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A FACTORIAL MODEL ON PROPAGATION OF AKSHAYA TELECENTRES AMONG GRAMA-PANCHAYATHS IN KERALA

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Abstract

Initiated in 2002 under Public Private Partnership, Akshaya Telecentres are the common access points for the Information and communications services offered by Government of Kerala. It was established with an objective of bridging the digital divide, starting from the most basic level of administration, the panchayaths. One among its key objectives is to have at least one ICT literate member per household who can access public services and information easily. The present study was an attempt to compare the number of Akshaya centres on the basis of Panchayath size and Districts. The study could bring out that the sanctioning of Akshaya centres in a Panchayath is based on the size of the Panchayath in all the Districts.

Keywords:

Akshaya, Telecentre, Public Private Partnership, Geographical Coverage, Factorial Model, Chi-squire

1. INTRODUCTION

Akshaya telecentres are the common access points for the information communication technology (ICT) based services offered by the Government. The three major objectives of the project are (i) to become a multipurpose community technology centre to the households, (ii) to enhance e-literacy, (iii) to ease the e-governance. The integrated project bridging the digital divide is initiated and managed by Kerala IT mission. Government of Kerala has taken enormous efforts to make sure that the project is highly inclusive, with that purpose the project has been decentralized to the local self government (LSG) level. It aims to ensure that the benefits of the project should reach each and every household. The study aims to understand the success of the project in terms of its geographical reach at the LSG level.

2. BACKGROUND OF THE STUDY

The project is initiated based on the report- entrepreneurship development and mass employment generation in IT sector in Kerala, a study conducted by Science and Technology Development Project. The project aims to bridge the digital divide starting from Panchayath (LSG) level. The report suggests to initiate 9800 multipurpose community technology centres And that there would be an Akshaya centre for every household within a distance 2 KMs It aims to equip all the households in the state with at least one ICT literate who can access public services and information faster, accurate and cheaper. The project was initiated with a pilot and implemented fully with other two phases of district wise implementation. The decision regarding the sanctioning of center per location is made by Kerala IT.

3. LITERATURE REVIEW

There are literatures which claim that the efficiency of telecentre services create direct return by reducing the cost and enhancing effective marketing communications and indirect return by reducing the length of the operating circle [5], [4]. There is a general opinion that there are possible uses of ICTs in effective manner, if the information has local needs and applications [1]. A study of Access to ICT is done on Geographic proximity, preliminary numbers of venues, along with a sense of some of the regional themes that emerged in the sample of countries, followed by initial results of comparative analysis around access, capacity and environment dimension [3]. There is the need for a national information infrastructure to be established to act as the backbone for service delivery consisting of physical infrastructure and internet access points [6].

Introduction of information technology in the finance sector led to growth in information-led-business. Online information helps people to assist in running ICT businesses, including developing new products [7]. The study also found that demographic characteristics such as education, age, computer experience, cannot fully determine the accessibility of technology like computers and internet to the rural people. On the basis of the results, rural people will use computers and the internet if they get access.

Community telecentres have a major potential platform in providing access to information to the rural population. Centres are the places for social assemble and interaction, for learning, for personal growth, and for mobilizing efforts to address community problems and needs [3].

The application of information and communication technology within public administration optimizes its internal and external functions, thereby providing government, the citizen and business world with a set of tools that can potentially transform the way in which interactions take place, services are delivered, knowledge is utilized, policy is developed and implemented, the way citizens participate in governance and public administration reform; and the way good governance goals are met [8].

4. STATEMENT OF THE PROBLEM

The Akshaya Project was initiated in November 2002 under the Public Private Partnership (PPP) scheme. The project aims to cover all the LSGs with a centre for two or three wards. The state government are utilising the centres as a single window for public service. In the process it works as banking kiosks. The project has implemented District-wise in the State in three phases. All the phases were successful in establishing Akshaya centres in the selected districts. Hence the researcher tried to identify the equality among the number of centers per LSG with a special point of reference to the number of wards in LSGs and Districts.

5. OBJECTIVES OF THE STUDY

Following are the objectives of the Study

- To compare the number of Akshaya Centres per Grama-panchayaths
- To compare the number of Akshaya Centres per Grama-panchayaths with number of wards
- To compare the number of Akshaya Centres per Panchayaths in each districts of Kerala

6. METHODOLOGY

Desk type research is applied in this paper. The researcher has collected the data required for the analysis from various secondary sources. Analysis was done on the basis of data collected from the statistics reported in Akshaya and Department of LSG websites. Appropriate tools were used for analysis for arriving at the findings. The study attempts to identify the Panchayath level distribution of Akshaya centres in the state. It also tries to compare the equality in distribution on the basis of districts and number of wards in panchayaths in the state.

6.1 SAMPLING

The researcher had identified the district wise list of panchayaths in the state from the website of Department of Local Self Government. Then the researcher selected 280 panchayaths by using random numbers in the MS excel application.

7. SAMPLE CHARACTERISTICS

The researcher collected the details regarding population, area, number of wards and number of Akshaya centers in each selected LSGs.

7.1 POPULATION AT PANCHAYATH LEVEL

The researcher had collected the details of population at Panchayath level from the census conducted by the GOI; the average population of Selected Panchayaths is 25278 with a standard deviation of 8703.7. The highest population (53979) among them is at Parappanangadi LSG in Malappuram Dist and the lowest (4588) is at Vattavada LSG in Idukki district.

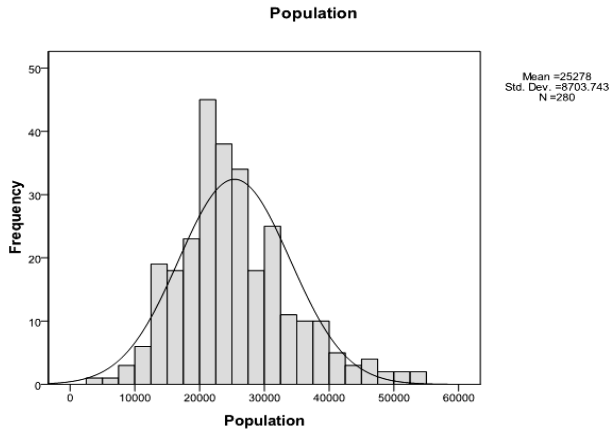

Fig.1. Population per Panchayath

7.2 GEOGRAPHICAL AREA (KM^2) OF PANCHAYATHS IN KERALA

The average area of each LSGs considered for the study is 40.83 km^2 with a standard deviation of 69.663 and the median value is 24.56. The LSG with least area (7 km^2) was Avinessery LSG in Trissur District while that with the highest (817 km^2) was Kumily in Idukki district.

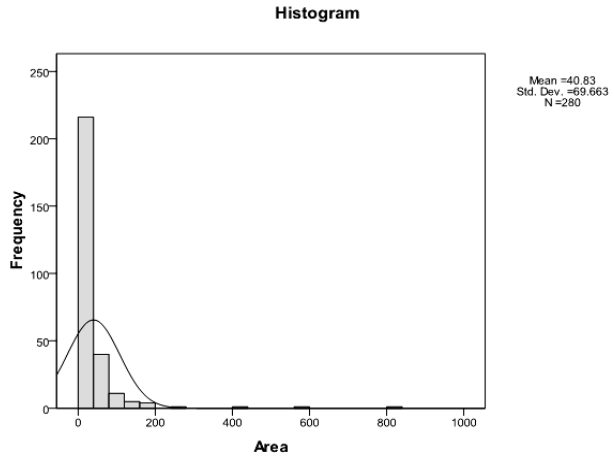

Fig.2. Geographical Area (km^2) of Panchayaths in Kerala

7.3 NUMBER OF ADMINISTRATIVE WARDS OF PANCHAYATHS IN KERALA

It is observed that the average number of wards among the selected panchayaths in the state is 17.21 with a standard deviation of 2.993 and a median of 17. The minimum number of wards in a LSG is 13 and the maximum is 23. Divisions of wards for panchayaths in the state have been done on the basis of the population and geographical area of each ward.

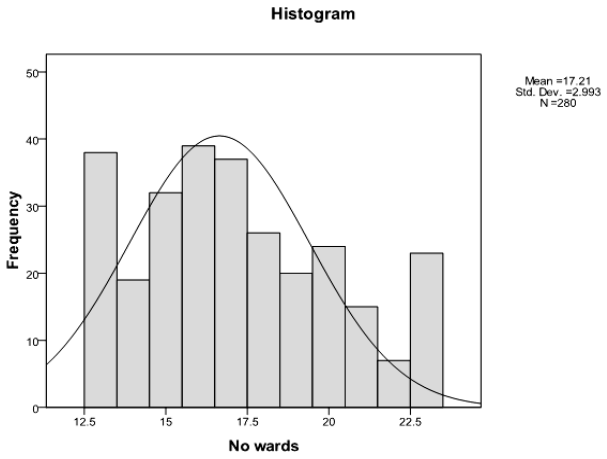

Fig.3. Number of Administrative Wards of Panchayaths in Kerala

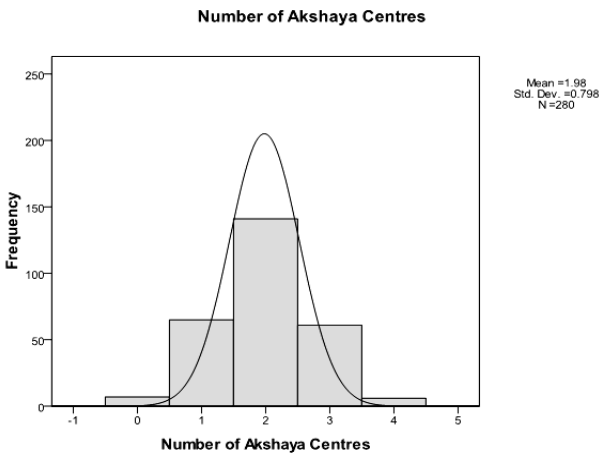

Fig.4. Classification of LSGs on the Basis of Akshaya's Presence

8. ANALYSIS

8.1 CLASSIFICATION OF LSGS ON THE BASIS OF AKSHAYA'S PRESENCE

The researcher selected 280 Panchayath level Local Self Governments for this study in random, the table below shows the classification of LSGs on the basis of number of Akshaya centre available in each Panchayath.

Table.1. Classification of LSGs on the Basis of Akshaya's Presence

Number of Centres Per LSG	Frequency	Percent
0	7	2.5
1	65	23.2
2	141	50.4
3	61	21.8
4	6	2.1
Total	280	100.0

Source: Data Analysis

From the above table it can be observed that majority of the LSGs (50%) are having two Akshaya centers followed by those with one center (23.2%) and three centers (21.8%). There are six LSGs with four Akshaya centers (2.1%), while 7 LSGs considered in the study (2.5%) does not have any Akshaya centre.

8.2 COMPARISON AMONG LSGS - FACTORIAL MODEL

The researcher attempted Factorial Design to identify the following; (a) Is there any difference between the average number of Akshaya centres for all Districts? (b) Is there any difference between the average number of Akshaya centres for all different sizes of panchayaths (on the basis of ward numbers)? (c) Is there any difference between the panchayaths in the average number of Akshaya centres?

(a) Panchayath

The researcher tried to understand whether the average number of Akshaya centres per Panchayath in Kerala is equal.

- H0: Average numbers of Akshaya centre for all the panchayaths are equal
- H1: Average numbers of Akshaya centre for all the panchayaths are not equal

(b) Number of Wards in Panchayath

The spread of population and geographical area of all the panchayaths in the state are high. While fixing Panchayath wards authorities considered geographical boundary and population as the primary criteria. Hence the researcher considered the number of wards for the comparison,

- H0: Average number of Akshaya centres per panchayaths for all the sizes are equal
- H1: Average number of Akshaya centre for all panchayaths all the sizes are not equal

(c) Districts

The analysis is to identify the average number of Akshaya centres per Panchayath for all fourteen districts are equal the hypothesis is as follows:

- H0: Average number of Akshaya centres per panchayaths for all the districts are equal
- H1: Average number of Akshaya centres per panchayaths for all the districts are not equal

Table.2. Tests of Between-Subjects Effects
Dependent Variable: Number of Akshaya Centres

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	89.874[a]	110	.817	1.569	.004
Intercept	635.631	1	635.631	1220.733	.000
Districts	10.915	13	.840	1.612	.086
Size	19.432	10	1.943	3.732	.000
District* Size	42.665	87	.490	.942	.618
Error	87.998	169	.521		
Total	1274.000	280			
Corrected Total	177.871	279			

a. R Squared = .505 (Adjusted R Squared = .183)
Source: Data Analysis

From the above table it can be inferred that

(a) The significant value being less than 0.05 (.000), so the average numbers of Akshaya centres for all the panchayaths in Kerala are not equal. It means that there is significant difference between panchayaths in the State.

(b) The significant value being less than 0.05 (.000), the average numbers of Akshaya centres per Panchayath for all the different Panchayath groups on the basis of number of wards are not equal and there is a significant difference between the State in this. Hence proving that the average numbers of Akshaya centres per Panchayath is depended on the size of the Panchayath.

(c) The significant value is above 0.05, hence accept H0: Average number of Akshaya centres per panchayaths for all the districts are equal; it means that the average numbers of Akshaya centres per Panchayath among all the fourteen districts are same. Hence the Akshaya centres per panchayath are not sanctioned on the basis of district at which the Panchayath is situated.

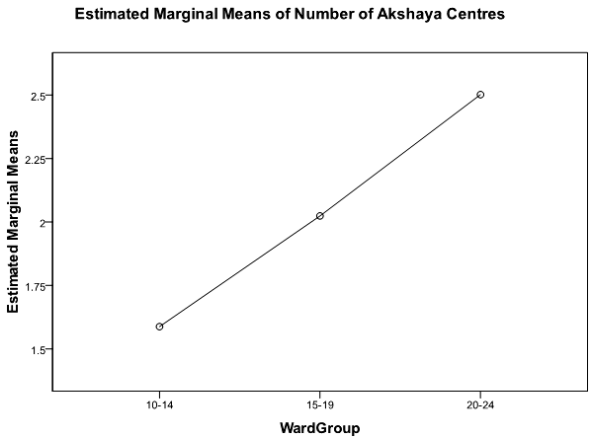

Fig.5. Estimated Marginal Means of Number of Akshaya Centres

The above figure shows the marginal means of the number of Akshaya centres sanctioned among panchayaths with 10-14 wards, 15-19 wards and 20-24 wards. It can be observed from the figure that the marginal mean has been increased with the increase in number of wards among panchayaths in Kerala.

8.3 ASSOCIATIONS BETWEEN THE NUMBER OF AKSHAYA CENTRES WITH NUMBER OF WARDS

The researcher has attempted to identify the association between the numbers of Akshaya centres in a Grama-Panchayath with number of wards in a Grama-Panchayath. The selected panchayaths were classified into three, on the basis of size of the ward (Panchayath with ward size of 10-14, 15-19 and 20-24) and on the basis of number of Akshaya Centres (Panchayaths with number of Akshaya centres of less than 2, exactly 2 and above 2). The table below shows the result of the cross tabulation.

Table.3. Cross-tabulation of Panchayaths in Kerala

	NO OF CENTRES			Total
Ward Group	<2	2.00	>2	
10-14	32	20	5	57
% within Ward Group	56.1%	35.1%	8.8%	100.%
15-19	31	89	34	154
% within Ward Group	20.1%	57.8%	22.1%	100.%
20-24	9	32	28	69
% within Ward Group	13.0%	46.4%	40.6%	100.%
Total	72	141	67	280
% within Ward Group	25.7%	50.4%	23.9%	100.%

Source: Data Analysis

From the above table it can be observed that, majority of the Akshaya centres in the Panchayath with 10-14 wards are having less than two Akshaya centres (56.1% in this group), followed by that with two Akshaya centres (35.1%). While only 8.8% of the population had more than two Akshaya centres.

In the case of the second group (Panchayath with 15-19 Wards) the majority of the panchayaths are having two Akshaya centres (57.8%) followed by more than two centers (22.1%) While the majorities among panchayaths having 20-24 wards have exactly two Akshaya centres followed by more than two centres (40.6%).

Table.4. Chi-Square Tests

Particulars	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.931[a]	4	.000
Likelihood Ratio	41.436	4	.000
Linear-by-Linear Association	34.184	1	.000
N of Valid Cases	280		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.64.
Source: Data Analysis

Further the researcher attempted to identify the significance of association between the number of wards in a Panchayath and sanctioned number of Akshaya centres by using chi-squire test. The above table shows the results of the same.

It can be observed that there is a statistical significance between the number of wards in a Panchayath and sanctioned number of Akshaya centres there. Hence it can be inferred that the sanctioned number of Akshaya centres are in proportion to the number of wards in a Panchayath.

9. MAJOR FINDINGS

The researcher has randomly selected 280 Panchayath level Local Self Governments for this study. The average size of population among selected panchayaths for this study is 25278 with a standard deviation of 8703.7. The average area of LSGs considered for the study is 40.83 km^2 with a standard deviation of 69.663. It is observed that the average number of wards (divisions of wards for panchayaths in the state have been done on the basis of the population and geographical area) among the selected panchayaths in the state is 17.21 with a standard deviation of 2.993. The study identified that majority of the LSGs (50%) are having two Akshaya centers followed by those with one center (23.2%) and three centers (21.8%).

Factorial model attempted in this study revealed that average numbers of Akshaya centres for all the panchayaths in Kerala are not equal. It shows that there is significant difference between the numbers of Akshaya telecentres per panchayaths in the State. Another finding from the factorial model is that the average numbers of Akshaya centres per Panchayath is depended on the size of the Panchayath. It also shows that the average numbers of Akshaya centres per Panchayath among all the fourteen districts are same. Hence the Akshaya centres per Panchayath are not allotted on the basis of district at which the LSG is situated.

The study also attempted to identify the significance of association between the number of wards in a Panchayath and sanctioned number of Akshaya centres by using chi-squire test. The test reveals that there is statistically significant association between number of Akshaya telecentres and number of administrative wards in a Panchayath. So, number of Akshaya telecentres in a Panchayath is proportion to the number of wards in that LSG.

10. CONCLUSION

There is significant difference in the case of average number of Akshaya centre among panchayaths in the State especially based on the sizes of the Panchayath. It is also worth noting that the size of the District does not have an influence on the number of Akshaya centers sanctioned. Hence it can be concluded that the number of Akshaya centres in a Panchayath is solely determined on the basis of the size of the Panchayath.

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