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A Study of Vendors Movement in Rural Periodic Market Centres of Jalpaiguri District, West Bengal, India

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Abstract

The study examines the movement and behaviour of vendors in rural periodic market centres in Jalpaiguri district. It was found that vendors participate in market cycles independently, though some market centres remain isolated and are not part of any cycle. Notably, market cycles in the region are driven by vendor activity rather than consumer movement. The research focuses on the vendors' market-day schedules, the types of vendors, and the nature of the goods and services they offer. The Location Quotient Method was used to calculate centrality indices based on 44 parameters such as accessibility, economic activities, periodicity, and transaction types. These indices helped classify markets into four hierarchical levels: regional, sub-regional, intermediary, and local. A four-point weighted scale was applied to rank the variables by importance. Quantitative methods like linear regression and the coefficient of determination explain relationships between variables. The average spheres of influence for sample rural periodic market centres are determined based on the distance (range) vendors travel from their homes to these market centres.

Keywords: Periodic, Vendors Movement, Centrality, Hierarchy

I. INTRODUCTION

Rural periodic market centres serve as essential hubs for the exchange of agricultural and non-agricultural goods in rural areas. These markets are organized gatherings of consumers and vendors held at specific locations on a recurring schedule weekly, bi-weekly, or tri-weekly. There are 215 such market centres in the study region, characterized by their indigenous nature and focus on facilitating the trade of local, perishable agricultural and horticultural products alongside non-agricultural goods. Vendors who bring in exotic

products typically source these items from urban markets and sell them in rural periodic centres, establishing a two-way flow of goods.

For many rural inhabitants, these markets are vital for buying and selling goods through retail transactions that occur at regular intervals. Vendor behaviour within these markets significantly influences spatial interactions within the region. These markets form an interconnected system, referred to as a "market cycle," which governs the movement of goods, vendors, and consumers between producer and buyer. By providing economic opportunities, rural periodic market centres play a crucial role in improving the livelihoods of disadvantaged villagers.

Vendors in these markets fall into two main categories: part-time and full-time. Part-time vendors, often producers themselves, sell their goods in the markets, spending the rest of the week producing more items. These vendors carefully plan their schedules and routes to maximize efficiency and profitability, creating mental maps of market cycles and travel paths. Travel behaviour varies based on the nature of the goods carried. For example, buying vendors focus on procuring fresh, low-cost items to resell in urban centres, while selling vendors bring urban-manufactured goods to rural markets. Many vendors prefer to return to their home base daily due to improved transport systems.

Periodic markets act as central nodes for socio-economic activities within their catchment areas, facilitating the movement of people and goods, particularly in developing regions (McKim, 1972; Good, 1975). These centres impact both vendors and consumers, fostering economic interactions. As vendors aim to maximize profits, they prioritize markets that offer the most economic benefits, while consumers seek nearby markets to minimize travel costs. This interaction aligns with the concepts of *threshold* and *ranges* from Christaller's Central Place Theory (1933), which predicts patterns of movement based on economic viability and spatial convenience.

In the study area, vendor movements between markets are predominantly home-based, with sellers returning home daily. Vendors plan their journeys by considering market schedules, locations, and travel routes, often guided by mental maps (Roy & Roy, 2018). The proximity and individualistic nature of these movements highlight the area's improved transportation infrastructure. By facilitating the exchange of agricultural goods, rural periodic market centres remain indispensable to the local economy and community.

II. Objectives

The present work has been carried on the following objectives:

- To identify the factors influencing the behaviour of market participants.
- To understand the spatial movement patterns of vendors within rural periodic market centres.

III. Database and Methodology

The present study depends on both the primary and secondary data sources. Primary data included a schedule survey and questionnaire to assess the behaviour patterns of major participants in rural periodic marketplaces, with a distinct concentration focused on vendors. Questionnaire and schedule survey has been carried out over 540 vendors from 25% sample rural periodic market centres to assess the behavioural characteristics. Central place theory considers market centres as a central place whose prime function is the

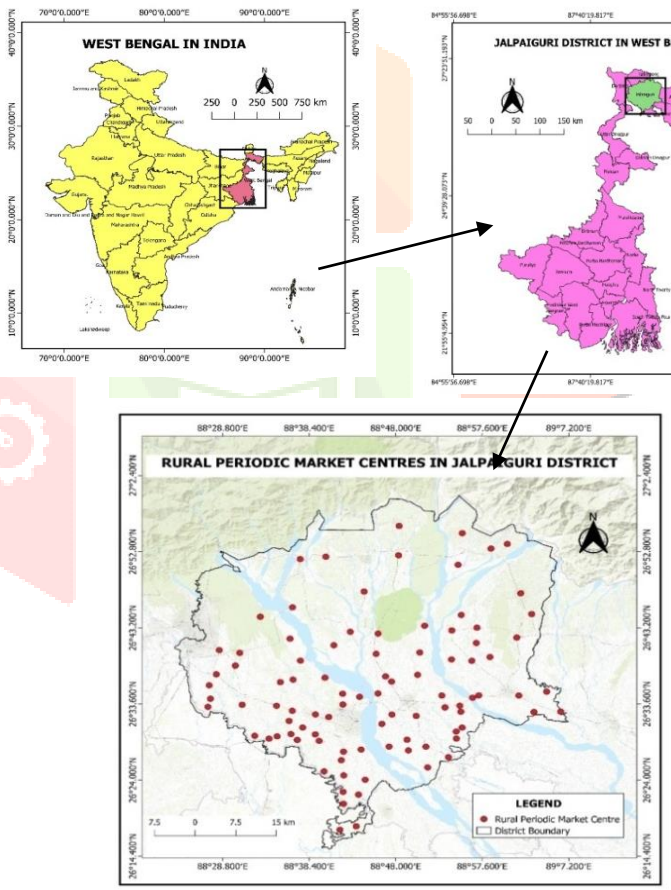
provision of a wide variety of goods and services to the dispersed populations within their respective ranges (Good, 1975). The range is the maximum spatial distance over which people are prepared to travel to obtain a particular good or service from the central place. The Location Quotient Method was employed to calculate centrality indices using 44 parameters, including accessibility, economic activities, periodicity, and transaction types. These indices were instrumental in classifying markets into four hierarchical categories: regional, sub-regional, intermediary, and local. A four-point weighted scale was applied to prioritize the variables by significance.

Quantitative methods like linear regression and the coefficient of determination explain relationships between variables. The average spheres of influence for sample rural periodic market centres are determined based on the distance (range) vendors travel from their homes to these market centres.

IV. The Study Area

The name "Jalpaiguri" derives from the word "Jalpai," meaning "olive," and "Guri," meaning "place." While olive trees were once abundant in the area, they had vanished by the early 1990s. Geographically, Jalpaiguri

Location Map of the Study Area



Source: Based on Various Reports from Census of India and West Bengal State Marketing Board, 2012-13

Fig.1 Location Map of the Study Area

Geographically, Jalpaiguri is situated between 26°15′47″ and 26°59′34″ N latitude, and 88°23′2″ and 89°7′30″ E longitude, encompassing an area of 3,380.38 km². Located in the northern region of West Bengal, it lies at the foothills of the Eastern Himalayas and shares international borders with Bhutan to the north and Bangladesh to the south. Additionally, it is bordered by four districts: Darjeeling to the west and northwest, Kalimpong to the northwest, Koch Bihar to the south, and Alipurduar to the east.

The district is part of the Western Dooars region and underwent administrative bifurcation in 2014, resulting in the creation of Jalpaiguri and Alipurduar districts. Presently, Jalpaiguri consists of nine Community Development Blocks: Rajganj, Jalpaiguri Sadar, Maynaguri, Dhupguri, Banarhat, Mal, Kranti, Matiali, and Nagrakata. According to the 2011 Census of India, the district had a total population of 1,985,600, with 82.03% (1,628,791) residing in rural areas and 17.97% (356,809) in urban areas. The district comprises 391 inhabited villages.

V. RESULTS AND DISCUSSION

Vendors' Behavioural Pattern

Stine (1969) has given an argument as to why vendors must to sell in more than one market. The argument emerges from the finding that in an area where the main source of sustenance is produced, the greatest range of goods within one market could be less than the minimum range needed for the vendor to be profitable. Yet, certain vendors set up shop in larger regular markets where there is enough daily activity to fulfill their profit requirements, therefore, there are other reasons to visit other periodic markets. Beyond hesitation, the majority of rural periodic markets of Jalpaiguri Districts' vendors travelled to neighbouring districts' marketplaces to improve their profits. Others followed accordingly, given that these marketplaces afforded alternative spaces for transaction of marketing commodities. It is also shown that selling, rather than purchasing, was the main reason for travelling to other marketplaces to increase profit.

The age and sex-wise distribution of 540 sample vendors in rural periodic markets in the Jalpaiguri District is shown in Table 1; of these, 466 vendors (86.30%) are male, with the largest proportion (42.49%) in the 46-55 age group, followed by 38.20% in the 36-45 age group. The study also shows that only 1.29% of male vendors are under 25 years old, and 4.72% are over 66 years old, participating in rural periodic marketing activities. These age groups are less represented due to challenges such as poor transportation, which makes it difficult for them to travel to markets and transport goods.

Among the 540 vendors, 74 (13.70%) are female, reflecting societal discouragement of women's participation in rural markets. The rural periodic market caters to the diverse needs of vendors, making it essential for them to quickly sell their products in these market centres in addition to managing their household responsibilities. However, of the women who do participate, the majority (52.70%) are in the 36-45 age group, followed by 43.24% in the 46-55 age group. No female vendors were found in the under-25 age group. Overall, the majority of vendors (42.59%) are in the 46-55 age group, with 40.19% in the 36-45 group. The smallest proportions of vendors are those under 25 (1.11%) and over 66 (4.26%) participating in rural periodic marketing activities.

Table.1. Age-Sex Composition of Vendors in Rural Periodic Markets

Sex		Age Group						
		< 25	26 - 35	36 - 45	46 - 55	56 - 65	> 66	Total
Male	In No.	6	30	178	198	32	22	466
	In %	1.29	6.44	38.20	42.49	6.87	4.72	100.00
Female	In No.	-	1	39	32	1	1	74
	In %	-	1.35	52.70	43.24	1.35	1.35	100.00
Total	In No.	6	31	217	230	33	23	540
	In %	1.11	5.74	40.19	42.59	6.11	4.26	100.00

Source: Field Survey 2023 - 2024

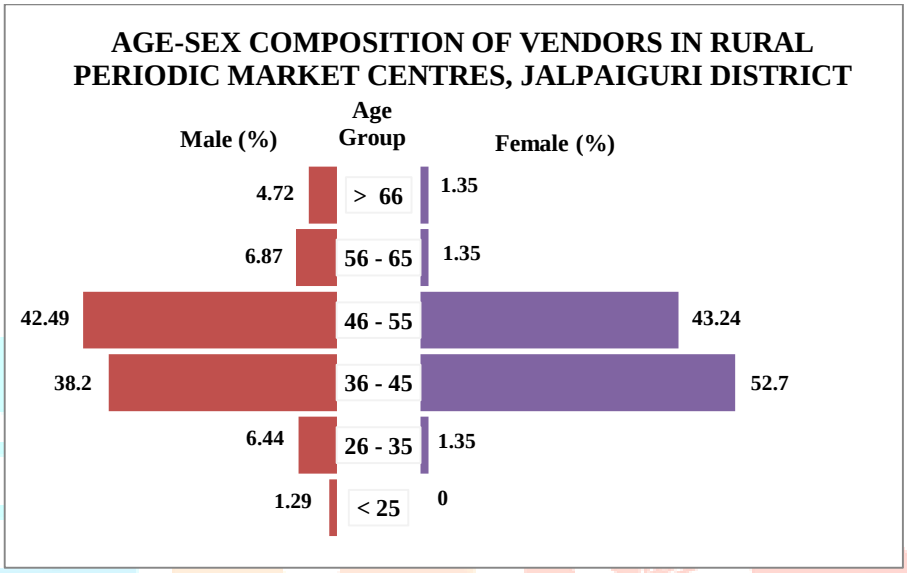


Fig.2. Age-Sex Composition of Vendors in Rural Periodic Market Centres of Jalpaiguri District

The study also reveals that the economic status of vendors does not influence their behaviour in attending markets in the study area; rather, it is the nature of their work that significantly affects their visiting patterns. The largest group of vendors, 131 (24.26%), earns between Rs 1501 - 2000 per day, followed by 125 vendors (23.15%) earning Rs 1001 - 1500 per day and 115 vendors (21.30%) making Rs 501 - 1000 per day. 63 vendors (11.67%) earn less than Rs 500 per day. Although these earnings are not sufficient for a standard of living or sustaining significant profits, they provide additional income alongside agricultural activities. A smaller proportion of vendors, which is 46 (8.52%) who earn more than Rs 2501 per day in rural periodic market centres, belong to a higher profit group.

Table.2. Number of Vendors according to Profit

Profit/Day	Frequency	Percentage	Cumulative Percentage
<500	63	11.67	11.67
501 - 1000	115	21.30	32.97
1001 - 1500	125	23.15	56.12
1501 - 2000	131	24.26	80.38
2001 – 2500	60	11.11	91.48
>2501	46	8.52	100.00
Total	**540**	**100.00**	

Source: Field Survey 2023 - 2024

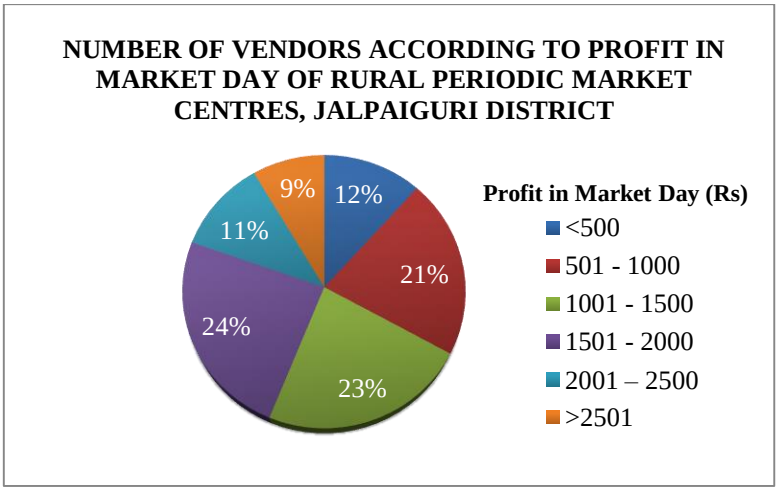


Fig.3. Number of Vendors According to Profit in Rural Periodic Market Centres of Jalpaiguri District

Many people are involved in the marketing activities and in the transactions of various marketing commodities in rural periodic markets. Depending on how they participate, these participants are divided into various categories. Vendor's nature also largely influences their visiting patterns in rural periodic market centres. On the basis of market attending and time spent in rural periodic markets, there are full-time Vendors and part-time Vendors. The vendors may be further sub classified under these two types as producer vendors, purchasing vendors, selling vendors and service providers. Full-time vendors who spend at a market places at least 70-75% of the days of the year. Full-time vendors are those who spend a major part of their workday in a trade related to producing activities. It means that full-time vendors in rural periodic markets engage mostly in non-production activities and visit weekly to various market places.

The selling vendors who fall under the category of the full-time vendors, sharing with 37.89%, vendors travel from one rural periodic market to another throughout the week to sell their goods. The selling vendors often base themselves at their homes before travelling to other rural periodic marketplaces that take place on different days throughout the week. The majority of selling vendors sell goods that are not native to their area but are instead imported from nearby urban centres. It has been highlighted that a variety of goods including cosmetics, soaps, lower-quality ready-made clothing, spices, groceries, etc. are sold by selling vendors. To purchase the goods they bring to sell, the vendors travel to the nearby urban markets or rural markets. These kinds of purchases occur during holidays or rest. These goods are frequently used by massive populations, which mean that there is a constant demand for goods in rural periodic markets. Selling in these markets makes it easier for rural people to get these commodities.

Table.3. Types of Vendors in Rural Periodic Markets

Type of Vendors		Producer Vendors	Purchasing Vendors	Selling Vendors	Service Providers	Total
Full-time	**In No.**	-	160	122	40	322
	In %	-	49.69	37.89	12.42	100.00
Part-time	**In No.**	141	23	32	22	218
	In %	64.68	10.55	14.68	10.09	100.00
Total	**In No.**	**141**	**183**	**154**	**62**	**540**
	In %	26.11	33.89	28.52	11.48	100.00

Source: Field Survey 2023 – 2024

Besides selling vendors, the full-time vendors group comprises purchasing vendors (49.69 %) and service providers (12.42 %). Purchasing vendors visit rural periodic marketplaces to purchase various local commodities at cheaper rates, including fish, livestock, and horticulture products. Service providers provide their offerings throughout different marketplaces since their services are sold at more dimensions in rural periodic marketplaces. Different service providers can be found among them, including blacksmiths, barbers, cobblers, bike repairers, astrologers, etc. The rural periodic markets serve as places of assembly for many different kinds of people, which enhance an appropriate barrier for their purpose.

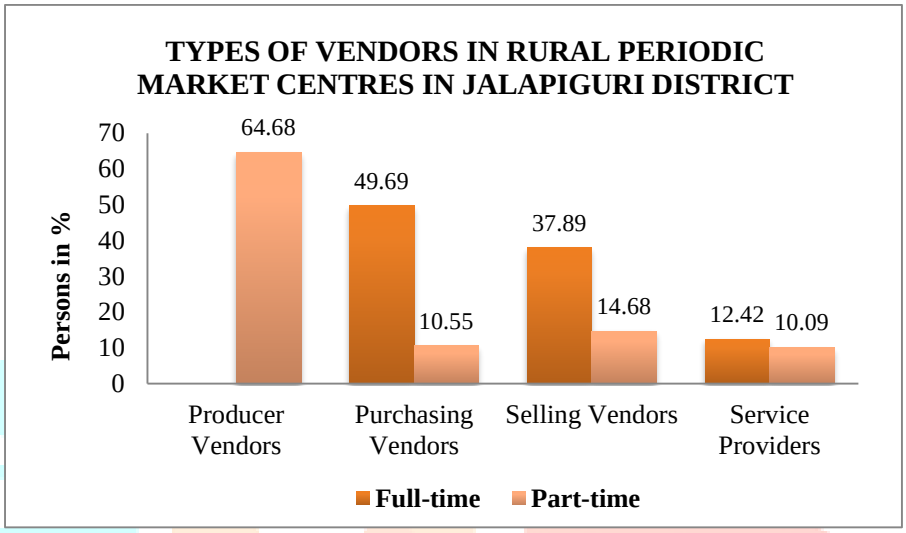


Fig.4. Types of Vendors in Rural Periodic Market Centres of Jalpaiguri District

Table 4 shows the average distance travelled by each group of vendors in the rural periodic markets per week. The length of travel comprises the distances people must travel both to and from their homes or places of residence to visit a market. There are great variations in nature and distance travelled by vendors. These disparities can be caused by several factors, including the size of the business, the mode of transportation, the cost of travel, the type of vendor (full-time or part-time), and the level of market desire.

Part-time vendors prefer to visit one or two rural periodic market centres weekly rather than participate in every marketing endeavour. They work in various occupations, such as firm work, artisanship, or making handcrafted goods or otherwise, they engage in the market centres for less than 5 hours. Producer vendors constitute an important number (64.68 %) of part-time vendors in rural periodic market centres. Due to the region's substantial dependence on agriculture, firm produce dominates in the periodic marketplaces. Producer vendors generally bring their surplus goods to such markets. These producer vendors travel from the nearby villages to sell their surplus goods, making them entirely local. It has been noticed during survey that most producer vendors typically travel an average distance of 9.39 km from their residence to the market, which is shorter compared to other groups. In contrast, purchasing vendors travel a greater mean distance of 10.84 km, selling vendors travel 10.79 km, and service providers cover an average of 12.34 km. This indicates that producer vendors generally operate nearer to home, while service providers are farther to home for extended periods than other market participants.

Table.4. Vendors Average Distance (km) travelling to visit at Market Centres

Type of Part-time and Full-time Vendors	Average Distance (km)Travelling to visit at Markets
Producer vendors	9.39
Purchasing vendors	10.84
Selling vendors	10.79
Service provider	12.34

Source: Field Survey 2023 - 2024

The producer vendors own a firm that produces commodities for trading; in contrast, the purchasing vendors and selling vendors travel a particular distance to obtain the goods that are offered for trade at periodic market centres. The producer vendors fulfill their responsibility to sell their goods as a side business while maintaining it part-time. Due to these characteristics, the producer vendor cannot afford to transport his goods across longer distances. Therefore, to dispose of the firm's product, the producer vendor attempts to travel the least distance between rural periodic markets. Studies have shown that producer vendors who formerly embraced a subsistence farming strategy are experiencing the need to dispose of surplus goods in rural periodic marketplaces. The purchasing vendors in rural periodic markets take advantage of them because they want to purchase commodities from them at a lower price. Still, the producer vendors have started seeing things other than the purchasing vendors. In the rural periodic market, service providers (10.09 %) who engage in another job are categorized as part-time vendors. Aside from service providers and producer vendors, there are also purchasing and selling vendors of small shares, 10.55 % and 14.68 %.

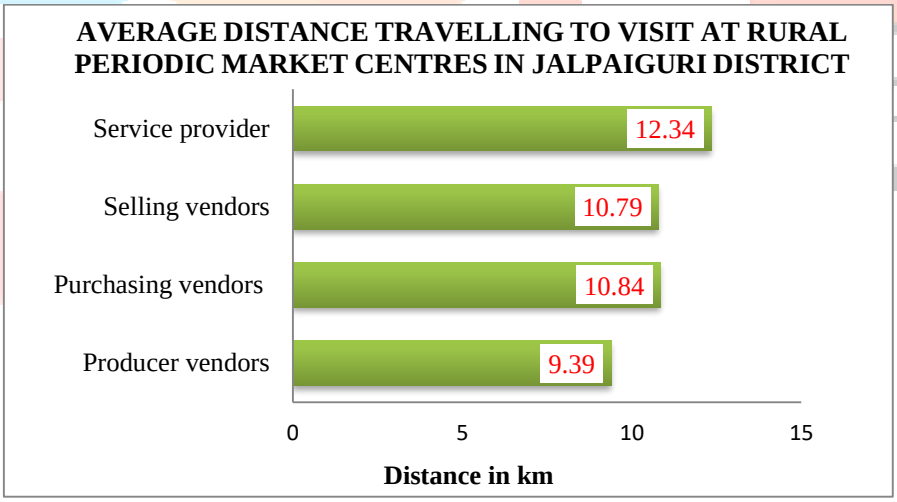


Fig.5. Vendors Average Distance (km) Travelling to Visit at Market Centres of Jalpaiguri District

Although it has been considered that vendors may attempt to travel further if the profit from selling exceeds the additional cost of transportation, it is also thought that vendors' travel distances in various rural periodic market locations are determined by the perishable and durable goods that are placed at these locations. It is the demand for goods which indicates the market's centrality that attracts vendors to travel to a certain market. Therefore, the type of goods which vendors trade in impacts how they travel in place. Compared to service providers and non-perishable goods that the concerned vendors transport, the vendors of perishable commodities will travel a shorter distance.

Vendors often look for the periodic market with the cheapest cost per unit of travel distance (Good, 1975). Service providers like blacksmiths and cobbler, as well as vendors of durable goods like aluminium and

footwear, cover a weekly mean distance of almost above 25 km to attend different rural periodic markets. In contrast, vendors of vegetables, earthen wares, bamboo products, fish, etc. cover a smaller distance in a week than do service providers and vendors of durable goods in the full-time category because, as producer vendors, they spend their spare time producing and firming goods on off days. The selling and purchasing vendors engage in it full-time because it is their primary source of income. The selling vendors take advantage of the opportunity to visit more centres and travel further to maximize the sale and the resulting gain since they are fully dependent on trading commodities by visiting different periodic markets in a system throughout the week.

The selling vendors are assisted in covering targeted centres by travelling from one rural periodic market to another on meeting days during the week, as they frequently use particular vehicles to visit the market centres. The selling vendors may travel the desired distance thanks to the mode of transportation, up to an average of 10 to 15 km in the area. It is clear from the table 5 clearly shows that, among different types of vendors, purchasing vendors visit an average of 2.94 marketplaces per week. This is followed by service providers, who visit 2.91 marketplaces, and selling vendors, who visit 2.87 marketplaces. In comparison, producer vendors visit, averaging 2.34 marketplaces per week. Through examining the behaviour of the purchasing vendors, we may identify what type of purpose causes this kind of maximum visit to different rural periodic markets. Their target is to increase profits during rural periodic markets, which are the primary destination for gatherings of all kinds of vendors and consumers.

Table.5. Vendors and Market Visit in a Week

Type of Part-time and Full-time Vendors	Average number of market visit in a week
Producer vendors	2.34
Purchasing vendors	2.94
Selling vendors	2.87
Service provider	2.91

Source: Field Survey 2023 - 2024

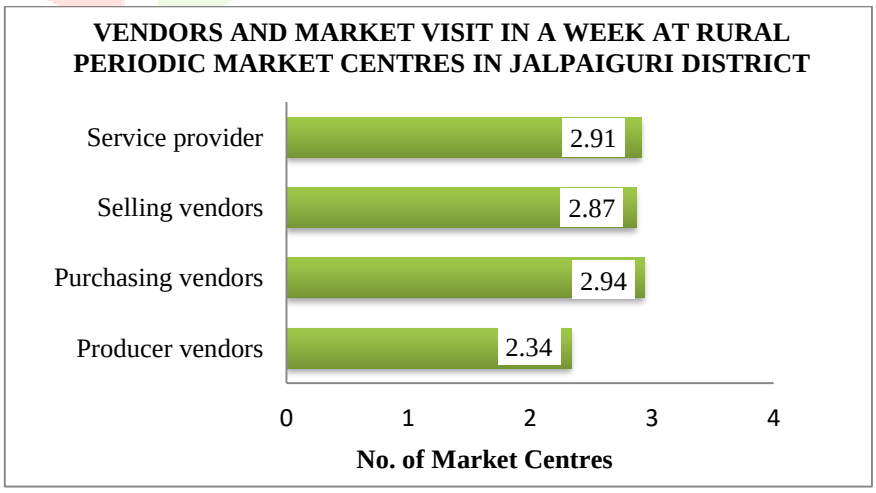


Fig.6. Vendors and Market Visit in a Week at Rural Periodic Market Centres in Jalpaiguri District

Modes of transportation used by vendors in rural periodic market centres

It has been observed that vendors use various kinds of transportation modes. The observations reveal that the use of modes of transportation largely concerns the distance to be covered, the types of goods that are to be sold in periodic marketplaces. Vendors use several modes of transportation to reach larger periodic marketplaces. There is evidence that the selling vendors and the service providers use different modes of transportation.

The table 6 shows that a significant majority, 87.59% of vendors, reported owning a vehicle. In contrast, only 12.41% of vendors indicated that they do not own a vehicle. The cumulative percentage confirms that 87.59% of vendors are vehicle owners, and when combined with non-owners, the total reaches 100%. This data suggests that most vendors in rural periodic market centres rely on their vehicles for transportation, while a smaller proportion depends on alternative means.

Table.6. Ownership of Vehicle used by Vendors in Rural Periodic Market Centres

Ownership of vehicle	Frequency	Percentage	Cumulative Percentage
Yes	473	87.59	87.59
No	67	12.41	100.00
Total	**540**	**100.00**	

Source: Field Survey 2023 - 2024

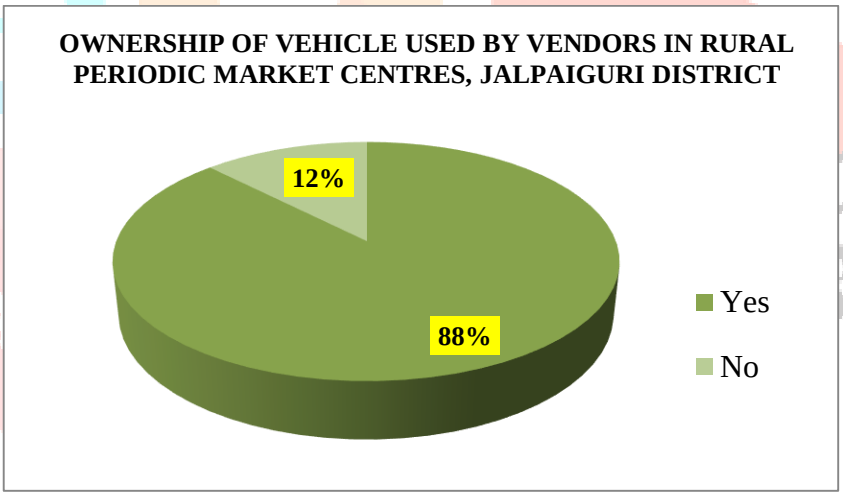


Fig.7. Ownership of Vehicle used by Vendors in Rural Periodic Market Centres of Jalpaiguri District

Beyond walking and bi-cycle mode the producer vendors use various modes of transportation such as two wheeler, toto, tempo/auto, paddle van, tracker etc. based on the nature and amount of goods to be traded, as well as the distance between rural periodic market centres and places of residence. Most vendors who sell goods have been seen travelling often in their vehicles, using them for both purchasing goods from large places and selling them at different rural periodic markets. Since they often have to travel to different long-distance markets to purchase goods at a lower cost toto, auto/tempo and tracker/pickup van are a very common mode of transportation among purchasing vendors. In the same way, full-time service providers also use toto, two wheeler auto/tempo and tracker/pickup van to travel to the marketplace.

Table.7. Different Types of Vendors and their Modes of Transportation

Type of Part-time and Full-time Vendors	Bi-cycle	Two wheeler	Paddle Van	Toto	Auto/ Tempo	Tracker/ Pickup Van	Total
Producer Vendors	15	27	16	58	20	5	141
Purchasing Vendors	9	36	33	67	35	3	183
Selling Vendors	11	29	31	50	27	6	154
Service Providers	6	6	12	25	8	5	62
Total	**41**	**98**	**92**	**200**	**90**	**19**	**540**

Source: Field Survey 2023 – 2024

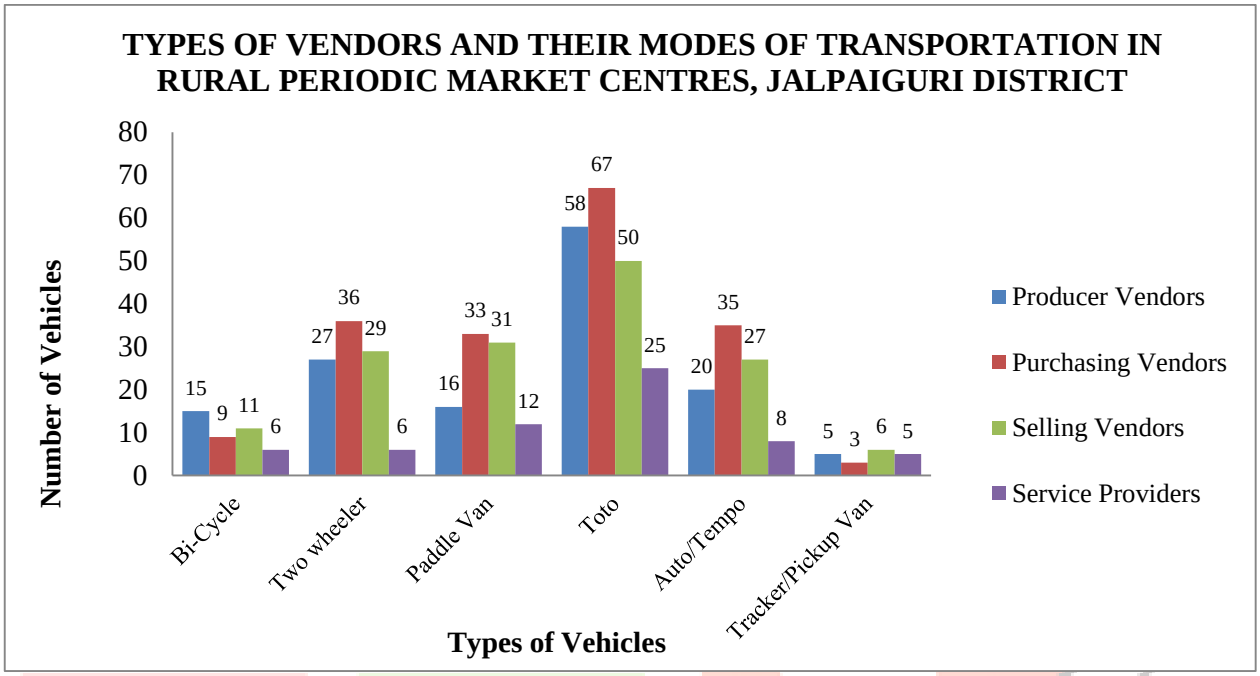


Fig.8. Different Types of Vendors and their Modes of Transportation in Rural Periodic Market Centres of Jalpaiguri District

Table 7 delineates the various transportation modes utilized by different categories of vendors, providing insights into their operational preferences. Producer vendors, numbering 141, predominantly rely on paddle van (58), indicating the importance of this mode for transporting goods efficiently. Additionally, 27 producers use two-wheeler, 20 utilize auto or tempo, while 15 prefer bi-cycle, and 5 depend on tracker or pickup van. In the case of purchasing vendors, the total rises to 183, with a notable inclination towards auto or tempo, favoured by 35 vendors for their capacity to transport larger loads. Two-wheeler and paddle van follow closely, used by 36 and 33 vendors, respectively. A smaller number, 9, opt for bi-cycle, and just 3 rely on tracker or pickup van, illustrating a practical approach to logistics. The selling vendors, with a total of 154, showcase a diverse array of transportation options. Paddle van emerge as the most utilized mode, with 50 vendors choosing this for its ability to facilitate sales activities effectively. Two-wheelers are used by 29 vendors, while 27 rely on auto or tempo. Bicycles and tracker/pickup vans are less common, employed by 11 and 6 vendors, respectively. Lastly, the service providers total 62 and display a distinct transportation preference. Paddle van lead the way, utilized by 25 vendors, followed by 12 using two-wheeler. The reliance on auto or tempo is moderate, with 8 service providers choosing this option, and bi-cycles and tracker/pickup van are used by 6 and 5, respectively.

Overall, the cumulative total of **540** vendors reveals a complex landscape where transportation choices vary significantly among vendor types. The consistent preference for **paddle van** across categories highlights their critical role in supporting vendor operations, while the diverse modes of transport reflect the specific logistical needs of each vendor group. This data underscores the essential nature of transportation in enhancing the efficiency and effectiveness of vendor activities in the marketplace.

Factors Affecting the Movement of Sellers in Rural Periodic Market Centres

Periodic markets serve not only as primary outlets for retail goods but also as key points for aggregating rural surpluses (Smith and Hay, 1980). Many vendors in these markets are also involved in activities such as crop production, live-stock herding, collecting produce from growers for resale, processing goods, and crafting. These activities often align closely with their objectives in market trading. The main factors influencing the travel patterns and behaviours of vendors include the availability of comprehensive information about market locations, accessibility, and timings within their visitation range. Vendors typically aim to minimize costs by identifying the most advantageous set of periodic markets based on travel distance and potential economic benefits.

The movement of people, goods, and information between market centres creates an integrated social and spatial system, making the region function as a cohesive whole (Kisslong, 1969). Producer vendors usually visit nearby markets to sell perishable goods, enabling them to return home by the end of the day. Conversely, vendors dealing in durable crafts, bulky items, or livestock tend to focus on select major markets within their vicinity. The development of transportation infrastructure and the availability of transport options have further enabled vendors to follow a predominantly home-based travel pattern, where they complete market activities and return home the same day. Service sellers often follow a different pattern, moving across multiple market centres to maximize the reach and sale of their services. Producer vendors, who rely on their production, require rest days to prepare their goods. As a result, they generally visit markets at intervals of one or two days. In Jalpaiguri District, this home-based journey to and from rural periodic markets is particularly prominent among vendors, reflecting a preference for balancing market participation with production needs.

Centrality and Hierarchy of Rural Periodic Market Centres

The multi-functional method has been adopted for the present study in which 44 different parameters have been considered. The values of centrality have been obtained by using ‘Location Quotient Method’ of Davies (1967) and four-point weight age a scale varying from 1 (lowest) to 4 (highest) is applied based on comparative and relative importance to selected rural periodic market centres in the study region. The weight age scores of all the rural periodic market centres have been considered for the centrality scores for all the variables calculated by adding up all values of single variable, we get composite centrality index or value for each market centre. After assigning the values of the various 44 parameters Centrality Index for each rural periodic market is calculated and based on calculating the Centrality Index, rural periodic markets were divided into a different order of hierarchical groups in the study region. For the exposition of hierarchical pattern of rural periodic marketplaces the assigned weight age values of functional indicators,

such as periodicity, economic activities, marketing pick time, commodities transaction, accessibility, distance of market from nearest town, establishment nature, marketing duration, market area, market range, market shops/stalls, market participants, marketing commodities, and market types are taken into consideration.

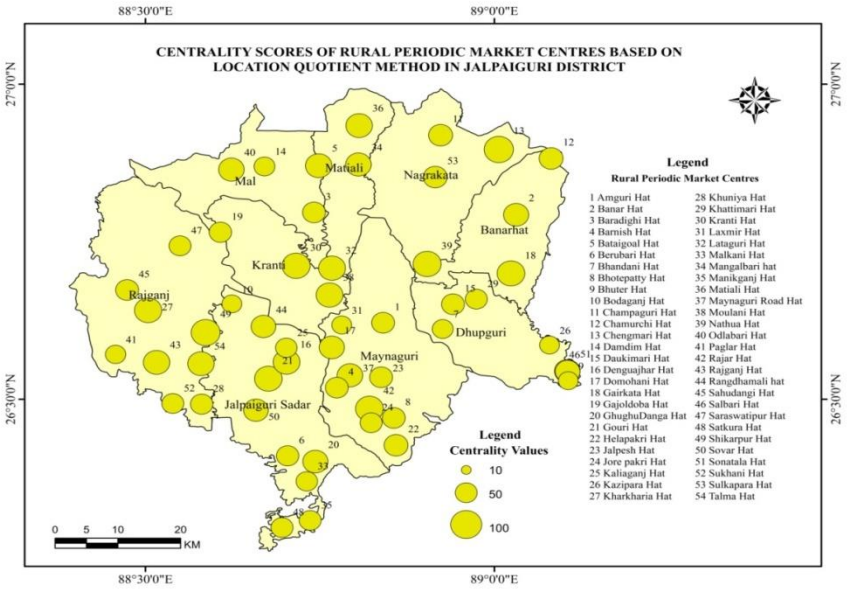


Fig.10. Centrality Scores of Rural Periodic Market Centres Based on Location Quotient Method in Jalpaiguri District

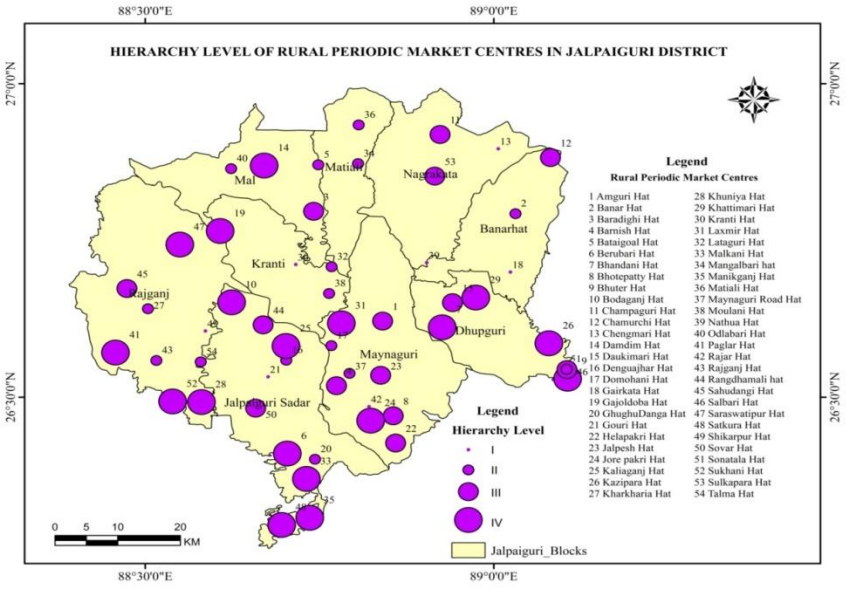


Fig.11. Hierarchy Level of Rural Periodic Market Centres in Jalpaiguri District

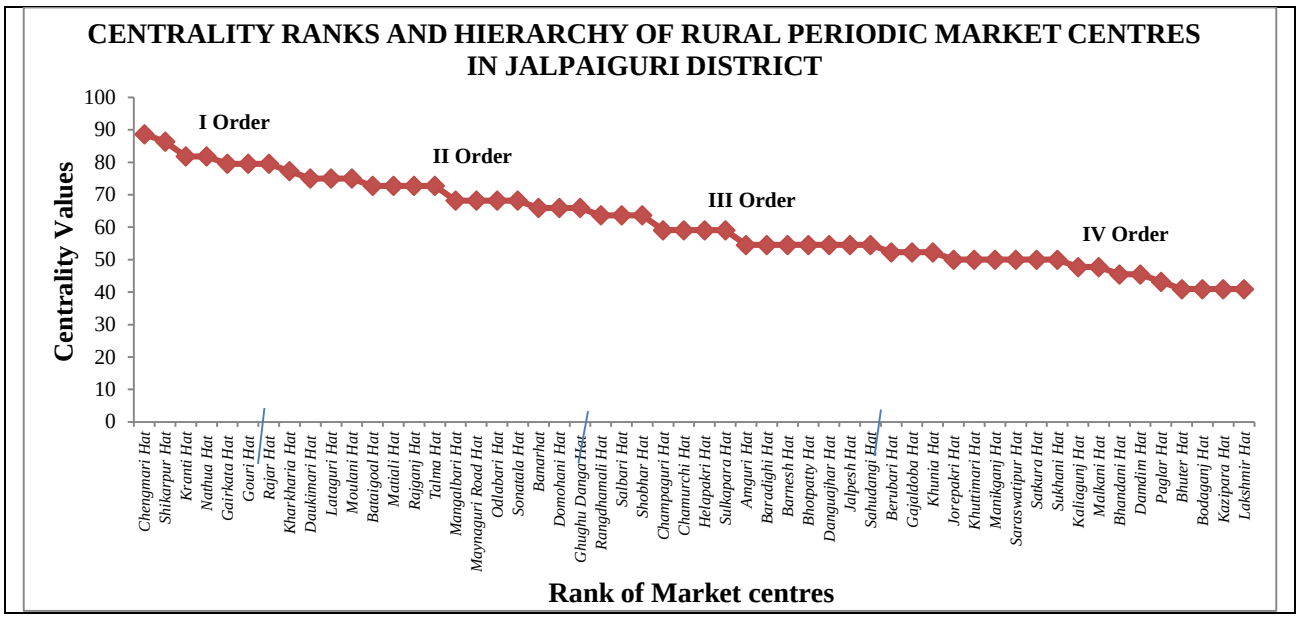


Fig.12. Centrality and Hierarchy of Rural Periodic Market Centres in Jalpaiguri District

Table.8. Hierarchic Order and Centrality Score of Rural Periodic Market Centres

Hierarchic Order	Category	Centrality Range	No. of Rural Periodic Market Centres	Percentage to Total
I	Regional	76.71 - 88.64	7	12.96
II	Sub-Regional	64.78 - 76.70	15	27.78
III	Intermediary	52.85 - 64.77	14	25.93
IV	Local/ Small	40.91 - 52.84	18	33.33
Total			**54**	**100.00**

Source: Compiled by the Researcher based on Field Survey 2023 - 2024

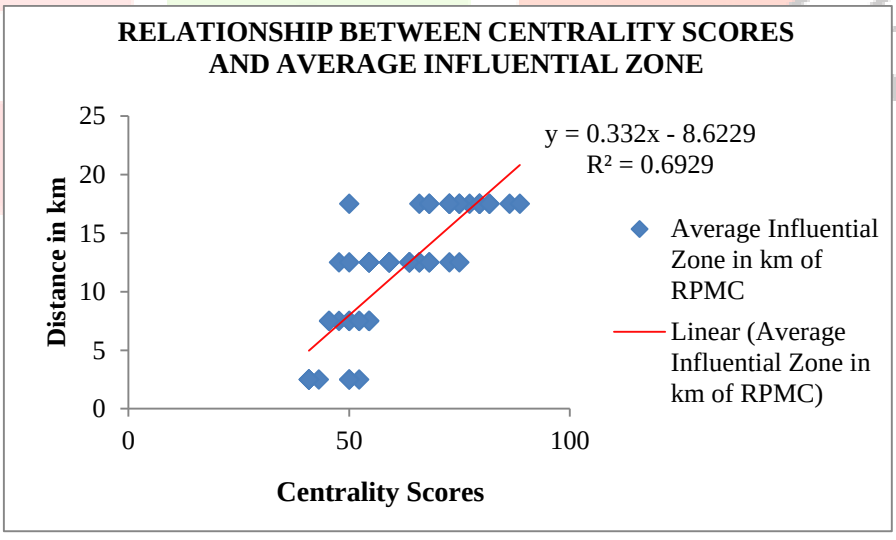


Fig.13. Relationship between Centrality Scores and Average Influential Zone of Rural Periodic Market Centres, Jalpaiguri District

The linear regression equation is y=0.332x−8.622; y represents the average influential zone (distance in km) and x represents the centrality scores. The R^2 value is 0.692, suggesting that 69.2% of the variation in the influential zone is explained by the centrality scores. This indicates a moderately strong positive correlation. The scatter plot shows a clear positive trend, with most points clustering along the regression line. Higher centrality scores correspond to larger influential zones, signifying that more central markets attract

participants from a wider spatial area. Some markets with high centrality scores but relatively smaller influential zones could face external constraints such as competition from nearby markets or a lack of resources. Conversely, markets with lower centrality but larger zones might operate in underserved regions with fewer alternatives.

VI. MAJOR FINDINGS

The study revealed several critical findings about the behaviour and socio-economic characteristics of vendors and the dynamics of rural periodic markets in the Jalpaiguri district. One of the significant observations was the predominance of male vendors (86.30%) in these markets, with the majority belonging to the 46–55 age groups. Female participation remained limited at 13.70%, influenced by societal norms and challenges associated with market accessibility. Among the women who participated, most were aged between 36 and 55 years, balancing household responsibilities with market activities.

Vendors' earnings varied, with 24.26% earning Rs1501-2000 per day, while 11.67% earned below Rs 500 daily. Despite modest earnings, many vendors viewed market participation as a supplementary income source alongside agricultural work. Vendors were categorized as full-time and part-time, with full-time vendors dominating (59.63%) and engaging primarily as selling vendors, purchasing vendors, or service providers. Part-time vendors, mainly producer vendors (64.68%), operated as supplementary traders, bringing surplus agricultural produce to the markets.

The spatial movement of vendors was influenced by their roles and commodities. Full-time vendors travelled an average of 10–12 kms weekly, while part-time producer vendors travelled shorter distances (around 9.39 km) due to localized operations. Service providers covered longer distances, averaging 12.34 km, as their services catered to diverse needs. Modes of transport varied, with 87.59% of vendors owning vehicles. Two-wheelers, paddle vans, and tempos were commonly used based on the distance and type of goods transported.

The markets exhibited a hierarchical structure based on centrality indices, derived using the Location Quotient Method. Markets were classified into four levels: regional, sub-regional, intermediary, and local. First-order markets, Gouri Hat, Shikarpur Hat, Rajar Hat, Chengmari Hat, Kranti Hat, Gairkata Hat and Nathua Hat, demonstrated high centrality and attracted participants from across the district. In contrast, lower-order markets primarily served local needs with limited commodities and participant engagement.

Overall, the findings highlighted the critical role of rural periodic markets as hubs of economic and social interaction. However, challenges such as limited female participation, transportation constraints, and the narrow reach of lower-order markets underscored the need for targeted interventions to enhance market accessibility and inclusivity. These insights offer a comprehensive understanding of how rural markets function and their impact on regional socio-economic dynamics.

VII. CONCLUSION

Rural periodic markets play a pivotal role in transaction of agricultural commodities by facilitating the movement of goods and services in remote areas. With the advancement of marketing process today still rural periodic markets bears its traditional marketing process. Even in today the residents of rural area usually visit the different periodic markets in their vicinity. Owing to the high turnover vendors do not bother to travel more distance periodic market centres. Specialization of commodities, seasonality is the unique characters of different rural periodic market centres. Although the markets are arranged in spatial and temporal aspects on judicial basis that none of the smaller markets are affected owing to the proximity larger market centres on the same day of the week.

However, challenges like transportation issues, limited participation by women, and restricted market ranges for lower-order markets need to be addressed to optimize market potential and inclusivity. The hierarchical analysis aids in understanding market dynamics and informs strategies for regional development planning. Though, the study has proved that most of the vendors prefer to home based journey to rural periodic markets. The traditional cultures are incorporated with the modern cultures and the materialistic culture are also transforming through these periodic market centers and seller's movement around these centres (Roy & Roy, 2018). Although, the vendor's movement depends on the conveniences of their own in terms of distance, cost, turnover etc.

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