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COMPARING DISTRIBUTION TRENDS IN SELECTED DEVELOPED AND DEVELOPING COUNTRIES

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Abstract

Research indicates that each country has a unique distribution channel structure which is the product of its society and environmental trends. In this conceptualize study the wholesale distribution channel trends in Japan, Germany, Nigeria and South Africa were researched to illustrate the position of the wholesaler in the distribution channel and determine whether there are grounds for the theory that distribution channels reflect the economic development of countries. The economic phase of the specific country reflects the type of commercial institutions and the research indicated that there is a tendency for certain distribution trends in the economic development phases of countries that correspond. The conducted research confirms the theory that distribution channels reflect the economic development of countries.

Key Words: Distribution channel trends, Distribution channel structure, Economic development, Developing countries and Developed countries.

1.1 BACKGROUND

There seems that there exist a close relationship between the distribution channel structure of a country and the social, cultural, economic, technological and political environmental conditions. Research by Mallen (1996), and Bowersox (2012) indicated that each country has a unique distribution channel structure which is the product of its society and environmental trends. When there are social and environmental changes in a country, the distribution channel necessarily changes as well. The evolution of distribution channels is therefore closely related to the economic development of the country as a whole. It seems that when a country achieves a higher level of industrialisation, there is a tendency for its commercial institutions to be upgraded to the level that prevails in more developed countries. It

seems that the economic phase which the specific country has reached reflects the type of commercial institutions such as manufacturing, wholesaling and retailing found there. Manufacturing, wholesaling and retailing accordingly undergo characteristic changes as the economy of the specific country develops. There is therefore a tendency for the same distribution trends to crop up in different countries that are at the same stage of development. The stage at which a wholesaler in Nigeria was operating in 1963 can be compared, according to Onyemah and Akpa (2016), with the stage a German wholesaler was going through in the early 1800s.

In this article we shall be describing wholesale distribution trends in Japan, Germany, Nigeria and South Africa to illustrate the position of the wholesaler in the distribution channel and determine whether there are any grounds for the theory that distribution channels reflect the economic development of countries. Before the distribution trends are discussed, economic growth and development will briefly be defined.

1.2 LITERATURE REVIEW

1.2.1 ECONOMIC GROWTH AND DEVELOPMENT

Economic growth can be defined as an extension of a nation's ability to produce the required products and services. The productive capacity of an economy depends on the quality and quantity of the country's resources, as well as the level of technology. Economic growth must incorporate the expansion and improvement of these factors of production (Onyemah and Akpa, 2016). An economy can achieve economic growth without economic development, but not the other way round. A country such as Nigeria, which depends on its oil sales, can increase its growth rate by marketing more oil, but its economic development may be minimal, unless new industries that are capable of producing an output are created. There are several requirements for economic growth and development, namely:

- (1) The existence of a large labour force does not guarantee economic growth and development, as has been demonstrated in many of the developing countries. The labour force must have the necessary education and work skills.
- (2) Sufficient capacity of a satisfactory quality in the form of raw materials, machinery and equipment is required. The supply of capital is dependent on the level of savings, which is the difference between income and consumption.
- (3) In countries where the population is poor and their means are merely sufficient for subsistence, there is little difference between income and consumption, and capital formation cannot take place.
- (4) Technology must be suited to the country's economy. It is difficult for capital-intensive technology to fit in with conditions in developing countries, where there is a labour surplus. The result is a shortage of capital resources.

It appears that each country's experience of economic development is unique, as a result of social and political conditions. There are nevertheless certain phases that countries in the process of economic development pass through. Countries pass through four phases in the process of economic development: Traditional community, Economic take-off, Economic

maturity and Mass consumption. The different phases a country passes through on its path to development are briefly discussed below.

THE TRADITIONAL COMMUNITY

During this first phase most of the resources are concentrated on agriculture. There is no perceived need for higher prosperity and there is little social mobility of resources.

ECONOMIC TAKE-OFF

This phase lasts for about 20 to 30 years and the pace of social and economic change suddenly accelerates. The process is promoted by the saving and investment of an increase in the Gross National Product, and by the establishment of the manufacturing sector. Social customs, state institutions and practices, and economic institutions are formed.

ECONOMIC MATURITY

This is a period of sustained increases in the Gross National Product and the per capita product. This stage can last for 60 years and requires technologically advanced industries. Manufacturers produce what the market requires and what the available resources allow them to produce.

THE MASS CONSUMPTION OF PRODUCTS

This stage is marked by the mass production of durable products and of services. The production of these products and services enables the greater part of the population to maintain a high standard of living. Marketing (2014) contends that the process of development depends not only on the establishment of agriculture and manufacturing in a country, but also on the development of an effective marketing system. An effective marketing system depends on the economic level of the developing country.

DISTRIBUTION TRENDS IN DEVELOPED COUNTRIES: GERMANY AND JAPAN

The developed countries are economically the most advanced capitalistic countries of Western Europe, North America, Australia, New Zealand and Japan. These countries were the first to experience sustained and long-term economic growth (Todaro and Smith, 2014). Market and mixed economic systems are found in developed countries. In economic systems of this kind economic decisions are largely left to the individual members of the community and are regulated by the operation of the market mechanism. Developed countries are organised according to the market principle. The government, in carrying out its collective activities, enters the economic field and modifies the market mechanism. This is why we cannot really speak of pure market systems, but rather of mixed economic systems. The next point that we discuss is distribution trends in Japan and Germany.

JAPAN

An economic miracle has taken place in Japan since the Second World War and over a relatively short period Japan has succeeded in becoming a world market leader in many industries. Industries in which the Japanese have especially excelled are those that manufacture motor vehicles, motor cycles, electronic products, steel and optical instruments. Japan has very few natural resources and therefore companies concentrate chiefly on industries that require a high level of technological skill, are labour-intensive but use few natural resources. Japan is the first developed country that has succeeded in industrialising in

the world. The Japanese economy has been the subject of international research in the hope that Japan could serve as a model for other developing countries which are passing through the process of economic development. In contrast with South Africa, Japan is a country with few natural resources but Japan has nevertheless succeeded in becoming an international marketing giant.

Kotler and Armstrong (2016) observe that one of the main factors responsible for Japan's success is an effective and purposeful marketing strategy that ensures that consumers are aware of the products on offer. The Japanese possess an outstanding ability to select a suitable market, enter the market, build up a market share and protect their market share against competitors.

Japanese manufacturers, wholesalers and retailers vary in size from very large to very small. Big manufacturers seldom undertake intensive marketing of their products which is a typical characteristic of a developing country. Marketing is usually regarded as the most developed part of the economic system in developing countries. The reason for this is possibly that the industrial countries normally use the latest technology when they put up factories, since the classical economists believed that a product that was manufactured with the aid of high-level technology would sell itself.

Manufacturers in Japan also concentrate on the latest technology for product development so that they can be leaders in the global market. This trend is also typical of a developing country. Marketing (2014) cites the example of a modern manufacturing enterprise that established factories in developing countries. The production tends to be the same, but the developed countries' modern distribution methods and high degree of technological development and the intensely competitive marketing factors cannot be directly transferred. The marketing methods should therefore be adapted to the developing countries' needs and to the existing infrastructure. Japan has been eminently successful in adapting Western technology to local conditions.

Notwithstanding the success Japan has achieved in the global market, manufacturers are subject to capital limitations because banks are very reluctant to lend money to manufacturing enterprises. The manufacturer therefore does not have the capital for direct marketing and is forced to rely on wholesalers for financing. Unfortunately this situation means that the manufacturer is able to exercise very little control over the distribution channel. The result is long, multilevel distribution channels. Todaro and Smith (2014) note that Japanese manufacturers prefer long, multilevel distribution channels for the following reasons:

- (1) Product diversification is widely found and this allows room for intermediaries in the distribution channel. The intermediaries in the distribution channel vary, from very large and financially powerful undertakings to small "Mom & Pop stores".¹
- (2) As a result of the Japanese economy's rapid growth rate and the diversification of new industries, there are no established channels for most new products. When distribution

¹ The "Mom & Pop shops" are a type of retailer (neighborhood shop) found in Japan. These retailers sell single products or a limited line of products and have a relatively small turnover and usually specialize in certain products, such as paper fans.

takes place through retailers of various kinds, a large number of different types of wholesalers are necessarily involved as well.

- (3) The erection of supermarkets and discount shops contributes to diversity among the retailers. Various wholesalers are therefore required to service the large number of retailers.

Todaro and Smith (2014) provide the following reasons for the development of the long, multilevel structure of the distribution channels in Japan:

- (1) The national market covers long distances because of the long, narrow geographical shape of Japan.
- (2) The 126.8 million consumers with a per capita income of \$11 360 provide a large domestic consumer market.
- (3) The buying habits of the consumers make intensive retail distribution of certain kinds of products necessary. In the large cities like Tokyo there are rows of small convenience shops that are within walking distance of all consumers.
- (4) The capacity of most manufacturers, wholesalers and retailers is small and they are hampered by a lack of capital. As a result, additional intermediaries are required in the channel to carry out the marketing activities.
- (5) The culture of Japan favours free entrepreneurship, with the setting up of numerous small enterprises and the consequent discouragement of the growth of large-scale enterprises.
- (6) Manufacturers have little involvement in marketing operations, which creates opportunities for intermediaries in the distribution channel.

A multilevel structure of this kind obstructs the rapid, large-scale distribution of products and consumers have to pay higher prices. The local consumer market pays the same price for products as the international consumer market. The manufacturers mainly use wholesalers to market their products and Japan is known as a nation of wholesalers. Japan has more wholesalers and retailers in relation to its population than any other developed country. There are virtually twice as many wholesale and retail institutions as in America. This is underlined by the fact that the total volume of wholesale sales was 4.8 times that of retail sales in 2016 (www.mcmillanspeed.com/2014). Bowersox and Cooper (2012) observe that there are 1 721 000 retailers as against 429 000 wholesalers (4.01 retailers for every wholesaler). A typical distribution channel for consumer products in Japan includes: Basic product manufacturer, General wholesaler, Basic product specialist wholesaler, Speciality wholesaler, Regional wholesaler, Local wholesaler, Retailer, Consumer.

The dominant position of the wholesaler in Japan's distribution channel is evident and a surprising number of wholesalers are found in individual distribution channels. Products pass through the hands of various kinds of wholesalers: primary, secondary, regional and local wholesalers. The wholesalers also vary considerably in size. On the one hand, a number of enormous and highly integrated general wholesalers are found which are generally referred to as "trading companies". These large undertakings market a wide range of products and are

an extension of the Zaibatsu² enterprises which existed even before the Second World War. On the other hand, small one-man businesses are found which only distribute products to the local market. These small wholesalers naturally do not have the bargaining power of the large ones. The bargaining power of a big wholesaler is so great that certain industries are controlled by the wholesale trade. This is one of the most striking differences between the marketing methods of America and those of Japan. In Japan virtually no direct marketing takes place, irrespective of how large the retail institutions are. Most manufacturers rely on wholesalers for marketing.

The sequence in the distribution channel is strictly adhered to. For example, the general wholesaler sells only to the speciality wholesaler, who concentrates only on a restricted number of product ranges. The regional wholesalers situated in large business centres sell only to local wholesalers, who market only in their own specific areas. Even large retailers in the cities buy from the local wholesaler and not from the manufacturer or regional wholesaler, as they do in South Africa. Possible reasons for the dominant role played by the wholesaler in the Japanese distribution channel are:

- The wholesaler tries to sell a full range of products, although not all the products are stocked. Wholesalers are able to do this, since they can quickly and easily buy supplementary products from other wholesalers.
- The wholesalers try to serve as large a market area as possible, which means that they have to sell products to small wholesalers in remote areas.
- The assistance and financial support afforded by the retailer. The retailers have limited capital resources and the average initial capital investment of a retailer with four or fewer employees in 2016 was 2000 American dollars (McMillan, 2016).

Retailers of this kind have a lot in common with the spaza shops found in South Africa which also rely on family members for labour. In Japan 29 percent of the wholesalers and 77 percent of all the retailers are dependent on relatives to staff the shops. These relatives are not counted as a formal part of the labour force of the retail businesses. The retail businesses, unlike spaza shops, are merely moonlighting operations, not the chief source of family income. Japan can rightly be defined as a nation of shopkeepers, because most of the population sell merchandise on a part-time basis.

Another interesting distribution trend in Japan is that most consumer products are sold by small neighbourhood shops and because of lack of capital and physical space, retailers tend to be highly specialised. Enterprises of this nature account for 56 percent of Japan's retail sales. These small retailers also play a dominant part in Japan's distribution channel. In contrast to the situation in Japan, small retail sales in America make up only three percent and in South Africa the small retailers handle about 36 percent (www.forbes.com, 2016).

The popularity of the small retailer in Japan is another important consumer characteristic. Consumer characteristics such as limited income and storage facilities, together with a strong

²The structure of the Zaibatsu more or less corresponds to that of the Western conglomerate enterprises; the Zaibatsu include banks, various local manufacturers, as well as international manufacturers. The Zaibatsu also conclude contracts with both small manufacturers and wholesalers.

preference for fresh food, make it essential for housewives to undertake regular, daily shopping trips. This creates marketing opportunities for neighbourhood shops situated close to the consumer. These conditions call for a distribution structure that incorporates a large number of small, conveniently established retailers supported by a large number of wholesalers.

To sum up, the wholesaler can be said to play a very important part in the Japanese distribution channel. Because of environmental influences, manufacturers and retailers rely on wholesalers, which is why no attempts are made to force the wholesalers out of the distribution channel.

GERMANY

The development of the wholesale trade followed much the same pattern in Germany as in the most developed countries, such as America. The German markets had an important place in the wholesale structure in the eighteenth century. Even up to 1841 the market at Leipzig handled a large volume of products. In around 1850, however, the markets began to show a declining trend and itinerant merchants began to appear. Because of the reduction in the number of Hansa towns, there was such a decline in trade that by 1860 relatively little wholesale trade was conducted in Germany. Fortunately the development of infrastructure and the Industrial Revolution caused the wholesale trade in Germany to grow rapidly. In 1886 Berlin established a central hall for food vendors.

After the First World War the German wholesale trade was in a state of flux and the future seemed uncertain. Between 1920 and 1940 wholesalers strengthened their position by making certain changes to their marketing operations. Even before the Second World War manufacturers began to reduce the powers of the wholesalers in the distribution channel. Manufacturers decided to reduce their reliance on wholesalers and they began to take marketing initiatives, arranging their own financing and undertaking intensive marketing research. The ultimate goal of manufacturers was to exercise more control over the distribution channel and to market their own products. The established manufacturing sector was in a financial position to undertake marketing activities. Manufacturers therefore set up their own outlets and warehouses and also rendered a customer service to consumers. The manufacturer therefore largely took over the marketing activities of the wholesale sector and began marketing directly to the retailer or consumer. The position before the Second World War was that traditional wholesalers were not meeting the marketing needs of the manufacturers and retailers.

An important distribution trend in Germany was that after the Second World War German wholesalers underwent a renaissance. There was a big financial revival in the wholesale trade. The development of the wholesale trade in Germany showed two marked distribution trends:

- (1) In conjunction with the Marshall plan, the free market system increased the financial strength of the wholesale sector. The functions of the wholesalers could very easily be taken over by other members of the channel, and wholesalers therefore continually had to prove that they were necessary in the channel.
- (2) Since the war wholesalers have made increasing use of advanced methods and techniques. Germany has followed in the footsteps of advanced industrial countries,

which is why trends in wholesaling in Germany have shown similarities to those in highly developed countries such as America.

The reason for the post-war renaissance in the wholesale trade in Germany can be directly related to the increase in the number of services made available to the consumer. The decision by manufacturers to include retailers in the distribution channel again was another contributory factor. Manufacturers realised that direct marketing causes many problems. Keen competition among manufacturers was another reason why marketing activities were again diverted to the wholesalers.

Wholesalers in Germany have learned to adapt to changed circumstances. New services are being offered to retailers, such as the taking of orders and visits from the staff of wholesalers to replenish stock. Wholesalers form associations and voluntary chains in order to remain in the channel. This development, which had its origin in America, only gained ground in Germany after the Second World War. In 2016 there were 16 large voluntary chain groups in the food wholesale business that incorporated about 600 wholesalers and 75 000 retailers. The cooperative wholesale groups, EDEKA and REWE, jointly had 50 000 participating retailers (Marketing, 2014). Another distribution trend in Germany is that there tend to be fewer, but bigger, retailers, because the small retailers do not have sufficient capital to invest in large projects. In the food industry the larger retailers are generally replacing the smaller operators. According to Sabai (2013), only five percent of the total food sales are handled by small retailers. The small family ("Mom and Pop") stores are disappearing and supermarkets, large chain stores and mail-order businesses are becoming increasingly popular (Riley (2012). Large-scale retail operations are therefore the biggest threat to wholesalers in Germany. Through improved service and effective distribution to the manufacturer and the retailer, wholesalers try to survive in the distribution channel.

Another distribution trend in Germany was that the wholesaler has split his activities into full service and cash-and-carry units. The full service wholesaler does not succeed in meeting the needs of both large and small retailers. Many wholesalers reach the point where they decide to start their own cash-and-carry unit. The cash-and-carry wholesaler comes into being when the wholesaler develops independent branches.

To summarize, the position of the wholesaler in Germany may be described as less prominent than in Japan. The reason may be that neighbourhood shops still play a very prominent role in the distribution channel in Japan, and a good many wholesalers are required to service these retailers.

DISTRIBUTION TRENDS IN DEVELOPING COUNTRIES

In the less advanced social structures that are characteristic of developing countries, the economic behaviour of the citizens is governed by tradition. Production tasks are handed down from one generation to the next and performed in the customary way. While division of labour, capital formation and trade are found, they occur within the bounds laid down by tradition. The members of such societies therefore have only a very restricted economic freedom of choice and their principal goal is survival (Riley, 2016). Even the more developed economic systems show traces of the remnants of tradition.

In most developing countries the production of primary products (agriculture, forestry and raw materials) overshadows secondary (manufacturing) and tertiary (service) activities. Most

developing countries need international trade to finance developing projects, but unfortunately there is usually a real capital outflow. The developing countries therefore have difficulty in exporting secondary products. A more acceptable policy is to attempt to export to other developing countries. According to Riley (2012) saving is an important condition for capital formation. The developing countries are caught in a vicious circle of low savings and consequent low capital formation, with a low GNP so that all the financial resources are consumed in the subsistence economy. The distribution trends in Nigeria and South Africa will be discussed in the following section.

NIGERIA

In developing countries the state usually takes the lead in arranging development programmes to regulate the economy. In Nigeria, however, the state believes in the minimum intervention in the economy (Ebay, 2013). Nigeria is classified as a relatively poor country but it has the potential to become an influential African country. Nigeria has a population of 251.8 million and about 49.9 percent of the Nigerian population live in the urban areas (a characteristic of a developing country) (www.worldometers.info 2017). The profits from the Nigerian oil resources have resulted in Nigeria's developing a good infrastructure. Nigeria is a former British colony; after the industrial revolution in England Britain was anxious to exploit African markets and create a market for British textiles and other manufactured products. During the seventies there was a dramatic shift in Nigeria away from agriculture and in the direction of the manufacturing and construction sector. This caused widespread unemployment for the illiterate sector of the population. Nigeria can boast of a GNP of over \$521.8 million a year, but unfortunately it has a very large population to support (www.google.co.zaNigeria+GDP). The market is large and the traders on the market specialise in a limited line of products, such as material, but others sell a broader product range that includes consumer articles. Market traders' stock is limited to whatever they can carry on their heads.

According to Ebay (2012), women play a dominant role in the Nigerian distribution structure. A similar trend is found in America where, according 53 percent of women were working in the distribution industry in 1939. They form a composite hierarchy of "Mammy traders"³, varying from relatively large wholesale enterprises to the "Petty mammy traders"⁴ in the local market. The customers of the "petty traders" may make purchases such as one razor blade, two cigarettes or a handful of salt. The problem with this distribution channel is that there are too many petty traders, which pushes up the final price of the product pretty high. Multilevel wholesalers are usually found in developing countries such as Nigeria. Another important distribution trend is that the urban major wholesalers usually function as importers. An interesting characteristic of these traders is that they usually trade the surplus production of the area and collect raw materials, which they then export. Various marketing activities are combined, as when the local customer exchanges his coconuts for merchandise and the trader collects the raw materials and exports them in large quantities. The rate of return and the profits in the distribution of products are too low to attract capital, and a shortage of capital arises. This prevents new wholesalers from entering the industry.

³The "mammy traders" are a kind of wholesaler found in Nigeria. They could be described as full service wholesalers.

⁴The "petty mammy traders" are a kind of retailer found in Nigeria. They sell goods in small quantities. The "petty mammy" keeps a limited stock of products and sells mainly food, such as bread and salt.

The established wholesalers concentrate on products with a high rate of return, such as liquor, medicines and imported merchandise. As a result of these economic forces, the wholesale trade is divided into two groups. One group consists of wholesalers that have considerable capital resources and can easily obtain loans and the other group of individual traders that rely on individual savings and ploughed back profits World Bank Report (2016). Wholesalers dominate the distribution channel in Nigeria. They form a strong competitive force in the channel and handle large quantities of goods. A notable characteristic of the Nigerian distribution channel is the large number of intermediaries involved in the distribution channel. One reason for this multilevel channel structure is that the distributors in the distribution channel do not specialise in marketing activities, because the storage techniques and infrastructure available to them are still at a very primitive level, as is typical of developing countries. The distribution channel for manufactures and local food products usually consists of an importer and local manufacturers, a wholesaler, several "petty traders" and the consumer. The wholesalers appear to play a dominant part in the Nigerian distribution channel. In line with the general trend in developing countries, both the manufacturer and the retailer still have a need for wholesalers as part of the distribution channel.

SOUTH AFRICA

South Africa is regarded as a developing country in the later phases of development. The country has a population of about 55.5 million, of which about 65.3 percent live in urban areas (Statistics SA, 2016). The economic system is a mixture of traditional, market-oriented and mixed systems. The market economic system is dominant in certain communities in South Africa, but tradition nevertheless plays a large and important role in the decisions of many individuals. This explains the origin of the continent of Africa its economy is based chiefly on Western European institutions, and not on the institutions developed by the indigenous population of Africa (Pride and Ferrell (2016). Technological level production in South Africa falls into two categories, namely:

- Modern, capital-intensive, export-oriented production, which is owned and managed chiefly by foreigners and which uses highly productive, advanced Western technology. Some examples are the modern factories in Gauteng.
- Traditional and labour-intensive production, chiefly for own consumption and the local market. This method is characterised by outdated production methods and low productivity, as in the small business enterprises in the black residential areas.

This technological dualism creates social divisions that seriously hamper the economic development of South Africa. The population of the traditional subsistence sector, which is similar to the populations of other countries in sub-Saharan Africa, will have to adapt their way of life to Western standards if South Africa wants to become a developed country. South Africa is a country with a relatively small population and a very limited domestic market. Both these factors have frustrated attempts to achieve a high average standard of living. There are several differences between the economies of South Africa and those of other African countries. South Africa has a sophisticated industrial, mining and agricultural sector. South Africa uses world-standard technology and accordingly has access to the global economy; no

other African country has this technology. Riley (2012) contends that these contrasts between South Africa and the other African countries mean that many economists who are seeking a future for the post-apartheid economy in South Africa will have to look to other countries for an economic model. Sabai (2012) proposes that "the model for a post-apartheid South Africa should be based on East Asia: South Korea, Taiwan or Japan. An economic model of anti-labour and low-wage policies was the hallmark of Taiwan during the crucial periods of economic growth.

The development of modern distribution channels in South Africa began when South African import houses started springing up. The importing houses were of British origin and were established in principal ports such as Cape Town and Durban. Importing houses were usually established in one port and did not have branches in other cities. These importers sold a whole range of manufactures and did not specialise in product ranges. The products were mainly imported from Europe. In addition, small independent retail trading stores were set up in the coastal towns and supplied with merchandise by the importing houses. There were also regular marketing days where mainly agricultural produce was sold, as well as stalls where imported merchandise was sold. In the interior the northward migration led to the establishment of wholesalers in towns like Grahamstown, Kimberley, Graaff-Reinet, Pretoria and Pietermaritzburg. The wholesalers in the interior did not import a great deal and mainly purchased merchandise from the importers at the ports. They therefore formed the second link in the development of the distribution channel in South Africa. Most of the traders in the interior were affiliated companies of the importers at the principal ports.

After the discovery of gold on the Reef in 1886, a metropolis sprang up which created a large consumer market. The mining centres on the Witwatersrand were the first competition for the importing houses, since the mining houses imported their own mining and technical equipment. Before the growth of Johannesburg, the importing houses controlled all exports, but after the large-scale development of mining on the Witwatersrand, exports were arranged directly from Johannesburg. The discovery of gold resulted in South Africa's rapid development from an agricultural country to traditional overseas sources, and forced local industries to produce these goods themselves. During this period Johannesburg became the country's main distribution centre. As a result of industrialisation, a radical change took place in the economic structure of South Africa. The South African economy became more diversified after the discovery of gold and the inception of secondary industry. This ushered in a new phase of development, centring on mining, which affected all spheres of the economy. Economic growth accelerated, and within five years Johannesburg had grown into a large city with thousands of inhabitants. The large domestic market was promising from the point of view of consumer products and an efficient transport system. By 1892 there was a direct rail link between Johannesburg and Kimberley and it was easier to transport products from the ports. Johannesburg became South Africa's main railway junction and many of the importers switched their headquarters to Johannesburg.

The importers fulfilled the marketing functions of a wholesaler, but with the growth of the wholesale trade the marketing functions of the importers shrank progressively. Technical developments, such as the improvement of transport facilities and communication, favoured the growth of the rural wholesalers and further reduced the importance of the importing houses. National advertising media, such as the radio and newspapers, contributed to the dispersion of markets throughout the country.

The process is still going on, and the South African market has not yet been fully integrated.

In 1967 there were still very few manufacturers that controlled distribution channels, because one of the conditions for controlling a distribution channel is a large, country-wide product turnover. At that time most local manufacturers still supplied the wholesalers, but there were already signs of growth in direct sales to the retail trade (Lambrecht 1967). Many manufacturers established their own wholesale branches. The manufacturer soon realised that in two cases especially the wholesale function can be performed far more cheaply by an independent wholesaler, namely where a limited product range or products with a low unit value are marketed. Fifty years ago an independent wholesaler, WG Brown, gave credit and undertook deliveries. WG Brown realised that deliveries to concession holders such as the retailer Spar could afford them an opportunity to survive in the distribution channel.

During the period from 1952 to 1985 this wholesaler grew by an average real annual rate of 4.9 percent. Wholesalers play an important role in the South African distribution structure. In rural areas the wholesalers are still very important in the distribution channel, but in the urban areas manufacturers tend to shorten the distribution channel, especially in the case of convenience products. The popularity of the wholesalers suffered a further blow with the emergence of large retailers who buy directly from manufacturers. The large retail trade takes over the marketing functions of the wholesalers, so that the wholesalers no longer have a place in the distribution channel. There is a tendency for individual sister groups to acquire an increasing share of total retail sales. In fact, only two percent of South African retailers are responsible for 68 percent of the total sales.

A distribution trend that is typical of developing countries is the prevalence of informal markets (street markets); these have become very popular in South African over the last few years. People who lose their employment in the formal sector attempt to make a living in this way. The influence of modern Western distribution institutions is to be seen in South Africa as well, for example in the emergence of modern retail businesses such as hypermarkets and cash and carry retailers. Many small grocery businesses (spaza shops) which sell convenience products to the end consumer exit in the black urban residential areas. In the rural areas these general dealers are still very popular; this is a characteristic trend in developing countries.

Another important distribution trend in South Africa is that the development of large-scale self-service retailers has had a definite effect on the wholesale trade. The large retailer, PicknPay have integrated the retail function with the wholesale functions and developed their own cash and carry wholesaler (Price Clubs) in order to gain more control over the wholesale functions in the distribution channel. Pride and Ferrell (2010) confirm that in America the Robinson-Patmans Act prohibits the integration of enterprises in order to overcome possible monopolies, but in South Africa there are no regulations forbidding this kind of integration. Interestingly enough, Marketing (2014) reports that in America the large retailers also attempted to force the full-service retailer out of the distribution channel in the early twenties.

The South African wholesalers combat this competition in two ways: firstly through the development of wholesale self-service outlets (cash and carry wholesalers). Secondly, they set up retail sales outlets and create manufacturing facilities. The merging of Metro and Score Foods under the Premier Group has meant that the Premier Group, as a manufacturer, can market its own products directly. The full service wholesaler therefore forms self-service

units that are very popular with small retailers. This trend corresponds to the trend towards full-service wholesalers in America in 1920, when the cash and carry wholesalers developed there. The independent retailers use the cash and carry wholesaler to keep the selling price of products low.

The wholesaler in the urban areas no longer merely carries out the traditional wholesale functions. The wholesaler controls big cash and carry outlets and becomes involved, through controlling companies, in manufacturing and packing and in the importing of products. The wholesale activities of cash and carry wholesalers have therefore diversified so that they market to small informal wholesalers (like spaza shops), formal retailers, catering businesses, as well as to the final consumer. The direct sales to the public by Macro could be regarded as an innovation in the wholesale trade in South Africa. The cash and carry wholesaler made provision for each of the above target markets in his product mix .

The modern wholesaler has no intention of being a passive observer while the manufacturer and the retailer attempt to force him out of the distribution channel. The distribution channels in the urban areas of South Africa are complex. There are five basic distribution channels in South African urban areas. The first distribution channel is the one where the manufacturer markets directly to the consumer. One usually finds this with public sector purchases. In the second distribution channel the manufacturer markets directly to the retailer, as in the large-scale retail trade. Large-scale retail trade handles about 74 percent of retail sales in South Africa, as against only 56 percent in Japan. The third distribution channel is the traditional distribution channel where the wholesaler is included in the distribution channel. This is the kind usually found in rural areas. The fourth distribution channel consists of the manufacturer, the wholesaler and the consumer. The cash and carry wholesaler sells directly to retailers for own consumption. The last distribution channel consists of the manufacturer, the wholesaler, the spaza shop and the consumer. This channel is found mainly in the less affluent suburbs.

For many years wholesalers have occupied a dominant position in the South African distribution channel but at present they are experiencing the same problems as in other countries because the concept of wholesaling is in the process of changing. Various trends, such as the movement of the population to the urban areas, the decentralisation of commercial institutions, and the improvement of infrastructure and communication influence the traditional wholesaling patterns. Changes in the environment and also the fact that both manufacturers and retailers are operating on a larger scale posed a threat to wholesalers. These changes have resulted in both manufacturers and retailers taking the initiative in leaving the wholesalers out of the channel. The wholesalers reacted by improving and adjusting their marketing activities, as is the trend in developing countries. The wholesale trade establishes its own retail/self-service outlets, which has led to the emergence of the cash and carry retail trade. Distribution trends in developed and developing countries are compared below.

RESULTS COMPARING DISTRIBUTION TRENDS IN DEVELOPED AND DEVELOPING COUNTRIES

The aims of this article were to compare distribution trends in developing and developed countries; indicates the position of the wholesaler in the distribution channel and determine whether there are grounds for the theory that distribution channels reflect the economic development of countries. The development process in the developing countries cannot be

analysed without taking account of the influence of the developed countries on these countries. Developing countries usually has poor, underdeveloped economies; different ideologically oriented and cultural backgrounds, with complex, yet similar economic problems that can seldom be solved without new ideas and modern approaches from the developed countries.

Developing countries show certain similarities, and this is the next topic of discussion. Firstly, most developing countries are former colonies of European countries, usually of England and France. The economic structures, education and social institutions of developing countries are therefore typically based on those of former colonial governments. Integration of the Western and traditional economic structures has therefore taken place. Many African countries only obtained independence about 60 years ago and are creating their own national, economic and political structures, rather than promoting rapid economic development. The colonial forces had a dramatic and incisive effect on the economic life of their colonies by propagating three traditional ideas, namely private land ownership, personal taxation and the requirement that taxation should be paid in currency rather than *in natura*.

Secondly, most developing countries have mixed economic systems with both government and private ownership of resources. The difference between the two systems and their relative importance is usually a function of historical and political circumstances within the country. The vast majority of the developing countries are agrarian as regards their economic, social and cultural views. Both commercial and subsistence agriculture are the most important economic activities of the population. In Africa farming is not merely an occupation but a way of life. A large percentage of total production consists of primary products and a large percentage of the labour force is involved in the agricultural sector. Productivity in the agricultural sector is very low, agricultural production units are small on the whole and this hampers the effective management of the units. The small agricultural production units are known as 'postage stamp culture', which is characteristic of the farming pattern in large parts of Africa, Asia and South America. Agriculture produces about 20 percent of the GNP of developing countries as against only three percent of the GNP of developed countries. In Africa the proportional size of the agricultural population is 75 percent and in South Asia it is 63 percent, as against five percent in North America. The 685 million strong agricultural labour forces in Africa and Asia produces an annual volume yield value of \$189 million, in contrast to the 4.5 million agricultural workers in America, which produce \$55 million. The production methods are characterised by primitive technology, poor organisation and limited physical and human contributions, and the result is technological decline.

Thirdly, a shortage of natural resources is experienced in developing countries. This is because resources are still largely caught up in the potential phase as regards capital, trained management and labour. High and rising levels of unemployment are therefore found in the developing countries as a result of the inadequate and ineffective use of labour. The growing urban population have difficulty in finding employment in the formal job sector. The result was the development of the informal sector in the early seventies. The current rate of open unemployment in developing countries on average is 10 to 15 percent of the urban population. Migration from rural areas has resulted in a growth of 5 to 7 percent in the urban population in many African countries and job creation cannot keep pace with the population increase.

Lastly, the developing countries, in contrast to developed countries, have an economy based mainly on scarcity of products. Manufacturing activities take place on a small scale, and numerous retailers run small operations all over the country. In developing countries the wholesaler plays a very important part in the distribution channel. The wholesaler is usually in control of the distribution channel. Wholesalers are responsible for far more marketing activities than in developed countries. The wholesaler performs the following marketing activities in developing countries: collects products and raw materials, builds up contact with markets, keeps stocks, breaks up bulk quantities and also carries the financing burden. The retailer and the manufacturer are not able to handle the financing of products. The extent of the influence that the wholesaler has in the distribution channel is usually an indication of the economic stage of development of the country. Japan is an exception, the only developed country where there are so many wholesalers in the distribution channel. Several researchers have attempted to determine the reasons for the slow development of the developing countries. A possible reason for the underdevelopment of developing countries is that most developing countries are situated in tropical and subtropical parts of the world. Heilbroner (1979) does not regard this as a reason for underdevelopment, however, since there are developed countries like Australia that are also situated in the tropics. The shortage of natural resources can rather be considered a good reason for underdevelopment in the developing countries.

CONCLUSION

Environmental trends in a country's community cause a unique distribution channel structure to develop although there will be similarities to other countries at the same level of development. One of the aims of this article was to indicate the position of the wholesaler in the distribution channel and determine whether there are grounds for the theory that distribution channels reflect the economic development of countries. Secondary research indicates that the evolution of wholesaling is closely related to the economic development of the country. The economic phase in which the specific country finds itself reflects the type of commercial institutions that will be found there. There is a tendency for certain distribution trends in the development phases of countries to correspond. When a country moves to a higher level of industrialisation, there is a tendency for the phase in which the wholesalers are operating to move up to that of more developed countries like Germany.

The phase at which the wholesalers were in Nigeria in 1963 can be compared to the phase at which German wholesalers were operating in the early 1800s. Distinct and recognisable similarities in distribution channel development can be identified in different countries. It is also clear that certain differences caused by the environment occur but clearly identifiable similarities also occur. America is the model developed country and other countries' economic development is compared with that of America. Such comparisons reveal that Japan and Germany are developed countries and are on the same level of economic development as America.

The aims of this article were to compare distribution trends in developing and developed countries. The conducted secondary research indicates that developing countries that are used in this study are all at various stages of economic development, as reflected by the distribution channel structure. In Nigeria wholesalers control the distribution channel. The manufacturing sector is small and the commonest form of retail institution, especially in rural areas, is the general dealer. In South Africa, which is currently at a later stage of economic development, large retail institutions such as hypermarkets are found. The large retailers buy

directly from the manufacturers and for this reason the role of the wholesaler has become less important in the distribution channel.

The aims of this article were to compare distribution trends in developing and developed countries and selected developing and developed were compared. The position of the wholesaler in the distribution channel was also indicated. The conducted research confirms the theory that distribution channels reflect the economic development of countries.

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HIGHER EDUCATION AND ECONOMIC DEVELOPMENT IN INDIA

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Abstract

In this study assess predictions about education development in potentially leading economy development of India, focusing mainly on India in terms of one key element in the growth process human capital, especially higher-end human capital. It deals that in the new information economy, university educated labor is crucial to economic development. India does not mean that the quality of education at lower levels of schooling is not also important. At least India, still have serious problems with educational quality (and, in India, even quantity) at lower levels of schooling. However, since one of the main features of the new global knowledge economy is the increasingly important role of the quantity and quality of higher educated labor, we focus on the India' university systems and where they are headed. Economists have focused mainly on the quantitative aspects of higher education the number of graduates in the labor force in assessing whether an economy is allocating resources for maximum growth. In these terms, India is expanding its higher education system the most Least rapidly. Suggests to that the proposing a functional definition that considers 'higher education' as a dynamic concept which changes over time and with levels of development. The importance of quality of education in development and suggests that most policy focus in India has focused on the quantity of education and largely ignored the equally important quality dimension.

Key Words: Education, Human Capital and Economic Development.

1.1 Introduction

Literacy level and educational attainment are vital developmental indicators in a developing nation like India as they are key variable of measure of development as they indicate quality of life, awareness level and also level of skill of people in the society. Better literacy and educational level definitely have a positive impact on the

health parameters. Education parameters have an equal weightage in the Human Development Index as well. Higher education differs from other forms of post-secondary (after high school) education such as vocational education. Vocational education is a form of secondary or postsecondary education but is considered non-academic as compared to higher education. It is now widely accepted that higher education has been critical to India's emergence in the global knowledge economy. Finally, it is widely held that it suffers from several systemic deficiencies and is driven by populism, and in the absence of reliable data, there is little informed public debate. More than 35 years ago, Nobel laureate Amartya Sen, while analysing the crisis in Indian education, rather than attributing the crisis in Indian education to administrative neglect or to thoughtless action, pointed out that the 'grave failures in policy-making in the field of education require the analysis of the characteristics of the economic and social forces operating in India, and response of public policy to these forces' (Amartya Sen, 'The Crisis in Indian education', Lal Bahadur Shastri Memorial Lectures, 10–11 March 1970).

1.2 Objectives

- To educating students in different subject matters for different roles in society
- To focus on the growing and vibrant private sector in higher education
- To explain development of workforce, to meet the domestic as well as the global demand for qualified manpower

1.3 Need for the Study

To intervene in complex systems like ecologies, economies, societies and nations, it is necessary to first understand how the system is put together. Structure and growth of higher education in India, both in terms of enrolment and institutions. In doing so, the book also examines trends about Indians enrolled overseas and international students in India. While overall growth trends, the transition from elite to mass higher education and compares the enrolment pattern with countries around the world, and discusses the emergence of new providers and new forms of delivery. Issues of access and equity are central to higher education in most countries around the world, particularly in democratic societies. Higher education in the private sector has grown fast over the past two decades. This has not only increased capacity and enhanced students' choices, but also affected the dynamics of regulation.

1.4 Levels of Education

Table 1.1

Stage	Approx. Age	Level
Primary	4-10 years	Elementary
Secondary	11-18 years	High School
Tertiary*	19-22 years	College
Quaternary*	23 years+	Graduate School

Education is a very important role in our lives. Everyone has been being educated since the day they were born. There is a rapidly growing demand for a higher education in the world today. Although a higher education is difficult to receive, the rewards of self-improvement, job insurance, a development of character, and social improvements are what is going to satisfy you. Sure it is hard to go to school longer, but learning for personal knowledge will greatly improve you. A better education will also gain you experience. Knowledge is a very powerful thing that can change the lives of others and yourself. With a higher education you are insured that you will have a better paying job.

1.5 Literacy Rate

As per 2011 census, literacy rate in India has been reported as 74.04% with a 14% increase to that in 2001, whereas the hike is maximum for rural women at 26% in the last decade, which may be attributed to literacy mission of Government of India. Overall female literacy rate in India much lower than that of male literacy rate. The female literacy levels according to the Literacy Rate 2011 census are 65.46% whereas the male literacy rate is over 80%. Kerala is the state with highest literacy rate at 94% and Bihar with the lowest literacy rate at just 63.82. Being a very vast country with second largest population, India has limited resources to make aware its below poverty line population about the Government interventions and the law providing them the Right to Education. The highest male literacy rate is also observed in Kerala at 96.1% followed by Lakshadweep at 95.6% and minimum for Bihar & Arunachal Pradesh. Female literacy is maximum for Kerala, followed by Lakshadweep and lowest for Bihar & followed by Rajasthan. A little more than half of the females are literate in these States.

1.6 Adult Literacy Rate

The adult literacy rate (15+) for male has increased from 73.4 to 78.8 whereas increase in adult literacy is more in case of females from 47.8 to 59.3 from 2001 to 2011. In 2011, just half of the rural adult females are literate against 76.9% urban females. 88.3% Urban adult males are literate against 74.1 rural adult males. Overall adult literacy is increasing over decades.

1.7 Gross Enrolment Ratio (GER)

The Gross Enrolment Ratio (GER) for females at the primary level stood at 102.65 compared with 100.20 for males in 2013-14. At the middle class level, the GER for females has been reported as 92.75 against 86.31 for males and at the higher secondary level, 51.58 and 52.77 is the Gross enrolment ratio for females and males during 2013-14. There were 93 girls per 100 boys in primary classes, 95 in middle classes and 90 in secondary classes during 2013-14 against lesser ratios in the earlier decade.

1.8 Drop-out Rates

The Drop-out Rates were observed to be 4.66 and 4.68 in the classes I-V, 4.01 and 2.3 in classes I-VIII for females and males respectively indicating that the drop

out at primary level is at par for both the genders but the gap increases in higher classes.

Table 1.2
Literacy Rates in Post Independent India

Year	Rural			Urban			Combined		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
1951	4.87	19.02	12.1	22.33	45.6	34.59	8.86	27.15	18.32
1961	10.1	34.3	22.5	40.5	66	54.4	15.35	40.4	28.31
1971	15.5	48.6	27.9	48.8	69.8	60.2	21.97	45.96	34.45
1981	21.7	49.6	36	56.3	76.7	67.2	29.76	56.38	43.57
1991	30.17	56.96	36	64.05	81.09	67.2	39.29	64.13	52.21
2001	46.7	71.4	59.4	73.2	86.7	80.3	53.67	75.26	64.83
2011	58.75	78.57	67.8	79.92	89.67	84.1	65.46	82.14	74.04
% Increase in 2011 over	26%	10%	14%	9%	3%	5%	22%	9%	14%

Source: Census of India, Office of Registrar General, India 2011.

For 1951, the population male, female and persons refers to effective literacy rates and the breakup of Rural, Urban and male- female components are crude literacy rates.

1. Literacy rates for 1951, 1961 and 1971 relate to population aged 5 years and above whereas literacy rates for
2. 1981, 1991, 2001 and 2011 relate to the population aged 7 years and above.
3. The 1981 literacy rates exclude Assam where the 1981 Census could not be conducted.
4. The 1991 literacy rates exclude Jammu & Kashmir where the 1991 Census could not be conducted due to disturbed conditions.
5. The 2001 and 2011 literacy rates exclude Mao Maram, Paomata and Purul Sub-divisions of Senapat district of Manipur.

1.9 Contributions of Higher Education to Economic Development Efforts in India

Many of Indiana's public and private universities and colleges have made significant contributions to economic development efforts in Indiana. During the past decade, universities and colleges in the state have become more aggressive in terms

of economic development. While it is not easy to identify all of the economic development contributions made by public and private colleges in India.

Table 1.3
Gross Enrolment Ratio in Different Stages of Education as Percentage of Population in the Appropriate Age- groups

Year	Primary Classes I-V (6-10 years)			Middle Classes VI-VIII (11-13 Years)			Higher Secondary Classes IX,XII (14-18 Years)		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
2001	85.90	104.90	95.70	49.90	66.70	58.60	35.03	24.60	30.09
2001-02	86.91	105.29	96.30	52.09	67.77	60.20	27.74	38.23	33.26
2002-03	93.10	97.50	95.30	56.20	65.30	61.00	33.21	41.29	37.52
2003-04	95.58	100.63	98.20	57.62	66.76	62.40	34.26	42.94	38.89
2004-05	104.67	110.70	107.80	65.13	74.30	69.93	35.05	44.26	39.91
2005-06	105.75	112.80	109.40	66.41	75.15	70.10	35.80	44.58	40.42
2006-07	108.00	114.60	111.40	69.60	77.41	73.80	36.80	45.00	41.10
2007-08	112.60	115.30	114.00	74.40	81.50	78.10	41.90	49.40	45.81
2008-09	114.00	114.70	114.30	76.60	82.70	79.80	43.50	51.00	47.40
2009-10	113.80	113.80	113.80	79.00	84.30	81.70	46.10	52.50	49.40
2010-11	116.30	114.90	115.50	82.90	87.50	85.20	48.50	55.70	52.20
2011-12 2012-13*		105.98			82.50			40.76	
2013-14	102.65	100.20	101.36	92.75	86.31	89.33	51.58	52.77	52.21

Source: *Secondary Education in India, Flash Statistics, Statistics of School Education 2010-11, 2013-14*

1.10 Effectives and Support to Economic Development Efforts

Whether public or private, universities and colleges need to determine the best ways to participate in regional, state and national economic development initiatives. It is important for higher educational entities to look for the ways the can best leverage their assets to help support their mission and the economic development goals of a geographic area or industry sector. Colleges and universities should begin the process by completing a comprehensive inventory of all activities

that have a material impact on economic development initiatives. This process will allow the institution to identify its key assets which can be leveraged to help grow the regional, state and national economies. Once the “mapping” process has been completed, it is then important for the higher educational entity to develop a strategic plan, with implementation steps. This plan will help guide the university or college in the most effective ways to contribute to economic development initiatives. Please find below a list of the key items to include in a higher educational economic development strategic plan.

1. Description of Initiative
2. Key University Person(s) Responsible for Implementation
3. Geographic Area to be served
4. University Fiscal/Budget Impact
5. Short-term & Long-term Success Measurements (Quantitative & Qualitative)
6. Key Implementation Milestones/Steps
7. Timeline for Implementation
8. Key External Resources/Partners Required for Implementation & Success (People & Funding)
9. Key Internal Resources/Partners Required for Implementation & Success (People & Funding)
10. Key Internal & External Challenges to Overcome to Ensure Success (Culture, Funding & People)
11. Best of Breed Models Used throughout the United States (University, Private & Not-for-profit)
12. Priority Ranking

1.11 Role of education human development

Higher education has historically included economic development as part of its core mission. The colleges and universities serving the region have allocated fiscal, physical, and human resources and created entrepreneurship systems within the institutions to advance economic development. Senior administrators provide strong, visible leadership designed to

Create a quality workforce by growing, training, and attracting the finest talent

Support current business and industry

- Improve learning and teaching from pre-school through graduate school
- Take strong and visible roles in regional initiatives
- Disseminate research and promote technology transfer
- Enhance the technology infrastructure
- Promote livable communities
- Employ a diverse workforce
- Education offers graduates more jobs to choose from than are open to those who don't pursue education beyond high school, and graduates typically earn more than non-graduates
- College education produces in increased lifetime income--not a bad return on an investment

- Higher education improves an individual's quality of life. Studies show that, compared to high school graduates, college graduates have longer life spans, better access to health care, better dietary and health practices, greater economic stability and security,
- More prestigious employment and greater job satisfaction, less dependency on government assistance, greater knowledge of government, greater community service and leadership,
- More volunteer work, more self-confidence, and less criminal activity and incarceration.
- In addition, college graduates supposedly have greater use of seatbelts, more continuing education, greater Internet access, greater attendance at live performances, greater participation in leisure and artistic activities.

1.12 Worldwide higher education reforms

The emergence of a global economy due to increased trade, investment and mobility of people and, more recently, work across borders has forced nation states to adapt their systems of higher education to the changed global realities. The government in China has declared education, science and technology to be the strategic driving forces of sustainable economic growth. Pakistan has embarked upon wide-ranging systemic reforms. In the United Kingdom, where higher education is primarily in the public sector, faced with problems of deteriorating standards due to inadequate funding and failing accountability, several innovations in financing, such as performance-based funding for teaching and research and portable students' aid, and so on, were introduced over the past decade. This helped the UK higher education system to become one of the best systems of higher education in the world again. In a highly sensitive and bold decision, the UK government has now allowed the Universities to compete for students and charge variable fees, bringing an end to the regulated fee regime in the UK (DfES, 2003).

1.13 Changing Policy on Higher Education in India

From the early 20th century, there have been several high level commissions set up to provide policy orientation to the development of higher education in India. On the basis of the report of the Sadler Commission (1917–19), also referred to as the Calcutta University Commission, the Central Advisory Board of Education (CABE) was set up to define the general aims of educational policy and coordinate the work of various provinces and universities by guarding against needless duplication and overlapping in the provision of the more costly forms of education. The University Education Commission, presided over by Dr S. Radhakrishnan, in its report in 1949 recommended that university education should be placed in the Concurrent List so that there is a national guarantee of minimum standards of university education. The constituent assembly did not agree to it. It was much later, in 1976 that education was made a concurrent subject with the 42nd Amendment of the Constitution.

The Kothari Commission (1964–66) examined various aspects of education at all levels and gave a very comprehensive report full of insight and wisdom. This

report became the basis of the National Policy on Education, 1968. With this, a common structure of education (10+2+3) was introduced and implemented by most states over a period of time. In the school curricula, in addition to laying down a common scheme of studies for boys and girls, science and mathematics were incorporated as compulsory subjects and work experience assigned a place of importance. A beginning was also made in restructuring of courses at the undergraduate level. Centers of advanced studies were set up for post-graduate education and research. Detailed estimates were made to meet requirements of educated manpower in the country.

1.14 Recent Developments in Indian Higher Education

It is widely believed that technological advances and a shift in demographic provide India with a window of opportunity to productively engage its huge pool of human resources, and become a leader in both the rapidly expanding sectors of services and highly skilled manufacturing. This would, however, require revamping the higher education sector. Hence many steps have been taken to augment supply, improve quality and fix many of the problems faced by higher education. The National Knowledge Commission (NKC) that was set up to examine the higher education sector (amongst other things) made several useful and important recommendations. The Government of India has increased funding significantly during the Eleventh Five Year Plan. Many new institutions have been planned and some of them are already operational. There are many good ideas in the plan document. All these efforts, however, appear to be somewhat disconnected. Some even appear to be at cross-purposes with each other. Several suggestions appear to be merely impressionistic views of individuals, rather than being supported by data and research. Overall, these efforts do not give a sense of an integrated reform agenda for Indian higher education. And in absence of credible data and good analysis, the media continues to perpetuate and exacerbate certain fallacies and inconsistencies.

1.15 Conclusion

The region faces many economic challenges and opportunities; whether it barely survives or thrives depends upon the region's ability to identify long-term, collaborative strategies that will create a strong, versatile economy. The region has tremendous work ahead, and there are no quick fixes if the underlying economic infrastructure is to be strengthened. A high school curriculum designed for students who might have been employed immediately after graduation in the 1990s does not develop the skills and knowledge needed by workers in the new economy or postsecondary students today. Together, the institutions of higher education invite the public and private sectors, including business and industry, education, civic groups, not-for-profits, governments, and all citizens, to join them in working together to leverage the resources of the region. This study conclude higher education system, assesses its needs, identifies gaps and provides perspectives for the future. In doing so, it takes into account several measures planned or taken and provides a glimpse of a vibrant emerging private sector. Evolving an integrated reform agenda for higher education in India (or, for that matter, anywhere in the

world because of the various sensitive issues involved) with a long-term perspective is both complex and difficult, but by looking at the big picture that the book presents, one could think strategically about it. In summary, there are several ways in which a college or university can make significant contributions to regional, state and national economic development initiatives. A higher educational entity has to first have a desire to do so. Secondly, a college or university must know their strengths and assets that can be leveraged to benefit their organization and geographic area in which they can have an impact. Third, the higher educational entity must have a vision of what they would like to achieve. Finally, the college or university must have an implementable strategic plan.

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VIOLENCE IN CYBER-SPACE IN TEENAGERS DATING RELATIONSHIPS: AN EXPLORATORY STUDY IN A MEXICAN STATE IN HIGH SCHOOL STUDENTS

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Abstract

In this paper we tried to study and understand how teenagers use violence through technology in their dating relationship; we knew how important was to make this approach where social values and expectations that once restrained the human impulse are set aside in a digital world where everyone regulates their behavior, control of the feelings gets a big issue in this matter. We considered that this study would be a good tool to understand better how teenagers behave during this stage of life and we as professors would propose certain solutions in this matter.

Most of the materials we used were studies that some authors have studied this phenomenon but we also applied a survey to teenager students and present results of the survey carried out in 14 public high schools in the state of Nuevo Leon, Mexico, to a random sample of 1,900 students, where the results reflect that online violence is a reality in the interactions in the social networks of teenagers who have a sentimental relationship.

We consider that this paper would give a hint to administrators in high schools, higher education institutions and also, to investigators covering this matter.

Key Words: Cyberspace; Violence; Sentimental relationships; Teenagers..

1. Introduction

Burns with cigar, match or lighter; threats with firearms, attempted strangulation, pulling hair, blows and even slaps are just some of the physical abuse suffered by students who have a dating relationship in Mexico. This violence reveals itself in both men and women, although it is exercised in different ways (Oliva et al., 2011). Women tend to face what is most common in their gender, such as scratches and slaps, while men tend to be instrumental in aggression, being more likely to burn

with cigarettes, threats with firearms, to the unusual use of the physical force that sometimes leads along the path of the strangulation attempt.

This violence covered under "love" is almost invisible to the bulk of the population that maintains a sentimental relationship (Instituto Mexicano de la Juventud, 2008),¹ because its effects and symptoms of mistreatment are unknown for much of the young Mexicans. Visible or not, the violence is there giving traces of horror in the portrait of a Mexican society that witnesses daily the result of an aggressiveness where the exercise of power transforms this human trait into a devastating destructiveness that touches everything, even the most beautiful feeling that humanity can possess: love.

They are symptoms (Flores, 2006) of what they now often call postmodernity, where it is not difficult to recognize hatred, destructiveness and cruelty as distinctive signs of our daily life in relationships with others.

This phenomenon is known in the international literature as *dating violence or dating aggression*, concepts that emerged from studies of authors such as Collins (2003), Furman (2002), Wekerle and Wolfe (1999), cited by Sánchez et al. (2008), and whose were adapted to Spanish can be understood as violence in teenager relationships.

Rojas (2013) conducted a review of dating violence studies in Mexico from 2002 to 2012, analyzing publications in databases such as Dialnet, Google, Scholar, Psycodoc, Psycinfo, Redalyc and Scirus, finding only twenty studies, whose results were revealed at scientific conferences or in specialized journals. Among the results of his review, the author emphasizes that 75 percent of the Mexican studies were of a quantitative type, 100 percent were transverse and 85 percent intentionally selected the sample, concluding that it is necessary to carry out mixed designs, longitudinal with samples selected randomly from public or private schools.

Another conclusion is that in Mexico a line of research needs to be developed to study violent manifestations through new technologies, since only studies by Sánchez and Solís (2009) and Olvera et al. (2012) touched on the subject of technological advances, by measuring the control of the couple through cell phones (Rojas Solís, 2013).

The present study advances in this direction when analyzing the manifestations of psychological violence in couples of dating teenagers who interact in Facebook and other social networks. Sentimental relationships in teenagers have special importance for those who live in because it is when young people move away from the family and their social world takes on complexities, since they are more involved in relationships with peers, friends and couples.

¹ENVINOV 2017 is a National Survey of Violence in Dating Relationships conducted by Mexican Institute Youth

Connolly and Goldberg (1999) cited by Sánchez Viejo et al. (2008) established phases or stages that allow to understand the process of appearance, creation and consolidation of the first relationships during adolescence. The authors characterize the first phase, in the predominance of physical attraction, which does not have to be accompanied by a real interaction; in the second phase, appear the first, more or less stable appointments, which are distinguished by occurring within the group of equals; in the third phase, appear the first dates of couples without the presence of the group of equals, but are casual and non-stable dates. Finally, in the fourth phase, the relationship between partners is predominant, with less presence of the peer group, which leads to a progressive increase in the involvement in the relationship, intimacy and commitment.

In Mexico, the ENVINOV 2007 survey (IMJ, 2008) revealed that 51.8% of 15-24 years old had a dating relationship during the year that the study was conducted, noting that the motives that led to these teenagers, that the couple liked very much 90%, secondly with a 4.9%, the insistence of the one who was courting, and in the third place with 2%, attributed social pressure as a motivator for the beginning of a relationship.

As a result of modernity, the romantic relationship is covered by several faces, as there have been numerous socio cultural transformations, giving rise to new femininities or masculinities that have modified the emotional relations of teenagers, as Rojas Solís (2013) calls "the emergence of informal relationships" as the so-called "free" and "friend" whose essential distinction is the absence of commitment.

In those ways of modernity (Casas Tello, 2012) who, in the definition of the concept of a couple, "*refers to any type of violence exercised by one partner towards the other with the intention of harming him or her, and independently of the sex, or the exercise of violence in a mutual agreement in the context of a relationship*".

The couple, in this conception, embraces all possible compromise, from a date to a stable relationship and between members of the same sex or different sex. In teen population, he says, relationships vary according to the degree of commitment:

We can talk about stable relationships, relationships characterized by sporadic sexual encounters; it can simply be an appointment, or someone with whom you leave eventually, but with whom there is no commitment.

However, some authors indicate that violence in courtship is seen by young people as something natural (Ramírez-Rivera and Núñez-Luna, 2010); they do not clearly recognize a violent courtship, so there are recurrent violations, sexually transmitted infections, lack of pleasure, low self-esteem, desertion, poor school

performance, eating disorders, physical aggression, emotional instability, early pregnancy, use of addictive substances and suicide.

Regarding the consequences of this type of aggression, the studies available in the international literature have mentioned the physical, psychological and behavioral aspects of the victim, being associated, as mentioned above, individual factors such as depression, low self-esteem and emotional well-being, thoughts and suicide attempts or risk behaviors such as alcohol consumption, eating disorders, early onset of sexual intercourse and poor school performance.

The scientific community breaks down theories to explain this phenomenon according to the perspective of its formation and perhaps from the subjectivity and individuality of each researcher. Thus, Patterson Coherence Model (1982) puts the origin of the aggressive behaviors in the educational and disciplinary practices that occur in the family context; Bandura's Theory of Social Learning (1973) is also present when explaining violence as a result of the observation of a behavior carried out by an admired model who is imitated; Bowlby's Theory of Attachment (1969) exerts its influence on the explanation of this phenomenon, especially from the perspective of insecure and avoiding attachment in which the attachment figure is insensitive, avoiding, rejecting and prevents access to the child in a way unpredictable, causing in the child insecurity and concern. Feminist theories also play a large explanatory framework, as well as the Evolutionary Systemic Model of Capaldi and Cols (2004).

In United States, the company Liz Claiborne fund an investigation into violence in courtship through the Internet, which revealed that 36% of respondents were under control by their partner, who came to call up to 30 times a day to know about their activities (quoted by Hinduja and Patchin, 2011). This research, conducted in a *Southern United States School District*, conducted on the basis of a random sample of 4,400 students aged 11-18; found that 12 percent of the students had been victim of some electronic form of dating violence, 10% said their romantic partner had prevented them from using a computer or cell phone; 6% indicated that their sentimental partner had posted something on the net, to mock, threaten or publicly embarrass, 10.4% of the boys and 9.8% of the girls said they received a threatening message on their cell phone, sent to the device by their romantic partner; 5.4% of males and 3.4% of females reported that their partners had distributed a humiliating photo online in order to damage their prestige.

Cyber Violence in Adolescent Dating Relations in Mexico

Violence in cyberspace was seen to come with the emergence of interactive virtual environments that started with chat services, followed with the publication of photographs and guestbook in sites such as Facebook and Photolog; access to upload videos on pages like YouTube and all kinds of images, sounds and texts on Facebook and other social networks.

We live a generation of digital creators who can equally form the most beautiful expression of love and civility, and others generating the most cruel manifestation of hatred and violence, with the tools that the network and other electronic devices are available.

Velázquez (2009) warned that;

"violence has a new face, maybe it is a makeup, but it has changed and will continue to metamorphose even more; the use of ICT is modifying social behaviors ... new terms, new relationships, new interactions".

The jealousy and the control of the pair begin to appear in the Mexican investigations that study the coexistence in the cyberspace. Velázquez (2010) noted that;

"a type of harassment that is increasing is when the girlfriend sends messages or makes calls to control or monitor their partner".

In Veracruz Mexico, López Hernández (2009) carried out a qualitative study at the "Ricardo Flores Magón" high school in the city of Xalapa, during February-July 2009 school period; four focus groups were formed and five students were interviewed. Men and women with experience or without relationship experience; when inquiring about the teenagers' relationships, it was found that non-formal courtship, known as "free" or "friend" relationships are characterized by a greater erotic-sexual charge.

In that same state, Oliva, González, Yedra, Rivera and León (2012) carried out a study at the Universidad Veracruzana to investigate the most common forms of violence and the factors associated with it. Participated in 1988 students between 19 and 49 years old of the different campuses finding that 27.8% of the students had shouted to their boyfriend, 15.2% had insulted him, 10.6% had pushed their partner, 4% had pulled the hair, 14.9% had bitten their partner in the heat of conflict, 7.5% had slapped their partner, 3.8% had struck at them, 2.1% had used kicks, one in every thousand had threatened fire and three out of a thousand had burned their mate's skin with cigarettes or matches.

The results of this investigation confirm at first sight that in relationships of courtship, violence does not always travel towards a single direction, but there is what in the international area has been called two-way violence, that is, there are either a self-defensive response from the victimized partner, or else, it is the other party, be a woman or a man, who initiates it. In this study, the authors conclude, "invite us to make different reflections on the problem of violence, specifically with respect of gender." Results such as these contradict the feminist theories that place women as the only recipient of aggressions.

In Sonora, Ramirez Rivera and Núñez Luna (2010) conducted an exploratory study on dating violence in university students, applying an instrument to 376 students from different bachelors to learn about the factors associated with violence in the students, finding self-esteem as a potential factor in inducing violence.

When analyzing harassment behaviors on Facebook in high school and college students, Lucio (2012) made an approximation to the problems faced by teenagers of both sexes who have a sentimental relationship and interact in cyberspace. In a study based on a sample of 1,900 students, 31.1% of the respondents, or three out of ten students, had problems with their boyfriend/girlfriend for accepting friends who were not from their choice.

Studies that reveal the interactions of couples in cyberspace are minimal in the Mexican context, so this situation leads us to agree with Rojas Solís (2013), in the sense that it is very necessary to emphasize the inclusion of the study of the "new violence" in a couple, specifically those associated with new technologies.

This reality motivates us to investigate the interactions in the cyberspace that live the adolescents who have a dating relationship and that live in the social network such as Facebook, among others.

2. Research and Method

Our study is exploratory, descriptive and cross-sectional, since in Nuevo Leon state and perhaps in the country studies have not been carried out describing the interactions in the social networks of teenagers having a dating relationship.

The study was carried out in 14 public high schools geographically established in 9 municipalities of the state of Nuevo Leon, participating in the sample 1,900 students who were randomly selected in high schools in the metropolitan area of Monterrey, Nuevo Leon.

The type of sample used was probabilistic stratified by educational center and gender, using 95% confidence ($\alpha = 0.05$) and with an error limit of no more than 0.3 ($\pm 3\%$). The sample consisted of 50.1% of males and 49.1% of females. Ages ranged from 16 to 18 years old. 69.8% were 16 years old, 25.2% were 17 years old and 5% were 18 years old.

An essential requirement was that they had at that moment a dating relationship or that they had finished one recently, setting a limit of three months previously.

3. Instrument

We used an instrument to measure the rates of ciberdating designed by the Laboratory of Studies on Coexistence and Violence Prevention at the University of Córdoba, Spain, and validated by Sánchez, Ortega and Santos (2011). The scale as a self-report contains questions that have to do with the identification of the center of studies to which the student belongs, the sex, the age and the locality. It inquires about the type of family of the student, the time dedicated to the connectivity, the enrollment in social networks, the time that takes the sentimental relation, the formal or non formal of this and the form of the initial contact, either face-to-face or virtual.

By means of 39 Likert-type questions to measure attitudes we explore the coexistence in the social networks of the members of the couple and their possible attitude to this or that situation, for example: I feel jealous if my partner hangs provocative photos in your social network profile with answers of the type Never / Almost never / Sometimes / Almost always and Always.

The questionnaire was adapted to the geographic reality in which it was applied contemplating the uses of the language of the adolescents of Nuevo León so that they were understood, for example, we changed the phrase "touches to the mobile" by "calls to his cellular".

4. Process

After the research was authorized, we explained to the groups in the high schools, we explained to the students the purpose of the research, the characteristics of the self-report, guaranteeing anonymity and requesting sincerity in the answers. Once they were answered, the questionnaires were captured in a database for analysis using the statistical software SPSS version.

5. Results and Analysis

84.6% of the students were members of a nuclear family with the presence of the father and the mother; 14.3% belonged to uniparental families with presence of the mother; and the rest with their relatives and other people like grandparents, uncles, stepfathers and stepmothers, etc.

98.6% of the students have Internet service in their home and 28.1% of this total uses the Internet from 1 to 2 hours from Monday to Friday; in that same period 33% of the students dedicate from 3 to 4 hours; 18.7% use the network for 5 to 6 hours; 6.4% use it for 7 to 8 hours; while 5.1% use the Internet from 9 to 10 hours, 8.7% have 11 or more hours of connectivity.

At weekends there are not many differences in connectivity time, since 26.3% dedicate from 1 to 2 hours, 28.3% connect from 3 to 4 hours, 10.6% from 7 to 8

hours, 6.5% from 9 to 10 hours, and 16.7% of 11 hours and more, so it is inferred that 8 out of 100 students takes advantage of the weekend break to be more time in the network.

As for the number of friends who have added to their social network, 54.1% have 500 friends and more; 10.1% have 401 to 500 contacts; 12.4% from 301 to 400; 11.5% from 201 to 300 friends; 8.1% from 101 to 200; 2.6% have 51 to 100 contacts, while 1.2% have 1 to 50 friends added to their network.

At the time of the survey, 33.3% of the sample had a partner, while 66.7% had recently terminated the relationship, so they answered the questionnaire considering the engagement that had just come to an end.

33.3% of the students had 1 to 3 months in their relationship; 13.9% had boyfriend from 4 to 6 months; 9.9% from 7 to 8 months and 9.4% from 10 to 12 months, that is to say, they were to meet or had been one year of relationship. A 10.9% had between 13 and 15 months of relationship; 6.2% from 16 to 18 months; 10.9% from 19 to 21 months; 3.25 from 22 to 24 months, almost fulfilled or had reached two years; 2.3% had exceeded two years with 25 to 28 months of courtship. The literature indicates that violence occurs more frequently in relationships of longer duration, since there is a greater commitment.

We found that 87.5% of the students had met their partner in person and 12.5% initiated their dating relationship in online interactions, so that social networks are changing the ways of relating adolescents emerging as a possibility for the achievement of a sentimental relationship. For 64% of the sample, the relationship was defined as serious; 23% were only dating and 13% defined their relationship as informal. The networks in which adolescents were registered were Facebook, mostly 98%, but they also alternated the coexistence in other social networks like Instagram, WhatsApp, Ask.Fm, Twitter, MySpace, YouTube, DeviantArt, Skype, Tumblr, Metroflog, Zello , among other.

As for the emotions that caused some activities of the members of the couple in the network and that could cause restlessness in the relationship, it is related to the graphic images that portray the person. 63.6% of the sample indicated feeling jealous if their partner hung provocative photos in the network; 9.8% noted that this emotion always felt; 8.8% almost always; 27.5% sometimes and 17.5% almost never.

This unease leads adolescents along the paths of insecurity to the extent that 68.7% of the sample expressed concern that their partner could start another relationship with someone through social networks. This wave of concern always reaches 10.9% of the sample; almost always to 9.7%, sometimes to 19.4% and almost never to 18.6%, which tells us that at least six out of 10 students involved in a sentimental relationship feel uneasy about the interaction of their partner in the net.

44.3% confess to flirting with others in the network while their partner is connected and witnessing their cybernetic activity in the network.

The new information technologies enable new forms of connection, of sentimental "click" with other beings with which there is the possibility of starting a relationship. 31.2% of the adolescents surveyed openly expressed that they liked to link on the net and that they occasionally accessed cyberspace with the intention of looking for an "adventurer". 3.1% indicated entering the network with these intentions always; 3.6% almost always; 17.2% sometimes and 14.3% almost never. What most draws the attention of the other to the adolescents is the physical aspect according to 71% of the students surveyed. This aspect of the person can only be appreciated in the profile photographs or in those that are part of the photographic album of the biographies available on the networks and which are essential elements to be accepted in their requests for additions in the list of friends who are cross in cyberspace. 70.4% of the sample confessed that when he knew someone he liked, he quickly gave his social network account.

Social networks do not only operate on the web, there are also those that are designed to work on mobile devices such as cell phones. WhatsApp, Instagram, Telegram are some of them where users can chat, exchange messages, photos, exchange contacts and even texts that show the content of their conversations. It is not surprising that a person shares a photograph that they sent as a recipient in exclusivity. The same thing happens with the texts. A person can transmit fragments of a conversation that was given in the area of confidentiality and put in evidence to which he gave his trust. Our study revealed that 48.3% of students when they meet a person they like quickly give them their cell phone number.

This situation of accepting people with or without a face-to-face interaction is witnessed by the other partner - the list of friends are in view of their contacts in most social networks - provoking a certain type of irritation, insecurity and anxiety, making this a threat. 59% of the students in the sample indicated feeling jealous if their partner adds someone unknown to the opposite sex. This is always the case for 9.3% of the sample; almost always to 10.4%; sometimes to 18.9% and almost never to 20.3% of the students who answered the instrument.

The messages that are posted on the walls - not the inbox ones - are in the eyes of most people; So that one or another member of the couple can realize the comments, good or bad, serious or indiscreet, comical or flirtatious, avoidant or seductive that transmits or receives the other, causing in many occasions conflicts in the couple. 56.3% of the sample said they felt jealous after reading the messages that their partner receives in their account.

This type of interactions provokes conflicts in the relationship of courtship of the adolescents, because they originate distrust and insecurity. Thus, 59.4% of students ask their partner for their Facebook friends and even 59% of them add to

their contact list friends of their partner in order to exercise control over their girlfriend's interactions with person he / she has added. The restlessness is such that 59% of the students in the sample perceive that their partner changes, which is not the same when they chat. Suspicion, distrust comes to such a degree that 42.7% - four out of ten - try to gain access to their partner's social network account. Faced with this situation, 27.2% confessed that it has opened accounts with false data - identity suppression - for their partner to add and be able to control it (or).

Another resource used by some members of couples who feel unsafe about their boyfriend is to ask someone in their social network of friends to allow them to use their account and with that profile get their partner, who is unaware that the person with whom you are communicating in the network is not other than your partner.

"I've been posing as a friend to test my partner," confesses 39.5% of the sample, and then question his partner about the talks of the day. "I ask my partner about what he does in social networks," says 59.4% of students who participated in the research.

To show their anger at their partner, 53.7% show their anger using capitalization in their text conversations or write little, as did 63.7% of the sample; also the offended partner is removed from the chat without warning, as it was secured by 59.5% of the sample or also tries to flirt with others (as) in the network - as did 51.3% of the sample - to provoke jealousy in their partner.

Some people at the height of the conflict come to reactivate old relationships or accept people on their list of friends, who know that they can cause discomfort to their partner. 69.6% of the sample was irritated because their partner uploaded a photo where he appears with his former boyfriend.

This type of situations, when faced by couples, generate conflicts that endanger the relationship and cut all types of communication by eliminating the couple from their list of friends, you avoid getting calls and you even get to cancel the account to not read the messages that arrive by chat or inbox.

"When I'm angry and my partner does not respond, I call by cell phone many times," said 41.7% of the sample; "When I am angry and my partner does not respond I leave many messages on his wall," said 38.7% of the sample.

"When we are angry and my partner blocks me, he used a friend's profile to leave messages for him, write on his wall or chat," said 28.8% of the students in the sample. A 36.7% of the sample indicates that when there is anger and is cut off the interaction leaves many private messages in personal mailbox of the account of its pair.

As González Lozano (2009) affirms, violence in courtship can be triggered by many factors and its multi-causality becomes more complex because of the conceptual polemic in which this phenomenon is immersed. Interactions in social networks, as this research has shown, can become a risk factor for the influence, on the one hand, of the personal characteristics of the members of the couple, as well as the scope of the contextual factors in which the sentimental relationship develops. Socio demographic factors such as ethnic variations, economic status and place of residence are set aside if we are talking about coexistence in a virtual world where the only thing certain is that there are no boundaries. The personal history of the individual persists in this factor, whose beliefs detonate jealousy and the exercise of strategies of control before the disinhibition of the other influenced by the seduction of the social networks that are offered as showcase of the quotidian. As Calmaestra (2011) states, the impact of ICT has transcended the barriers of education and formal contexts to the social life of young people and it is in cyberspace where users can interact very differently to the behaviors learned in the process of socialization to those who had been involved in the physical spaces. Thus, moral values and social expectations that shape human behaviors may not exert sufficient pressure on the behaviors of subjects in cyberspace.

Willard (2004) concerned by Calmaestra asserts that disinhibition in communication over the Internet and mobile phones can lead to hostile communication, in such a way that subjects influenced by the characteristics of cyberspace can commit aggressions with a low psychological load and great ease.

Conclusions

We are now faced with an emerging violence made possible by ICTs users, in the face of a communication of old maltreatment now mediated by computers and mobile telephony, which impact the most precious collective of humanity as are our teenagers and young people in their dating relationship.

It is suggested to continue studies in this, also emerging line of research to examine the possible impact of this new violence in the physical and face-to-face, as Hinduja and Patchin (2011) have already proven, this mediated psychological violence becomes physical aggressions in the three-dimensional reality.

We know that this study would be a great help for those who study this matter and above all, would be a great help for those who work in educational institutions, especially in medium and higher education systems.

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MODERN AGRICULTURAL PRACTICES BY INHABITANTS IN LAKHIMPUR DISTRICT, ASSAM

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Abstract

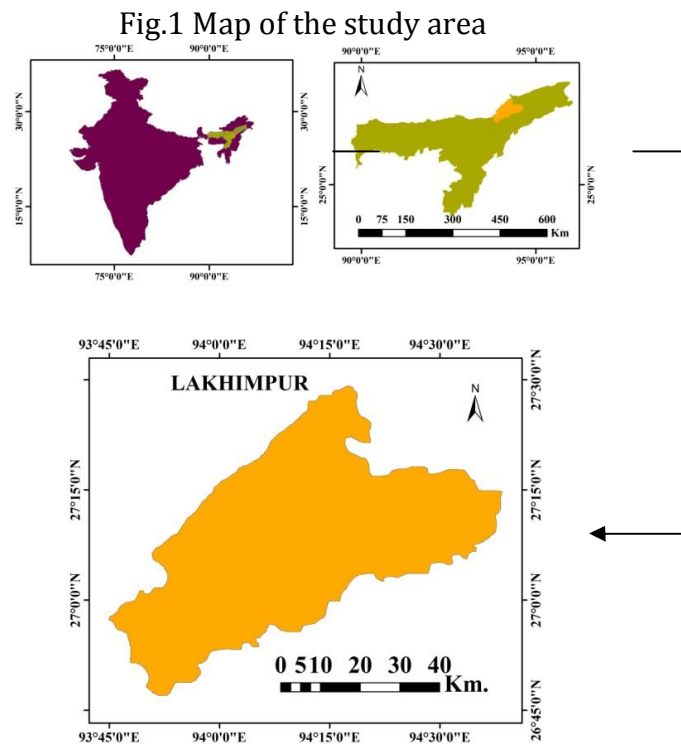
Agriculture is the main source of livelihood for more than half of the population of Lakhimpur, however is a subsistence type. Paddy is the main crop in the district. Paddy cultivation and vegetables production comes under main agriculture activity, other allied activities are horticulture, plantation, animal husbandry and sericulture are the important agriculture activities. There are more than 80% of inhabitants who support themselves by farming through the utilization of modern equipments. With the modernization of agricultural activities, dependency on human labour has decreased. Animal power and human labour and traditional equipment are getting replaced by machinery and with other innovative techniques. Farmers get much more output with the proper utilization of fertilizers, insecticides and herbicides, improved seeds and improvement of irrigation systems to enhance the productivity of the land which brings smile to the farmers. The cropping pattern has changed to a large extent in the last few years with the implication of modern agricultural practices. The yield of the crops has increased with the use of hybrid seeds in a same plot with different period of a year. Though production has increased, dependency has also increased in double rate. Therefore people of the study area are adapting modern tools and techniques with HYV seeds. The study reveals that through modernization of agriculture, people are getting more opportunities to cultivate various crops in limited time with high production than before on the same plot.

Key Words: Agriculture, livelihood, modernization, cropping pattern, productivity.

Introduction

India as well as the Assam has agriculture sphere economy and almost 70% of our total population depends on agriculture for their livelihood. Agriculture is the main occupation of the majority of population in Lakhimpur district and 80% of population

depends on it. Agricultural sector is considered as the primary sector in almost all the underdeveloped countries of the world. It is considered as the primary sector because development of an economy to a large extent depends upon the development of this sector. In most countries it is called the key sector of development which, if developed properly, may open avenues of development of other sectors of the country. The problem of development is not new to human society. Their experiences reveal the importance of agriculture. The farmers of the district rely a lot on agriculture for earning their livelihood. The development of agriculture depends on various aspects such as type of soil, relief, vegetation, climatic conditions, attitudes of different social groups of farmers to agriculture, use of irrigation, HYV seeds, fertilizer, pesticides and insecticides, use of mechanical tools and implements, as well as proper scientific rotation of crops by which production be enhanced. The impact of these aspects of agriculture varies in different areas of the district. There are distinct variations in the magnitude of these concepts both over space and time.



Methodology and Data Base: Secondary data are collected from different state government offices like the Directorate of Census office, Directorate of Economics and Statistics, Govt. of Assam, Department of Irrigation, Govt. of Assam, District Agriculture office, District Settlement office and Revenue Circle offices. Data on general and agricultural land uses, crop production and block wise population relating to the problem are collected from the different community development blocks of the district. There are nine development blocks in the district and study has been conducted in some villages of these development blocks.

Objective: The basic objective of the present study is to examine the different innovative measures adopted by inhabitant of Lakhimpur district.

Review of Literature

Literature survey has been done to understand the ways and means of agricultural development of different region. Depending on adoption of agricultural innovation, implementation of improve farming technology yield and cropping pattern varies. A traditional society using traditional tool, unsophisticated technology are transformed into a modern, high technology, high income economy in which capital, labour skills and scientific knowledge gate replace from labour intensive methods of production (Singh's, 1994; Hodder, 2000; Ahmed, 2007; Dharmender Singh Chauhan, 2010). The use of tractor drawn implements like basin, lister, boar bed, fertilizer-cum-seed drill will help the cultivator to save operation time and conserve the rainwater in site resulting in better germination, crop growth and yield. The use of improved tractor drawn implements resulted in increased energy use and cost, the additional income realized from higher yield were more compensated than the additional cost generated and more profit as compared to non-using farms. The use of machinery and contractual field operations have to be popularized through proper extension of education. Agricultural development denotes the quality of the agricultural system of a region in terms of productivity, diversification and commercialization consistent with a desired state of agrarian relations and ecological balance (Gupta and Singh, 1975; Krishan, 1981; (Konwar, 1986; Aftab Uddin Ahmed and Kanak Kanti Bagchi, 2007) and for sustained agricultural development Indian Agriculture must rely upon improved agricultural technology and this technology has been incorporated into the farming system of India in a significant way.

Analysis and Discussion

Agriculture depends to a great extent on the physical factors of natural environment. The agricultural typology is related to natural environment and therefore, man without developed technology and science has little control over success or failure of the agricultural enterprise. The physical factors influencing agriculture of Lakhimpur district include topography, climate, Flood and soil erosion. Agricultural development of the district is determined by its topography. The soil of the district is alluvial and fertile and that is why crops flourish here without use of any artificial manure or hard labour in the past. The situation has been posing serious challenges to the life and livelihood of the people particularly of rural poor whose livelihood are very much dependent on the availability and quality of natural resources. About 80 percent of the population of the district depends solely on agriculture for their livelihood. The size of the operational holding in the study area is less than 1 hectare due to shifting of agricultural land to other allied agricultural sectors. Paddy is the main crop covering about 67 percent of the gross cropped area. Among principal crops of the district, Kharif crops cover the major parts of the gross cropped area followed by Rabi crops like Black gram, mustard, wheat, pulses (Statistical Hand Book Assam, 2014) as landuses are changing continuously by river bank erosion and severe flood every year

(Guite and Bora, 2016). Livestock rearing has traditionally been a source of occupation for a large majority of the people in the district since time immemorial. People of the district generally rear buffalo, cattle, pig, sheep, goat, and poultry and with that they also do fishing. The area has a water spread area of around 10708 hectare under various forms of fishery resources like ponds, tanks, swamps, beels, low-laying areas, derelict water bodies and rivers etc. Number of registered beels and river fisheries in the district is 11 and 08 respectively in 2011 having the production of 12350 tones (Economic survey of Assam, 2014-15)

Table.1 Number and Area of operational holdings as per size classes for All Social Group

Lakhimpur	2005-2006		2010-11	
Size (in hect.)	Numbers	Area (in hect.)	Numbers	Area (in hect.)
Marginal holdings (0.50-1.00)	42302	20508	59959	24070.83
Small holdings (1.00-2.00)	14515	18558	19556	27611.74
Semi-Medium holdings (2.00-4.00)	9947	26876	9913	26822.33
Medium holdings(4.00-10.00)	3411	18214	4165	21638.41
Large holdings(10.00 & above)	106	1854	157	5042.96
All sizes	70281	86009	93750	105186.27

Source: Economic Survey of Assam, 2014-15

Innovation in agriculture

Technology in agriculture is the systematic application of knowledge to the practical task of production. To produce maximum output from a plot of land innovation in agriculture is necessary because technology helps to increase efficiency of production processes. As population has been increasing at a faster rate in the study area, there has been need of more and more amount of food crops to feed them. Thus to solve the problem, production of both food and commercial crops should be increased by using innovative measures in agriculture. On the other hand, development or modernization of agriculture is not possible without technological innovation which in turn demands the development of infrastructure and application of modern inputs. The most important infrastructural measures and inputs are irrigation, introduction of H.Y.V. seeds, mechanization, fertilizers, pesticides, herbicides and insecticides. Different authors have identified empirically different inputs and infrastructural facilities are the determinants for causing spatial variation in the level of productivity.

Area under Irrigation

Irrigation is indeed the life breath of agriculture. Its importance in the development of agriculture hardly needs any emphasis. Diversification of cropping pattern from traditional mono cropping to multiple cropping as well as increase of productivity cannot be achieved without the irrigation facility. After introducing new agricultural

technology, irrigation has become one of the crucial factors in the package of inputs for attaining a higher level of agricultural productivity. The modern seeds like HYV need more and more water than any other (see table.2).

Table.2 Area (in hect.) irrigated during different years

Lakhimpur	Kharif	Rabi & Pre-Kharif	Total
2009-10	289.00	272.00	561.00
2010-11	670	188	858
2011-12	426	458	884
2012-13	505	415	920

Source: Chief Engineer, Irrigation Department, Assam, 2014-15.

High Yielding Varieties of Seeds

The HYV rice are namely Ranjit, Masuri, Bahadur, Pankaj, Basmati, Jaya, Biplav, China, China 420, IR-20, Suagmoni, Rongduli, Harkona, Purabenu, Mala, Pussa, Krishna, Lal Bihari, Forma, Dariya and Gaya etc. Among them Ranjit is found to be most preferred variety of winter rice followed by Masuri, Bahadur, Pankaj and Basmati. The summer rices are Jaya, China, China-40 etc. are important. These crops fetch more money than some of the major crops because of their higher market price and demand for these crops. Emergence of such cultivation of new crops like commercial banana, small scale cultivation of tea, aromatic oil plants like patchouli, citronella, lemon grass, wild grass etc. has contributed for the change of the cropping pattern of the district during recent years. This has been found to enrich the agricultural economy of the district. The cultivation of HYV seeds are closely related to the use of irrigation and fertilizer. The HYV seeds take less time and have early maturity. The new seeds are less resistant to drought and flood and thus require sophisticated irrigation and water control facilities and farmers have adequate knowledge and resource to protect the crops from pest and diseases by spraying insecticides and pesticides. In the district, extensive adoption of HYV seeds is another important feature of the modern agricultural practices. In the district the adoption of HYV seeds are mostly confined to rice cultivation and vegetables. HYV seeds of Boro paddy, ahu paddy and sali paddy, jute, wheat, maize, potato, pulses, rape and mustard pea, etc. Area under high yielding variety of rice in Lakhimpur is given below –

Table.3 Area under high yielding variety (HYV) of rice in Lakhimpur

Autumn Rice	Winter Rice	Summer Rice	Total	Year
(8.78%)	(76.92%)	(14.29%)	109990	2011-12
(9.23%)	(80.55%)	(10.21%)	90127	2013-14

Source: Economic Survey of Assam, 2014-15

Table.4 Areal (in hect.) variation of Autumn, Winter, Summer paddy in respective years of Lakhimpur district, Assam

Year	Autumn Paddy	Winter paddy	Summer paddy	Total area of paddy
1951-52	19643	156726	809	177178
1961-62	16382	165806	3909	186097
1971-72	21030	93400	40	114470
1981-82	24600	120000	400	145000
1991-1992	25000	97942	502	123444
2000-2001	19850	84084	18886	122820
2010-2011	15810	109980	16675	142465
2011-12	14499	114250	21815	150564
2012-13	14829	111100	19372	145301
2013-14	13000	111700	16400	141100

Source: Economic Survey of Assam, 2014-15

Fertilizer consumption: Excessive use of soil for growing various crops has depleted the nutrients from the soil. This increases the necessity of using chemical fertilizer in agricultural fields to replace the soil nutrients. Intensity of cropping requires the use of fertilizers both chemical and organic. The decayed vegetation and grasses of the agricultural fields, cow dung and composed manures etc. form the organic fertilizers. Ammonium sulphate, Supper phosphate, Urea and Potassium are the important chemical fertilizers. For better production of crops, both kinds of fertilizers are necessary. The use of fertilizer is another important requirement to increase the agricultural output. An increasing use of fertilizers followed the development of irrigation and changes in cropping pattern. The use of high yielding variety seeds necessitated the increasing use of fertilizers.

Table.5 Consumption of fertilizers in Lakhimpur district, Assam

Name of fertilizers	2011-12	2012-13
Nitrogen (N)	1736	4816.13
Phosphorous	403	431.68
Murate of Potash (K)	664	177.71
Total (N+P+K)	2803	5425.52
Consumption (Kg)	29.21	56.55

Source: Statistical Handbook of Assam, 2014

Level of Mechanization in Agriculture

Mechanizations of agriculture consists of replacing or assisting or both animal and human labour in farming by mechanical power. The use of high yielding varieties of crops, the improved methods of crops fertilization and the application of new measures of disease and pest control are the biological techniques that increase production per hectares of land. Mechanical power such as Tractor, Power Tiller, Thresher, and Pump sets. The development in technology including the use of modern hand tools, animal drawn implements, tractors, thrashers, sprayers, and more economic pattern of farm management plays a significant role in selection of crops grown and decision making at the farm level. These changes help in improving the agricultural productivity and production. The improvement occurs partly from the use of more effective equipments but also, because mechanization makes it possible to carry out farming operation more quickly. The use of such machineries is especially important for areas with two or more crops a year. The improved tools and farm equipments can change appreciably the cropping patterns, cropping intensity and crop combinations resulting in to high agricultural returns. Relief and geo-climatic conditions largely control the use of agricultural machinery and implements in an area. Besides, quantum of irrigation available, size of holdings, degree of intensification in farming, subsistence or commercial character of agriculture and the peasant's socioeconomic condition determines the use of farm implements. The use of age old agricultural tools has impeded production and one of the drawbacks of agriculture in the economics of under developed as well as developing countries (Singh & Dhillon, 1984) the plough made of hard wood is the age old implement and is still very common in the Lakhimpur district among the different social groups. The traditional system of agriculture has been gradually getting transformed into near modern one bringing remarkable dimension in the crop productivity pattern.

Vegetables: Vegetables are cultivated as commercial crops in the Lakhimpur district, especially in the community development blocks namely Boginadi, Narayanpur, Bihpuria and Nowboicha which are mainly inhabited by the Muslims of immigrant origin. Different kinds of vegetables are grown in large quantity by the farmers in this part of the district which are supplied to different parts of Assam as well as to other north eastern states. The farmers prefer to cultivate vegetables because it is more profitable than other types of crops. During the field survey, it was known from different farmers that the cultivation of vegetables is in fact more profitable than cultivation of rice. The vegetable cultivation is done by adopting the modern methods like irrigation, use of chemical fertilizers, HYV seeds, use of insecticides and pesticides, use of modern implements etc. The farmers sell their products at local markets from where these are exported to different parts of the district as well as to other parts of the state and thus they become economically sound.

Conclusion

The present work is an analysis of the transformation of agricultural development in Lakhimpur district and the existing pattern of agricultural development in the study area reveals different characteristics. Heavy machineries like tractors, power tillers,

and shallow tube well, pump sets, electric motor pump sets etc. are used by the farmers. Irrigation in the district is necessary due to erratic and unpredictable rainfall. There are different sources of irrigation but the shallow tube well irrigation supplies water to more areas. Irrigation is required for watering various kinds of crops, especially the Boro and winter rice. The study also reveals that as Lakhimpur district is bounded by river, flood is a frequently occurring disaster. Lots of cultivate land are waste away every year, therefore people of this area now-a-days doesn't only depend on paddy cultivation. Vegetables, poultry farming, pisciculture, banana cultivation is some allied activities adopted by the inhabitant of the district to a large extend. Agricultural and allied sectors have witnessed a significant transformation. Allied sectors like livestock and fishery have gained a significant share due to consistent higher growth and demand in the market.

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PALEOLITHIC SITES IN TAMIL NADU AND ANDHRA PRADESH: AN ANTHROPOLOGIST REPORT

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Abstract

This study aims to identify the Paleolithic sites in Tamil Nadu and Andhra Pradesh. To understand the Paleolithic culture and its presence in the Thiruvallur District, of Tamil Nadu, India has been chosen. There are 26 sites have been visited.. Such as the river beds, river banks, caves, foot hills and the tools collected found on the surface. To outcome the historical aspects in the study area is mainly concentrated. This paper motivates the research scholars to discover new things.

Key Words: Paleolithic sites, Paleolithic cultures and Anthropology.

1.1 INTRODUCTION

To understand the Paleolithic culture and its presence in the Thiruvallur District, of Tamil Nadu has been chosen. There are 26 sites have been visited.. Such as the river beds, river banks, caves, foot hills and the tools collected found on the surface. The exploration has extended upto 60 days (1st April to 31st May 2017). This paper is an outcome of author's personal fieldwork carried out during the summer holidays, of 2017.

1.2 OBJECTIVES OF THE STUDY

- a. To explore Paleolithic sites and observe the present condition.
- b. To study and observe the earlier works by the professional Archaeologists understand.
- c. To compare the tools available in these Paleolithic sites in India and Europe.

- d. To analyze the future course of Archaeological Anthropology with special reference to Tamil Nadu, in general and of Thiruvallur district, in particular.

1.3 RESEARCH METHODOLOGY

I have been trained in Anthropology discipline and studied Archaeology and Physical Anthropology as a core subjects at PG level. In the past one decade, I taught Archaeology subject to the PG students. I learned methodology of Archaeology fieldwork techniques. For understanding Paleolithic tools, and its typology, periods, usages, I have visited 26 sites, both in Tamil Nadu and Andhra Pradesh States. We collected tools on the surfaces, and in addition to various pits dug for rain water harvesting, forest paths, check dams, forest streams, and village ponds, lakes, stone quarries, reserve forest areas, cultivatable lands, hills, newly created in the forests, caves, and water holes/ponds for animals and numerous stone tools collected. These tools documented and photographs taken and tools names identified with the help of (Technical) Archaeologist. The tool types indentified and grouping were made. Finally, the technical report was prepared.

1.4 STONE TOOLS AND INTERPRETING BEHAVIOUR

The tools which used during Paleolithic period were crude and also very sharp. The stone tools like Pebble, Hand Axe, and Blade tools were found in Europe, France, England, North America, Australia, and Asian countries. The Pubble tools, which found in Olduvai Gorge, Tanzania dated from 1.7-2.6 million years old.

Similarly, large Paleolithic hand axe, are also found in India and Western countries. The oldest known stone-tool technology, from Gona is dated approximately 2.5 million years ago. About 1.65 million years ago in eastern and southern Africa, and often associated with Homo erectus. A new tool form appears i.e., called as the Achevelean stone-tool industry.

The tool-manufacturing site is called as "Ologesailie", in Kenya, about 70 k. m. from Nairobi. A bifacial hard axe was discovered in a limestone cave at Northern Spain. A flake tools were discovered in the cave on the island of Flors, Indonesia. The stone-tool industry associated with Homo Neanderlensis in Europe is known as the Mouster (in France). Refined tools were used by 2,00,000 years ago. Arrowheads, sharp cutting edges, fine points were produced. These type of tools discovered in Sipudu caves in South Africa.

Acheulean hand axes have been found at Ubeidiya, Israel. The earliest human fossils from East Asia surfaced from sites on the Indonesian island of Java, 1 million years ago. Fossils of homo erectus have also been found in China (8.4 million years ago). A few stone tools from Jobel Faya rock shelter, United Arab Emirates, has been found to 125, 000 years ago.

To understand pre-historic culture, we have the following sub-divisions:

1. Paleolithic period
2. Mesolithic period
3. Neolithic period
4. Bronze Age
5. Iron Age

The Abbevillian and Achealian traditions have a wider distribution. The hand axes of the first tradition were cruder and heavier while those of the Acheulian tradition, lighter and more systematic in form and shape.

Abbevillian Tradition

- The first piece of evidence of hand axes was found at the site of Abbeville in the Somme Valley, France, in 1836.
- There is a hand axe industry has been reported from Swanscombe located in Lower Thames valley in Kent, England.

Achealian Tradition

The term "Acheulian" derives its name from the type site saint Acheulian in the Somme valley, in France.

Clactorian Tradition

The tools of these cultural traditions were first found at the site of Clacton-on-sea in the channel beds of the river Thames, England.

Levalloisian Tradition

The evidence for this tradition has been found at the type site of Levallois, a suburb of Paris.

There are three main cultural traditions have been recognized:

1. Avrignacian
 - a. Perigordian
 - b. Aurignacian
 - c. Gravettian
2. Solutrean
3. Magdalenian

1.5 PALEOLITHIC CULTURE OF INDIA

The earliest discovery for the existence of man in India was made by Captain Newbold in 1836 in the form of ashmounds at Kudathini and Kupgal in Karnataka following which in 1842 Dr. Primrose found a large number of stonetools such as

blades and arrow heads, while clearing his garden in the Raichur district of the same state. In the same year, Captain Meadows Taylor found a ground stone axe at a place called Lingsugur also in Karnataka. In 1872 a Neolithic settlement was found by William Fraser on the "North Hill" of Bellary town and Kupgal or "Peacock Hill" near the village of Sanganakallu, about six k.m.s northeast of Bellary town. However, in 1863 the first stone axe was picked up by Robert Bruce Foote, near Pallavaram, Tamil Nadu. In the 50s of the 19th century John Evans published an account on the tools found on the bank of Narmada River near Jabalpur.

Colonel Meadows Taylor was engaged in the exploration and excavation of a large number of Megalithic monuments and also published reports on them, most of which were confined to the present Andhra Pradesh and Karnataka states. In 1863, when Bruce Foote reported the quartzite hand axe of Lower Palaeolithic period from the lateritic gravel deposits near Pallavaram in Madras and later in Gujarat, in 1862 the first neolith was picked up in Uttar Pradesh by a French man, Le Mesurier.

In 1930s, M.C. Burkitt of Cambridge University and L.A. Cammiade, a Magistrate explored the Krishna Valley and reported important Palaeolithic sites. In 1935, the Yale Cambridge Expedition, led by Professors H. De Terra and T.T. Paterson, examined the glacial sequences of Kashmir and Punjab, and correlated the results of the study to the sequences of Stone Age cultures of the Punjab, the Narmada and Madras. A good number of Indian scholars also made notable contributions. They are R. D. Banerji, Pandit M.S. Vats, DayaramShahniand N. G. Majumdar.

TAMIL NADU

The tool industries in South India often termed Madrasian as they first occurred at Attirambakkam. Later, Patterson, Krishnaswamy, Banerjee, Joshi had studied Attirambakkam and Vedumadurai sites. A few miles away from Attirambakkam is the Gudiyam cave which also yielded tools of lower, middle and Mesolithic period. Poondi is another site where the big and long blades of Acheulian industry and points of flake industry have been found.

ANDHRA PRADESH

From the Holocene deposits of small gravels looses silt contained microliths of the Mesolithic period. These evidence have been found in the river valleys of Krishna, Godavari, and Tungabhadra, as well as in different districts of Andhra Pradesh.

These sites have been studied by Robert Bruce Foote, Commiade, Burkit, Manley, Patterson, Zeuner, Krishnaswamy, Sounder Rajan, Subba Rao, Sankalia H.D, Isaac Roa, Murthy, Thimma Reddy, Rami Reddy and others.

The most important areas which yielded the evidence of lower Paleolithic tools are Bhavansi, Teegaleru, Rallavagu, Sagileru, Penneru, Rallakaluva, and Krishna etc.

NAME OF THE SITES AND COLLECTED TOOLS

1. Attiram Pakkam
2. Amarambedu
3. Ambakkam
4. Amirtha Mangalam
5. Beerakuppam
6. Pondavakkam
7. Erumaivettipalayam
8. Gazeelakshmipuram
9. Gudiyam
10. Gururajakandigai
11. Karadiputtur
12. Madanambedu
13. Mathurbakkam
14. Mavandur (or) Mamamdar
15. Manchankaranai
16. Neyveli
17. Othapai
18. Parikulam
19. Poondi
20. Poovalambedu
21. Roja Nagar
22. Sathiyavedu
23. Sivanamputhur
24. Veda-Madurai
25. Parandur
26. Vathiyur

Site 1: ATTIRAMPAKKAM

Attirampakkam (13°15'50"N, 79°53'20"E, 38.35m a.s.l), is an open-air Palaeolithic site situated near a meandering tributary stream of the river Kortallaiyar, northwest of Chennai, Tamil Nadu, along the southeast coast of India was discovered in September 1863, by Robert Bruce Foote and his colleague William King, it was investigated in the early to mid 20th Century by several scholars-T.T. Paterson, V.D. Krishnaswami and K.D. Banerjee. Later work on the prehistory of this region was conducted by A. Swami. S. Pappu's doctoral dissertation on the prehistory of the Kortallaiyar river basin, highlighted the importance of the context of artifacts at this site, in addition to other observations on the nature of the prehistoric record of this region.

The Earlier Work:

A brief summary of the Archaeological Survey on the Excavation of Paleolithic Sites in the Korattalayar River Valley:

In the old korattalaiyar river valley, three terraces at heights of 60, 20 and 8 feet noticed. With these and the earlier boulder conglomerate, the tools were related and thus evolution in the early Palaeolithic culture is postulated as follows:-

- I. *Primary Lateritic Plain: Sterile*
- II. *Boulder Conglomerate*
- III. *Earlier Group*

Non-lateritic with heavy cream coloured patina tools rolled which can be divisible as follows:

- a. *Earlier Series: Abbevillian hand axe with pebble butt and crude and irregular flaking.*
- b. *Late Series: Less patinated hand axes of early Acheutian type marked by step flaking.*

Second Group: Tools stained red but not patinated. Fine Acheutian hand axes pear and orated shapes appears.

Third Group: No laterite stained- Hand axes by cylinder hammer technique. Overate with flat step flaking. A few cleavers.

A) *Attirampakkam Terrace*

Along with early forms of hand axes which are generally rolled, very late Achulian type hand axes-thin, flat, elongated and made on flaked. In addition to these hand axes, there are cleavers of all types. Some exhibiting 'Vaal' technique and cross flaking after the 'Sohan' technique.

The top of the loom yields Levalloisian like flakes, with faceted platform and much primary flaking on the upper surface.

In order to understand the exact pre-historic culture sequence and also corroborate the culture appendage in the above terrace excavation carried out at many sites, notable among them Attirampakkam, Gudiyam and Vada Madurai.

Attirampakkam (Thiruvallur Taluk):-

The excavations carried out in the village over a high cliff overlooking the stream called Pudida-manu-vanka, revealed the following deposits starting from the top.

- | | | |
|----------------------|---|--|
| 1. Surface | : | Microlithic |
| 2. Brownish soil | : | Sterile |
| 3. Detrital Laterite | : | Post-Acheulian flake industry points, Scraper
Gravel and longish flake-blade. |
| 4. A. Clay | : | Acheulian tools including Hand axe and
Cleavers embedded in the Clay. |

B. Sriperumpudur : Natural formation without any tool
Shell assemblage.



Hand Axe

Site 2: AMARAMEDU

This site is located in Sathiyavedu area, under the control of ASI. The urn burial pots, pieces were collected from this side, blade tools and other tools collected from the site is given below. A five acres of land with laterite soil found in this site. A few scrapers were collected from the pit/water canal which is dug out for the rain water harvest. Amarambedu is located in Gumudipoondi Taluk. The blade tools, scrapers, hand axes were collected from a dry farm land near to state highways backside of the factory.



Adze Tool



Urn burial site

Site 3: AMBAKKAM (SATHIYAVEDU)

Ambakkam is located 6k.m. away from Uthukottai. There is a bus stop and opposite to that bus stop, there is a way to another village. For making metal-tap road, both sides four feet pit was dug by the highways department. From the pit, we got huge size hand axes. A few pieces of urns were collected. The tools were collected in the village is given below.



Paleolithic site

Site 4: AMIRTHAMANGALAM

This site has been studied by Pabitra Gupta and Pratap Chandra Dutta in the year 1955. It is a lateritic surface in the Ponneri Taluk in the district of Thiruvallur district in Tamil Nadu.

The site is adjacent to the villages Amirthamanagalam and Guruvaju Kundaigai (Lat 13 ° 24'N, Long 80 ° 4E) which are located at the 7th milestone on the Kavarapettai-Sathiyavedu road, running east-west. These tools are fine grained

quantzite, brown in colour. This site is a major tool manufacturing unit (Industry). This site is flanked by the river Arani, in Thiruvallur district, which flows about six miles of south-east. The following tools were collected from this site is listed below.



Adze Tools

Site 5: BEERAKUPPAM (Sathiyavedu, Chitoor District, Andhra Pradesh)

The Beerakuppam, Ambakkam, Sivananputhur, Madanambedu, all located in the Sathiyavedu area in Chitoor Taluk of Andhra Pradesh. Beerakuppam is a small village in Nagalapuram Mandal in Chittoor district in the state of Andhra Pradesh in India. From Sathiyavedu, buses are going to Nagavathi falls and this site is located 14 k.m. away from Sathiyavedu. We collected blade, point, burin, a huge size adze, scrappers and disc. Once this area was a forest hill lock now converted to mango plantations. The stone tools were collected from paddy field, adjoining to the lake. From Beerapakkam one can reach Sulurpet via Palayalam travel by Ghats's roads. The quarries are located in the T.D/Poramboku lands (No man's land) and with disturbed urn burials and Megalithic burials in this area. The collected tools were furnished below:



Adze Tool

Site 6: PONDAVAKKAM / SETHILPAKKAM

This village is located around 3 k.m. away from Mathurpakkam. This village fall under Gummudipoondi Taluk for Revenue Administration. A huge lake was in the west side of the village. The following tools were collected in the surface. Palaeolithic tools and scrappers were collected in a rain water canal.



Hand axe



Adze Tool

Site 7: ERUMAIVETTIPALAYAM

This village is located 6 k.m. away from Karonodai. There is a Kali temple. On those days, people sacrificed buffaloes to the deity. So, the name has given to this village. In this site one can find out urn burials. Paleolithic (middle) tools were found. This site is located in Panchayat Poramboku. Almost, all topmost soil upto "10 feet" deep were dug out (as quarries). The red soils were transported to Koyambedu bus stand formation. A few tools remain, and urn-burial pits were reported here.



Scraper in Situ condition



Scrapers in different shapes

Site 8: GAZEELAKSHMIPURAM (Thiruthani Taluk)

There are two hand axes collected from this village. A large number of boulders, pebble tools are found in this village. The two tools collected from this site is furnished below.



Hand Axe

Site 9: GUDIYAM

The places around Poondi and Gudiyam are dotted with a number of rock-shelters and natural cavern which were inhabited, temporarily by the pre-historic people. There are sixteen such rock-shelters identified, of which two of them yielded tools on the surface. Gudiyam is one of the important rock-shelters, where excavations were carried out both inside the rock-shelter and also in the adjoining area. Excavations within the rock-shelter revealed that the tool-bearing horizon extended from the ancient floor-level of the cave to the top slit layers, with a remarkable change in tool-types from the pest-Acheulian including unfinished hand axe in the lower pebbly gravel to the middle Stone Age group in the upper strata. Owing to the scanty occurrences of these tools in the excavated deposits, it may be inferred that the occupation of the cave was only incidental, perhaps during the periods of temporary exigencies.

The Paleolithic tools found in this region belong to hand axe tradition of Abbevillio-Acheulian stage. Since, it is available in fairly large quantity in and around Madras Oswald Menghin has applied the term "Madras Industry". From the date of first discovery of a tool of this industry by R. Bruce Foot at Pallavaram, innumerable sites have been discovered yielding Paleolithic (early and middle) and Mesolithic tools (ASI – Chennai circle).

Site 10: GURURAJA KANDIGAI

Bimal C. Dutta has conducted empirical research in this village in 1955. The site is flanked by the River Arani, which flows about six miles south-east. The artifacts are made of chert and quartzite. The urn burial pots were found both side of the national highway. This site disturbed by the Quarries. The tools which were collected in this area given below. The age of the burial in this region might be 500 B.C. It is located at 7 k.m. from Kavaraipet, Ponneri Taluk, Thiruvallur district. It is interesting to note that the three states of Palaeolithic (lower, middle, and upper) tools were collected from this site.

**Urn burial site**

Site 11: KARADIPUTHUR

This village fall under Thiruvallur Taluk under the Revenue Administration. One has to reach Palavakkam by walk, 3 k.m. towards east side. In all three k.m. the big boulders, pubble tools are found in the road side. We collected numerous scrappers, hand axe from this site. The collected tools were furnished below:

Site 12: MADANAMBEDU

It is located 10 k.m. away from Uthukottai. This village is belong to Chitoor district, Andhra Pradesh which is next to Ambakkam, Sivanamputhur then, Madanambedu village on the state highways. A 10 k.m. continuous stretch the local Panchayat dug out pits for harvesting rain water and also for the mango plantation (right side of the road). They dug out five feet deep pits, and the pubble tools and hand axes are found abundantly.

The tools collected in this site are given below.



Paleolithic site

Site 13: MATHARBAKKAM

It is a village comes under Gummudipoondi Taluk for Revenue Administration. One has to travel from Matharbakkam to Sathiyavedu, can notice Roja Nagar and Poomathikulam, various types of scrappers, hand axes, were collected. Now all lands are covered into paddy field. In few patches of uncultivated land, where we found tools.

Site 14: MAVANDUR or MAMANDUR (Thiruthani Taluk)

This village is located just 8 k.m. away from Thiruthani bus stand. From Thiruthani to Chennai can notice Muslim nagar next stop forest plantation stop can get down and to walk 3 k.m. towards north. We got down form national highways and walked through road, both side of the village road we collected few scrappers, and

hand axes. Blade tools were in the Mamandur Lake. The collected tools furnished below.



Hand Axe and Scrappers

Site 15: MANCHAN KARANAI

This village comes under Ponneri Taluk for Revenue Administration. From Karanodai bridge next there is a road junction. One can travel by share auto or bus one can reach this site. It is a small hill lock. Yellow colour sand with clay mixed, and settled hard form as a mountain. A few pieces of urn burial pots were noticed/collected. Down the hill, Irula tribal people living in a thatched houses with simple life styles.



Laterite formation: Urn burial site

Site 16: NEYVELI

According to ASI, this site located on the lower per plain showed the following stratigraphy.

- 1. Sandy surface soil : Sterile
- 2. Lateritic gravel : Middle Stone Age tools
- 3. Pebble-deposit : Sterille



Stone Hammers

Site 17: OTHAPAI

This village is located 8 k.m. form Thiruvallur (From Othapai bus stand one has to walk 1 k.m. in the east side of the highways road. There is 10 acres of land well fenced by ASI, it is a urn burial site, and also we can get hand axes, scrappers, blade tools). There is a forest plantation office (Nursery) is found in the Othapai village, we started our tool search from this place upto “Attirambakkam”, the next village. Both sides of roads, the forest bushes, pubble tools, large size scrappers and hand axes, burin were collected. The forest department has made a 20 feet length pit for harvesting rain water. They dug out four feet depth pit. The sand and clay they make a bank, we collected more than 20 middle Palaeolithic tools from this site, is listed below. In between Othapai and Attirambakkam, Kortallayar River flows. In the river, we walked 1 k.m. and collected 10 hand axes, scrappers on the river bank.



Bank of Kortiyaru river

Site 18: PARIKULAM

Parikulam is located (Latitude 13° 13N and Longitude 79° 51E) at an elevation of 87 m, MSL and situated on the western side of Kortallayar River near Poondi in Thiruvallur district. There is a mound which was formed in this village. I visited this site in 2009 and collected, disc, blade and hand axes. During that time a lot of uncultivated land found in the village (Poramboku). The tools were found on the land naturally (surface). But, I visited in the year 2017 along with the PG students of my department. The barren lands are converted into cultivatable lands. The dry crops are found in the land. A huge size hand axe they kept in small chamber under (200 year old) neem tree and worship them. A huge 8 feet Anjaneyar (Hanuman) statue was depicted in a huge stone laid under the tree. This stone statue is also unique one. There is a huge lake and water canal/odai, found nearby the site. Parikulam is tool making industrial site. There are various types of pubble tools, axes in various size are found.

Site 19: POONDI

According to ASI, Chennai, the excavation in Poondi revealed the following stratigraphy from top to bottom:

- | | | |
|---|---|------------------------|
| 1. Surface | : | Sterile and Sandy soil |
| 2. Sheet-gravel primary or re-deposited | : | Middle Stone Age tools |
| 3. Sheet-gravel | : | Lake Acheulian tools |

From Poondi bus stop (SH), we got down and walked towards Poondi Dam (2 k.m.) we noticed few scrappers, blade tools. The way to Poondi Dam, both the sides are reserve forests, the Pubble tools, boulders are found numerous. This Dam was built in 1970.



Stone hammers

Site 20: POOVALAMBEDU

From Kavrapettai, 10 k.m. away this village is located. Next to Amirthamangalam this site is found. From Poovalambedu bus stop towards north side there is a water canal/odai is found. This odai reaching Othapai Lake. We collected blade, pubble tools, etc. The tools which were collected in the odai is furnished below.



Flake, Blade, Celt Tools

Site 21: ROJANAGAR

This site is located in between Matharbakkam and Sathiyavedu. We collected numerous scappers, and blade tools. The big boulders, pubble tools found elsewhere in the village people taking those stones for house construction, black and red soil

found in this area. Paddy is a principle crop cultivated wider area. The water level found in wells within 10 feet depth.

Site 22: SATHIYAVEDU

Sathiyavedu area spread both in Tamil Nadu and Chitoor of Andhra Pradesh. The entire area is covered by forest, bushes and hilly terrain. Madanambedu, Beerakuppam are located in Chitoor district. There are crude types of hand axes, scrappers, blade tools found in this area. The tools which collected in paddy lands and lakes are furnished below. Nearer to R.M.K. Engineering College, the urn burial remains and there are laterite formation found. Due to Quarries almost all urn burial sites fully damaged. The blade tools, scrappers are found.

Site 23: SIVANAMPUTHUR

From Uthukottai to Sathiyavedu, there are many sites found. Ambakkam, Sivanamputhur, Madanambedu, Beerakuppam sites are found on the road side (NH). From Sivanamputhur koot road to Sathiyavedu, both sides of state highways more than 10 k.m., the district Panchayats dug a 7 feet deep pits for rain water harvesting. The pubble stones and red soil put near the road side. There are numerous hand axes, adze, blade tools, scrappers collected. The tools collected from pits were furnished below.

Site 24: VEDAMADURAI (Thiruvallur Taluk)

The excavation of the place has revealed the following stratigraphy (top to bottom):

Lateritic Clay	Deposits contain Acheulian tools
Lateritic gravel containing detritied laterite and quartzite boulders	Acheulian tools in manufacturing stages were found in fresh condition
Boulders and gravels in the matrix of sand and clay composed of boulders and gravels of Sathyavedu sand stone	A few extremely rolled early Acheulian tools
Sriperumbudur Shells	Natural formation without any tools appendages

This site, therefore, shows the industry with a possibility of a redeposit earlier Acheulian industry found in the grave deposit. We collected scrappers, hand axes, etc. the River Arani flows 3 k.m. from this village. The Periyapalayam Amman Temple is found 3 k.m. away from Vedumadurai. The paddy lands are converted into house construction sites. We have collected few tools in the north side of the village, where Palyamura (Palm) trees are found. The tools which collected are listed below:



Hand Axe

Site 25: PARANDUR

This village is located 12 k.m. away from Kanchipuram town. We collected hand axes (crude size), scrappers, borer uniface pubble tool, pieces of urn burial pots, etc. These tools all are found around the Primary Health Centre (PHC). Opposite to this centre a water canal was dug by the PWD (30 feet breadth). We found lot of pubble stones in the banks of the canal. The tools which collected in the site is furnished below.

Site 26: VATHIYUR

This village is located just 15 k.m. away from Kanchipuram town. One has to reach "Kuram" village. Then walk 3 k.m. to reach Vathiyur. There is a Vaishnavite temple is located here. It is one of the temples out of 108 deviaisthanam of Lord Perumal. From Vathiyur to Thirumalpur we made a walk of 4 k.m. we noticed several urn burial pots, totally all broken into pieces due to road widening work. We noticed variety of pubble stones in different shapes. The River Kurutuaru was flowing in this village. From Vathiyur, we reached Thirumalpur village. From this village, buses available to go to Kanchipuram town. We could not collect a single tool in this 4 k.m. stretch. There is one ASI site is found in Thirumalpur. It is well fenced.

CONCLUSION

We collected tools from various places like forest, lakes, hills, wet lands, water canals, and caves. More than 300 stone tools were collected. The tools were classified according to its types. The entire Thiruvallur district is a treasure trove. The tools which found in France, Europe, and England, the same type of stone tools found in the sites of Tamil Nadu. The Uthukottai, Madanambedu, Sathiyavedu, Othapai and Kortalai aru are the few sites still yielding various types of tools. The urn burial sites, almost destroyed by modern man. The modern man never gives importance to the ancient burial sites. The Madanambedu might be a tool manufacturing site, similar to

Parikulam and Vepanapalli hills (Era kettu hills which are near Kuppam, Andhra Pradesh).

The preliminary report was presented in this paper. The detailed information about the Archaeological investigation will be published as a book form very soon.

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