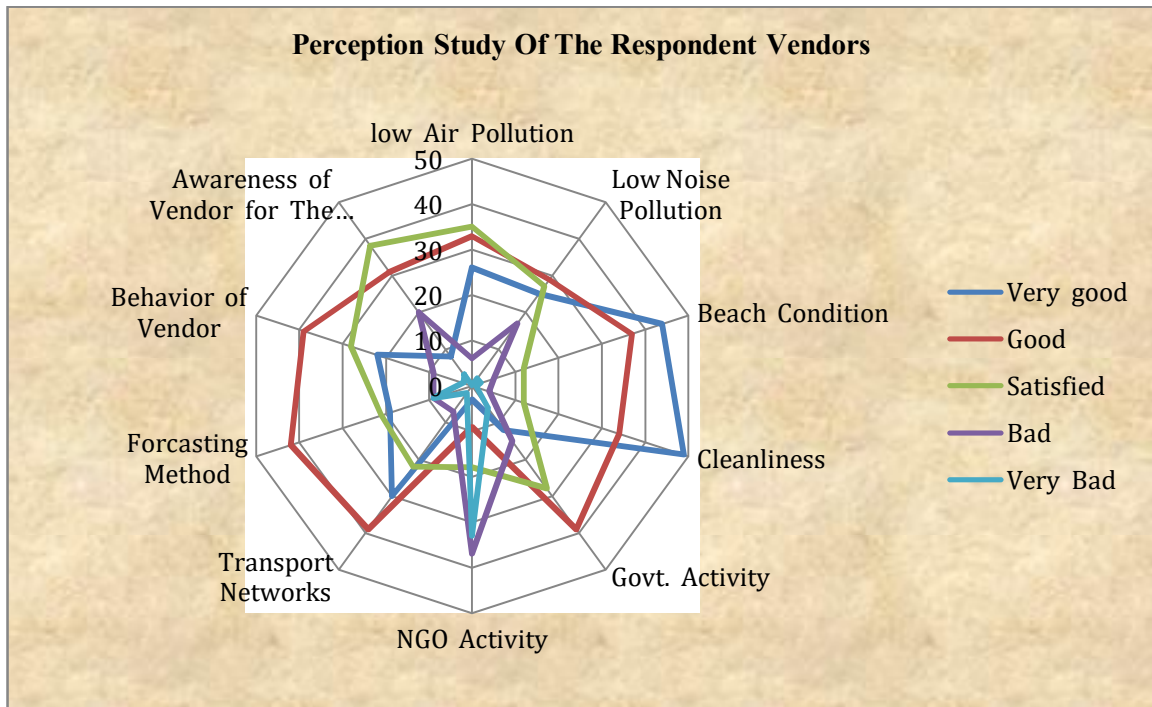


Fig no. 27-Perception Study of The Respondent Vendors

Perception study of the respondent vendors:

Perception study of the respondent vendors are represented by a radar graph (Fig no. 27). It is observed that the perception of the vendors about the given or asked parameters is almost similar. The parameters are ranked by five point Likert's scale which ranges from 1 to 5. In this scale 1 represents that the condition of the parameter is very bad and 5 represents that the condition is very good on the basis of that 5 range of very good, good, satisfied, bad, very bad is represented. On the basis of these parameters and the primary data a radar graph is constructed. The parameters of the diagram are low air pollution, low noise pollution, beach condition, cleanliness, governmental activity, NGO activity, transport network, forecasting method, behaviour of vendor, awareness of vendor for the natural disaster. Most of the vendors responded that the area has less air and noise pollution, the beach condition is also good in this area, the cleanliness of the surrounding area is also commendably good according to the respondents most of the vendors don't have any idea about the governmental activities for this are they don't know the concept of NGO in most of the cases, the transport network of the local area is very good according to the respondents in most of the cases, the forecasting method and system is very good at this area the behaviour of the vendors is very good and they tried to help the project as much as possible. The awareness of the vendors for the natural disasters is satisfying.

Major Findings-

- 1.The vast percentage of food and other sellers relies on the beach and the surrounding coastal area as their source of livelihood and exploit those areas in their everyday lives.
- 2.The majority of vendor respondents have long-term spatial attachment and dependency as they have long been living in the area.
- 3.Tsunami, cyclone, and storm are natural hazards that have resulted in a significant loss of assets, damage of stalls, and temporary shutting of businesses.

4.Many vendors lack proper knowledge on the management of hazard or precautions.

5.There was a large number of vendors who reported that in situations of hazards, they were offered little or no institutional support.

Conclusion:

Thus, on the basis of the vendor survey carried on Puducherry, union territory of India, formed in 1962 out of four former colonies of French India it can be concluded that just like many Indian towns and cities, Pondicherry also gives its little flavours of street. It is clear from the above discussion that the vendors of Puducherry shares space with the local surrounding in a significant manner. It can be seen that in the region most of the vendors are educationally qualified in their background thus a picture can be drawn from this view that most of them were aware of the importance of education now-a-days then one question arises that rather being so qualified in nature why they have chosen the job of street vendors in Puducherry it might be so because of unavailability of job opportunities in the region, now let discuss about the sharing of space which is our prime focus in our study thus if we consider the type of stall of the vendors, stall condition and stall occupied area from the gathered information a simplified conclusion can be drawn that the street vendors shares some common space with each other as well as with the local residents also as the stall are in close proximity with one another they shares some common space and the stall occupied area is also an important context because the occupied area can also be a part of shared space thus most of the vendors have their stall near or at the shoreline thus in virtue of this highly effects the natural condition of the beach area because it shares common space with the tourists as well as with other vendors and the local peoples as well which in turn leads to a space conflict that affects the natural environment of the shore by polluting it through various means. If we consider the duration of living of a vendor in the street of Puducherry it will clearly signify that some vendors have migrated from other region and thus from then started sharing of space with the others and those who are the native residents of the region are sharing the space from a very long time thus they are habituated with the local space of the region. Then comes the concept of time of using beach, different type of vendors uses the beach and share space with one another in different manner like the fisherman society or we can just call it the fish vendors use the beach most prominently in the morning or in the day light hours but the snack vendors as well as the vendors selling customary items and baby corn etc shares the space mostly in the evening hours. Those vendors who are having their stalls near the Ganesh temple as well as near the Ashram premises shares a common space with the temple authority and Ashram authority. There are some vendors in the region who shares the space with their own housemates like in the cases of vendors who are having their stalls in front of their respective houses. Thus, from the above discussion it is quite clear to say that sharing of space among the local vendors of Puducherry is very prominent.

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Citation: Chakraborty. L. & Sau. P., (2026) “Spatial Dynamics of Vendors’ Space-Sharing Under the Influence of Natural Calamities in the Coastal area of Puducherry Municipality”, *Bharati International Journal of Multidisciplinary Research & Development (BIJMRD)*, Vol-4, Issue-03, March-2026.