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# Reasons for the Decline of Bicycle Industry in Pakistan

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## CHAPTER # 1

### “PROBLEM AND ITS BACKGROUND”



#### 1.1. INTRODUCTION

Bicycle manufacturers of Pakistan are encountered with problems including high cost of inputs, shortage and non-consistent availability of electricity and lack of modern technology. That's why Pakistani made cycles are four folds expensive than imported cycles and are uncompetitive.

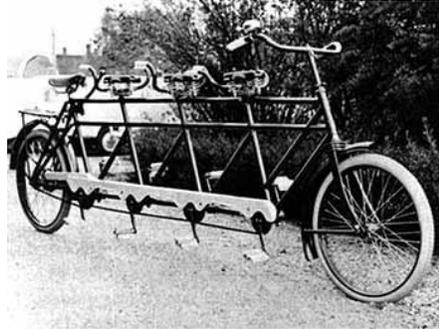
In this project I have discussed the main problems which our bicycle industry is currently facing or has faced which has resulted in its decline and also the factors that are hindering the production and export development in this sector. Also I have provided some possible suggestions in order to overcome those problems.

#### **Development of the Bicycle Industry**

Bicycle is still considered as “traditional mode of transportation” due to its easy handling. There used to be about 50 true bicycle factories and hundreds of bicycle brands all over the world upto 1872. Two pioneers of bicycle development were **J.T. Scholte** who was one of the first, or maybe the first to set up a bicycle trading business in **Amsterdam**, and **H.H. Timmer**.

Due to technical improvements bicycles became more and more popular at the end of the 19th century. Prices began to decrease due to batch production and an oversupply of bicycles from America. Whereas initially bikes were largely used for sport and

recreation, now that bicycles were becoming more affordable they rapidly gained in popularity with the common folk as a standard means of transport.



**Technically improved bicycle**

Bicycle industry flourished in the post war years, the years 1922 to 1926 show quite negative expectations about crisis and strong international competition, especially for the bicycle industry. But in 1927 times changed again with some more good years ahead.

The twenties and thirties were apparently a very unstable period. The economic recession coming from America in 1929, gradually affected European countries as well, causing a downturn in bicycle production from that year on. The production increased again after 1934, but consumers still didn't have much to spend. Therefore bikes from the beginning of the thirties are often of lower quality. The crisis didn't end until the year 1936. By 1939 the total number of bicycles reached 3,300,000.

## **Bicycle Sector of Pakistan**

Bicycle market can be categorized into two segments:

- **Standard bicycle**
- **Fancy bicycle.**

**Standard bicycle** is the smaller segment worldwide and is on the decline with more and more companies turning towards **fancy bicycle**. But in Pakistan standard bicycle is the bigger segment. The fancy bicycle segment has been further divided into many sub-segments, which includes: Mountain Bike/All Terrain Bike, Tricycle, BMX, Electric bicycles and recumbent bicycles.

In Pakistan only two Lahore based bicycle manufacturers make “**Sohrab**” and “**Eagle**” brands as their combine production is merely 0.590 million units per year, while another few brands are being manufactured by some vendors and assemblers which are on sale in the domestic market. The market of cycles is scattered all over Pakistan with minimum coordination between producers and sellers that limits the designing and failed to gauge the market size.

The Pakistani bicycle industry is capable of producing 1.45 million bicycles per annum, but during 2002-2003, 658,000 bicycles were produced, indicating a capacity utilization of only 45%. During this period, 430,000 bicycles were smuggled into Pakistan. \$11,000 worth of bicycles was exported from Pakistan for the first time. Pakistan is a major manufacturer of bicycles but the usage per capita is low as compared to countries like India and China. If bicycle imports from India are allowed, then it will be difficult for the local bicycle industry to survive.

## **1.2. STATEMENT OF THE PROBLEM**

My objective in this research is:

“To determine the factors, hindering the production and export development in the Bicycle industry of Pakistan and to provide possible solutions for its improvement.”

Few problems faced by the manufacturers are:

- Poor assessment of the world market and poor designing of bicycles for exports.
- Manufacturers more involved in manufacturing standard bicycles as compared to the fancy bicycles, as the demand for the standard bicycles is shrinking.
- Smuggled bicycles coming mainly from China has taken up the large domestic market for bicycles of Pakistan.
- The untapped export market for bicycle due to lack of export-oriented approach, among most of the manufacturers, for future survival.
- Problems due to the Regulations of State Bank of Pakistan and Central Board of Revenue for the exporters.
- Entry barriers for the new entrants into this sector.

### **1.3. SIGNIFICANCE OF THE STUDY**

Unfortunately, the share of Pakistan in exports of bicycle is almost zero while China dominates the world market with export of around US \$1 billion worth followed by Italy with US \$205 million, Netherlands US \$133 million and Mexico US \$81 million. Increased export of Pakistani bicycles is required not only to make this sector successful but also to increase the sales tax revenue for the government through higher and good quality production in the local bicycle industry.

I planned to work on this project because it would help me in better understanding the business environment (as I am ready to enter into it) and the tact (strategies) of facing the strong competitive environment. Plus this may also help the **manufacturers, vendors, government** etc who are directly or indirectly related to this field and who really want to improve the condition of this sector. I hope that this research would positively help to improve this system of working.

#### **1.4. SCOPE & DELIMITATION**

The purpose and scope of this information is to introduce the subject matter and provide solutions on the said area. But in doing so I have faced certain limitations like most of the bicycle manufacturing units are in LAHORE, e.g. Sohrab and Eagle-the two leaders of the sector are in Lahore. Only small-scaled assemblers or vendors are here in Karachi.

#### **1.5. BASIC ASSUMPTION**

All the material included in this document is based on certain assumptions. Through out the research I have discussed the facts and the solutions with an assumption that the demand of the product existing today would remain constant throughout the duration of making this report. Further as we know that WTO is coming in 2005 and its rules will be implemented here in Pakistan as well. But in my report I am assuming the present scenario because WTO will change the whole scenario as more and more import of cycles from china would increase and our sector may decline.

## CHAPTER # 2

### “RESEARCH METHODS AND PROCEDURES”

#### 2.1 RESEARCH DESIGN & METHODS

While designing the research it is kept in mind that it should be in line with the purpose of the study and it should serve the cause. All the barriers and expenses are kept in mind while designing the research.

As the topic is really very broad and informative, that's why this research is done not to solve the issues but it will just add or contribute to understand and gather more knowledge for making bicycle sector a viable unit in Pakistan's economy and some suggestions for its improvement.

The topic is analyzed and studied in natural environment. So the research is a **Fundamental research** and the suitable design for the research is **Descriptive**. Surveys are also conducted, which is administered by myself, and there I have conducted **Unstructured Interviews** regarding their problems related to the field of the respondents.

In order to get knowledge regarding the answers to the stated problems, the respondents are contacted just once, and thus the study would be “**Cross Sectional**”

#### 2.2. RESPONDENTS OF THE STUDY

Respondents of the study are the representatives of the bicycle manufacturing units, vendors, analysts who already have researched over the decline of this sector, employees of Export Promotion Bureau (EPB), SMEDA, Federal Bureau of Statistics (FBS). They have provided me valid information regarding the procedures and problems of this sector.

## **2.3. RESEARCH INSTRUMENT**

Only **Face to Face unstructured interviews** are carried out and while doing this all the answers were noted down personally in order to avoid the recording errors. For the secondary data all the books and the annual reports were shifted to the computer documents using scanners for the makeover and further study, to save time and cost. The data collected through Internet is in the form of word documents, acrobat files and other forms of documents.

## **2.4. SOURCES OF DATA**

All the material included in this document is based on data/information gathered from various sources but mainly it includes:

- Primary ( you collect yourself for the research)
- Secondary (already available or published)

### **Primary data**

It is always needed when secondary data is not sufficient for your needs. I would be collecting it primarily through face to face unstructured interviews, some in-conspicuous measures (observations).

### **Secondary data**

It's sources would include reports of different analysts over the bicycle sector, publications on export or import of bicycles and problems of this sector.

## **2.5. TREATMENT OF DATA**

Only the primary data gathered during its collection is analyzed in **verbal context** that is quantitative framework not in numerical context. Graphical comparisons, Tabular data are definitely included in my research showing some cost figures, sales figures, demand and capacity comparison, otherwise no such statistical data will be included. Based on all these figures sector analysis is also been provided in the report.

## CHAPTER # 3

### “REVIEW OF RELATED LITERATURE & STUDIES”

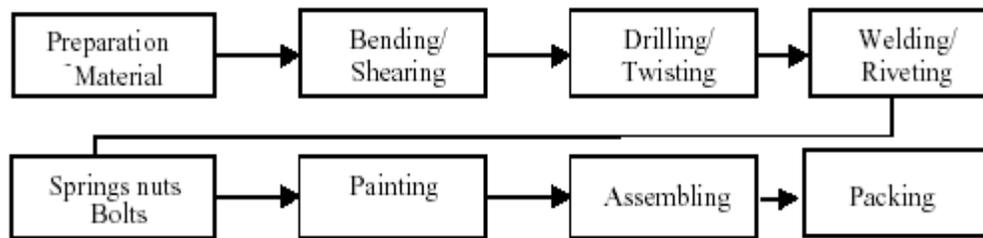
#### 3.1 BICYCLE MANUFACTURING AND PROCESS COSTS

Bicycle manufacturing includes 5 parts

1. Carrier
2. Stand
3. Crank & Sprocket
4. Pedal Arm
5. Handle

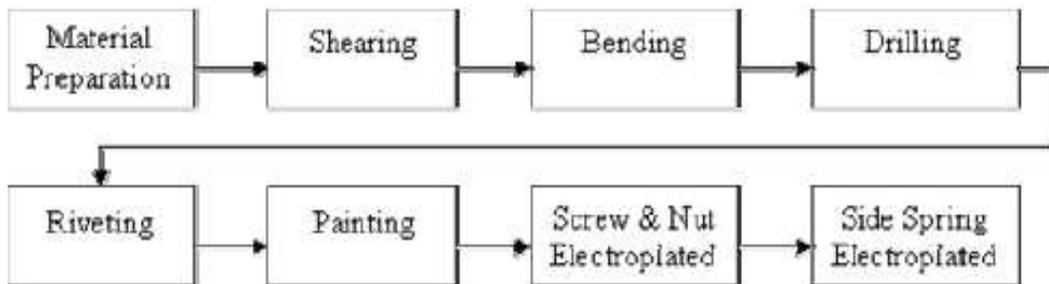
##### 1. Carrier

Total project cost of the bicycle carrier-manufacturing unit is Rs 0.9 million. Out of this capital cost of the project is Rs 0.74 million, and the rest is the working capital requirement.



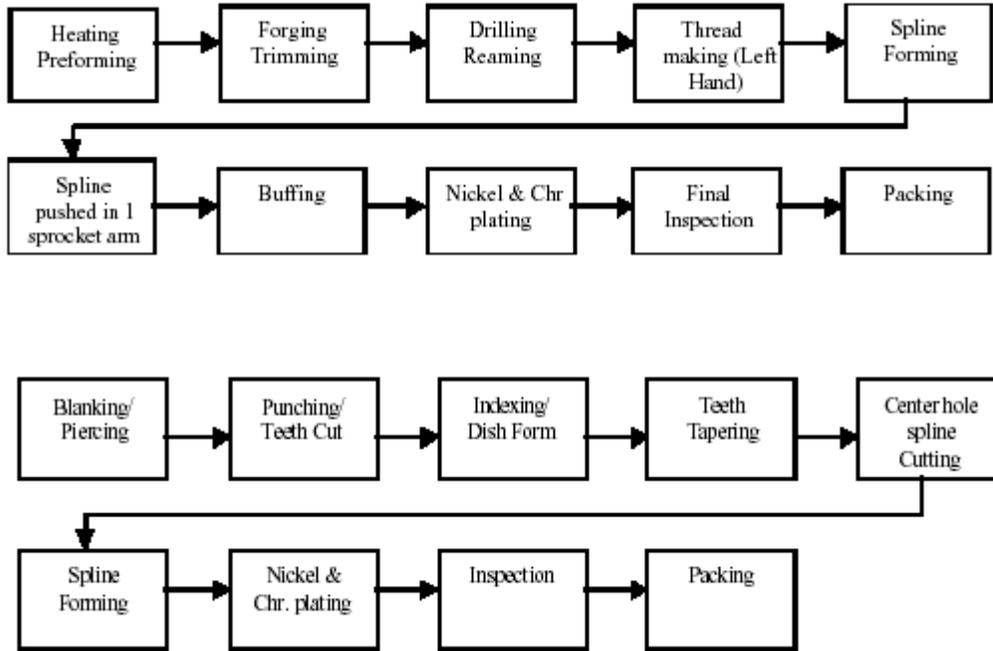
##### 2. Stand

Total project cost of the bicycle stand-manufacturing unit is Rs. 0.91 million. Out of this, capital cost of the project is Rs 0.72 million, and the rest is the working capital.



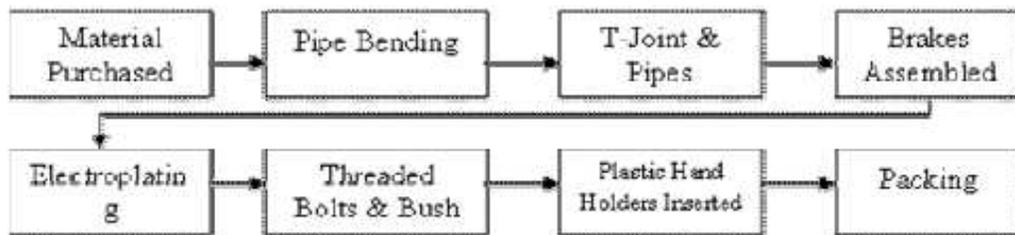
### 3.4. Crank & Sprocket and Pedal Arm

Total project cost of the bicycle **crank sprocket** and **pedal arm**-manufacturing unit is Rs. 2.13 million. Out of this, capital cost of the project is Rs 1.77 million, and the rest is the working capital.



### 5. Handle

Total project cost of the bicycle handles manufacturing unit is Rs. 1.13 million. Out of this, capital cost of the project is Rs 0.9 million, and the rest is the working capital requirement.



### **3.2 CURRENT INDUSTRY STRUCTURE**

The Pakistani bicycle industry is capable of producing 1.45 million bicycles per annum but during 2002-2003, 658,000 bicycles were produced indicating a capacity utilization of only 45%. During this period, 430,000 bicycles were smuggled into Pakistan. The following table gives a brief overview of the Pakistani bicycle market and shows the total sales, market size, workforce employed, and number of vendors:

**Table: Total Annual Sales of Bicycles and other Market Related figures -2002-2003**

Installed Capacity (units)	1.45 Million
Capacity Utilization	45%
Total Sales Market	Rs 7 Billion
Total Workforce Employed	21,000
No. of Vendors	300
Market for Bicycles	Rs 3 Billion
Replacement Parts Market	Rs 4 Billion

In 1999, \$11,000 worth of bicycles was exported from Pakistan for the first time. Pakistan is a major manufacturer of bicycles but the usage per capita is low as compared to countries like India and China.

**Table: Major Players (Bicycle assemblies - standard, fancy, and smuggled)**

<b>Name</b>	<b>Location</b>
Chinese Phoenix (Smuggled)	China
PCICS (Sohrab)	Lahore
Capital Industries (Eagle)	Lahore
PECO (PECO)	Lahore
Falcon	Lahore
Sony	Lahore
Hero Super Sports	Lahore
Orient	Sialkot
Prince	Karachi
Olympic	Karachi
Eagle(Karachi)	Karachi
Sindh Cycle	Karachi
Hero Cycle	Karachi
Unorganized Sector & ABJ	Karachi

Although, there exists a large domestic market for bicycles but domestic industry is unable to gain full benefit out of that due to smuggled bicycle, mainly from China. According to estimates, control on smuggling may result in 40-50% increased production to cater to the demand of the local market.

The following table shows the current demand supply situation of bicycle in the country and the gap, which remains untapped:

**Table: Demand Supply Gap**

	<b>Number</b>
Annual Estimated Demand	9,500,000
Bicycles on the Road (2003)	6,977,000
Demand Supply Gap	2,523,000

Bicycle market can be broadly categorized into two segments:

- Standard bicycle and
- Fancy bicycle.

Standard bicycle is the smaller segment worldwide and is on the decline with more and more companies turning towards fancy bicycle. But in Pakistan standard bicycle is the bigger segment. The fancy bicycle segment has been further divided into many sub-segments, which includes: Mountain Bike/All Terrain Bike, Tricycle, BMX, Electric bicycles and recumbent bicycles.

### **3.2.1 Export Market**

The total international trade of bicycles in 2003 was \$2,958 million, which has grown at an average rate of 2.6% during the past three years. China was the largest manufacturer with the total exports of \$778 million during 2003. The following tables show the major exporters and importers of bicycles in 2003 respectively:

**Table: Major Exporters of Bicycles in year 2003-04**

<b>Country</b>	<b>\$ million</b>
China	778
Italy	205
Netherlands	133
France	75
USA	69

In addition to the above, Taiwan is also one of the largest exporters of bicycles in the world.

### **3.2.2 Chinese bicycle captured 25% share of Pakistani market**

Pakistani bicycle manufacturers have lost 25% of local bicycle markets to low priced Chinese bicycles. Thousands of Chinese bicycles are brought into Pakistan under the umbrella of Afghan Transit Trade every month, which is smuggling! Annual sale of Pakistani bicycles is around 700,000 to 800,000, but these figures are continuously declining due to the inflow of Chinese bicycles. Local bicycle manufacturers are facing hard time especially in the provinces of Balochistan and NWFP as these markets are flooded with smuggled Chinese bicycles.

All Pakistan Cycle and Cycle Parts Manufacturers Association (APCCPMA) has urged the government to take necessary steps for the protection of local bicycle industry because production of local bicycles has declined drastically, posing a threat to the jobs of thousands of workers apart from the revenue loss to the government.

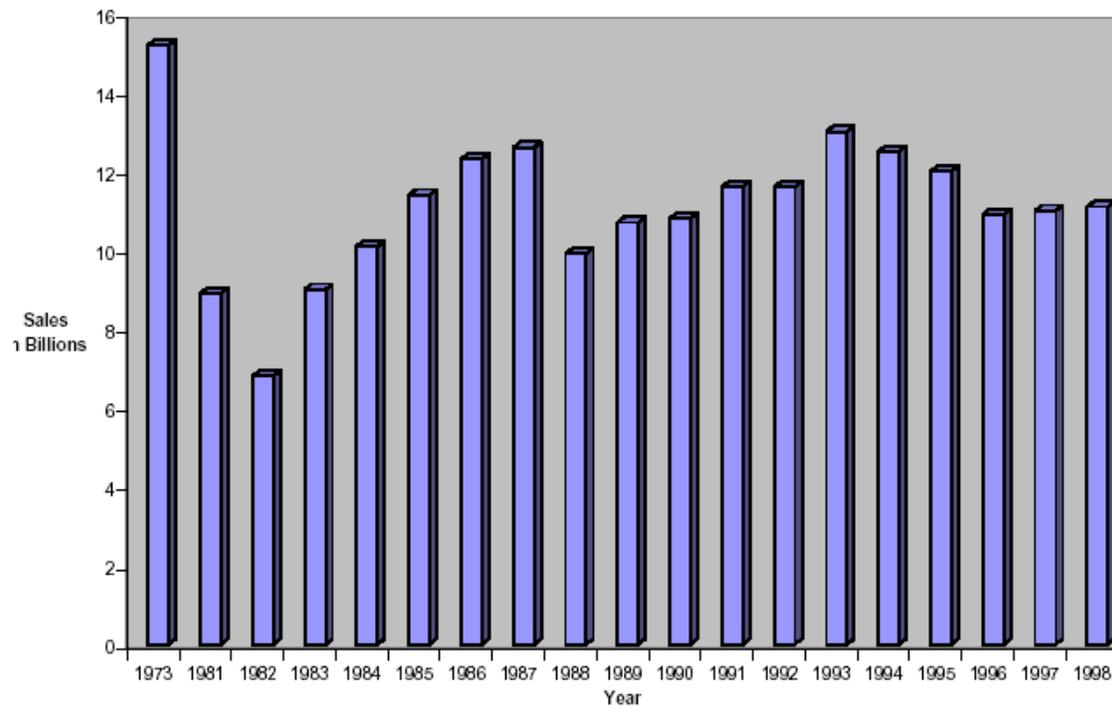
Pakistani bicycle market is struggling to establish itself due to increasing raw material prices and competition from smuggled Chinese bicycles. For a new manufacturer to establish itself in this sector, he would need to concentrate on the fancy bicycle segment

and can only flourish if he enters into a joint venture agreement with some, large international brands.

### **3.3 Foreign Industry & Consumer Analysis**

The US bicycle market is currently estimated to be a 5 billion-dollar industry. In the United States, bicycles remain a popular medium for both fitness and leisure. The chart below shows the course of bicycle sales in the US over approximately the last two decades. This chart illustrates the continuing trend of the thriving bicycle industry in the US.

**History Of United States Bicycle Unit Sales**

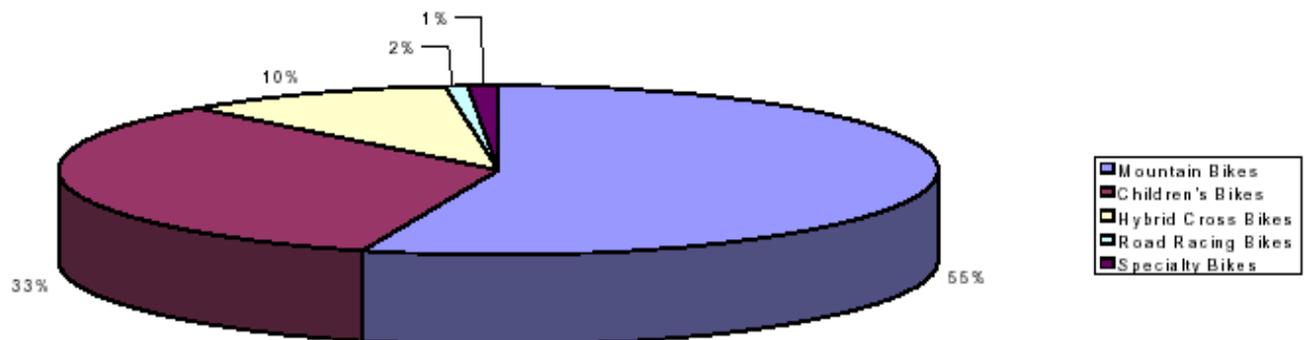


Unfortunately, the share of Pakistan in exports of bicycle is almost zero while China dominates the world market with export of around US \$1 billion worth of two and three wheelers every year followed by Italy with US \$205 million, Netherlands US \$133 million and Mexico US \$81 million. The regional export data revealed that China, India and Indonesia are marketing their bicycles to the number of countries and earn around US

\$1 billion, US \$30 million and US \$15m respectively. The import ratio shows that every year USA imports 31%, Japan 10% , Germany 9%, United Kingdom 6%, France 6%, Hong Kong 5%, and other countries import 21% of foreign made two or three wheeler cycles to meet the growing demand of their citizens.

The production of the bicycles in the world is around 100m units and **China again leads the arena by producing around 40m units annually**. The study shows in China every 2.47 persons own a bicycle, in India the ratio is much higher to 13.54 persons per bicycle while contrary to this 30 Pakistanis use single bicycle.

**The chart below shows the china bicycles sales for 2003.**



### **3.3.1 INDIA**

Since the early 1970s India has emerged as one of the world's major bicycle producers. During the period covered by this study, production continued on a definite upward trend, reaching about 5 million units in 1981/82. Current production is reported to be close to 6 million units annually.

The Indian bicycle industry is almost entirely self-sufficient, with more than 95% of its bicycle components supplied from domestic sources. It also obtains most of its raw materials, such as steel tubes, from within the country.

It concentrates on producing a simple, cheap, and rather old-fashioned roadster model. This could be seen as a deliberate attempt to satisfy the basic transportation needs of the less affluent segment of the population. It has made minimal use of foreign technology, creating or adapting most of the technology it employs and emphasizing labour-intensive production techniques. Although it procures a substantial volume of its components from a large number of small producers, final production is strongly concentrated. Five companies account for about 80% of total bicycle production, as estimated from the 1981/82 figures.

In view of the size of the domestic industry and more particularly of the high degree of market protectionism it enjoys, export possibilities to India are extremely limited. Market access is likely to remain difficult in the foreseeable future. The Indian Industry, however, recognizes that the quality of its bicycles has to be improved in order to increase its competitiveness on foreign markets. Within this context, opportunities for foreign collaboration exist, although mainly for the production of certain types of components.

India can therefore be perceived only as a potential supplier of either bicycles or bicycle components, or both. It is among the world's 10 largest exporters of these products. Some of the reasons for its success are described below.

First, India aims at a market segment that is more responsive to the quality/price mix of the type of bicycle it produces. More than 90% of its exports are directed towards other developing countries where the basic transportation needs of large numbers of less affluent people are far from being satisfied. Second, India benefits from favourable market access conditions in some countries as a result of preferential trading arrangements. It has, for instance, a tripartite foreign trade arrangement with Egypt and Yugoslavia. Finally, and perhaps most importantly, India has been eminently successful in entering into joint venture and licensing agreements for the production of bicycles and

components in many developing countries. This breakthrough might be attributed to the fact that India offers a technology appropriate to the needs of many developing countries. Its strategy of collaboration benefits both itself and its partners. On the one hand, the strategy enables other countries to establish or develop their own bicycle manufacturing industries; on the other, it provides India with better conditions of market access and with opportunities for increased trade in products other than bicycles, for example, components and occasionally capital equipment.

The prospects of India's bicycle industry on both its foreign and domestic markets seem therefore to be bright. The domestic market is far from saturated. The replacement market alone is likely to generate annual sales of 3 million bicycles in the near future. The leisure market is just beginning to be tapped.

### **3.3.2 INDIA - Market access**

The Indian market is virtually closed to foreign suppliers of bicycles and bicycle components as a result of licensing requirements and heavy import duties.

A standard customs duty of 100t is levied on bicycles and components. In addition, according to the Finance Bill of 1983, an auxiliary duty of customs is payable on all imported goods, which, in principle, is fixed at 50% of c.i.f. values. This rate, however, is in fact not applied as other rates can be established by the Minister of Finance. Thus according to the latest regulation, issued by the Ministry on 1 March 1984, the auxiliary duty of customs is 40% when the import duty exceeds 60%, which is the case for bicycles and components. No auxiliary duty is payable when a replenishment license is granted.

### **3.3.3 INDIA - Market characteristics**

#### **1. Pattern of consumption**

According to the Council of Applied Economic Research, the number of bicycles in use would nearly have doubled since 1975, when it was estimated at around 25 million units. About 60% of the current total would be more than 5 years old. It is reported that old bicycles are not thrown away, but repaired, refurbished and even resold by the manufacturers.

The ownership level expressed in terms of 1000 inhabitants is around 65 bicycles, which is rather low. However, this figure is inappropriate to India as the average family comprises 7 members. Ownership levels would therefore be better indicated by the number of bicycles per family. One of every two families possesses a bicycle. Trade sources say that approximately 70% of all bicycle owners live in the rural areas.

New demand is generated particularly by people between 16-25 years old and belonging to the lower to upper- middle social classes, the greater part of replacement demand originates among people over 35 years of age. Host of demand comes from males demand from women and children, while still marginal, is rising.

The bicycle is principally a transport means, one among others available for those living in urban areas or the most important transport vehicle in the rural regions. The leisure-oriented stage has not yet been reached, but a fairly evident leisure orientation appears in the greater urban centers. Demand for bicycles is therefore still essentially directed towards the traditional roadster.

#### **2. Advertising and promotion**

No information could be obtained on advertising and promotion at the consumer level. It would appear, however, that not much has been done, probably because of the strong and steady domestic demand.

As regards foreign markets, trade promotion efforts have been remarkable. These include participation in trade fairs and exhibitions in many European, North American, African and Asian countries; wide distribution of catalogues, for example, "A Guide to the Bicycle and Components Industry in India", which is published in English, German and Arabic; implementation of several Contact Promotion Programmes for bicycles and components such as those carried out in the Netherlands in 1980, and in Thailand, Indonesia, Singapore and Malaysia in 1983. Exporters have benefited from the active support of institutions such as the Indian Trade Development Authority and the Engineering Export Promotion Council; international organizations such as the International Trade Centre UNCTAD/GATT, and developed country institutions such as the Centre for the Promotion of Imports from Developing Countries, in the Netherlands, have likewise provided assistance.

### **3.3.4 BRAZIL**

#### **Production**

The manufacture of bicycles and components in Brazil started in 1942 during the Second World War, as a result of difficulties in importing these products from traditional European suppliers. By 1948, a large proportion of the bicycle components used in the country were being produced domestically.

It was, however, not until 1978 that Brazilian demand for bicycles began its rapid expansion. This was due to several reasons, including the introduction by Brazilian manufacturers of technical innovations such as adjustable saddles and handlebars, and folding models, and the use of flamboyant colors.

As a result, bicycle production increased from about 141,000 units in 1967 to a peak of about 2.8 million units in 2004, as the figures below show.

*Year*      *Production of bicycles*  
(number of units)

1967	141,267
1979	1,846,427
1980	2,797,603
1992	2,454,896
1999	2,185,439
2004	2,050,000

*Brazil: apparent consumption of bicycles, 1979-2004*  
(in units)

Year	Production	Imports	Exports	Apparent consumption
1979	1,846,427	208	204,322	1,642,313
1980	2,797,603	647	192,807	2,605,443
1992	2,454,896	129	157,737	2,297,288
1999	2,185,439	212	35,037	2,150,614
2004	2,050,000	94	27,097	2,022,997

## **Market characteristics**

### **1. Pattern of consumption**

In 1983, Brazil had an estimated 18 million bicycles in use. About 10 million Brazilians, or 8% of the population, utilize bicycles as their principal means of transportation.

Usage is particularly high in the south, south-east and north-east. The trade reports a higher proportion of bicycles among the urban population, since demand in the rural areas, where about 35% of all Brazilians live, remains to a large extent untapped.

The limited availability of the required infrastructure, such as bicycle paths, has traditionally prevented a much larger use of bicycles as a basic means of transportation. Utilization is wider in the small and medium-sized cities than in the large cities where the heavy car traffic renders bicycling unsafe. More recently, however, Brazilian authorities have taken measures to develop the infrastructure required in order to encourage the use of bicycles in the country (see following section on advertising and promotion).

Bicycles are sold throughout the year but between 55 and 60% of sales are made in the second half of the year when demand for children's bicycles is greater owing to end-of-the-year festivities. In the first half of the year, demand is mainly for the roadster or tourist types for transportation purposes. According to trade sources, these bicycles account for about 50% of domestic demand for bicycles.

## **2. Advertising and promotion**

As reported by the trade, the Two-Wheel Fair held every two years in Sao Paulo SP in July, has a significant influence on both domestic and foreign sales of bicycles and other two-wheel vehicles. The fair, like those held in Cologne, Milan and Paris, aims mainly at demonstrating the potential of the two-wheel vehicle not only for leisure but also as a means of transportation.

### **Market access**

#### **Customs duties and other taxes**

Imports into Brazil are divided into three categories:

1. Goods free from all administrative requirements;

2. Goods requiring an import licence (guia de importacao); and
3. prohibited goods.

Bicycles and components normally fall into category 2. However, the issue of import licences for bicycles and components, as well as many other products, has been temporarily suspended since 1983, in accordance with CACEX Resolutions which are generally issued once a year.

Effective domestic demand for bicycles rose substantially during the two decades to 1980. Domestic sales peaked in that year at about 2.6 million units. Since then, effective demand has steadily fallen owing mainly to the adverse economic and financial conditions affecting a large proportion of potential buyers.

The current market situation, however, cannot be considered indicative of a definite downward trend. In fact, Brazilian bicycle manufacturers are confident that the domestic market will expand substantially in the years to come. The leading producers are planning or implementing a series of promotional measures in order to boost demand. Government authorities have also taken steps to encourage the use of bicycles. Of particular importance is the study Cycle Path Planning - A Policy for Bicycles, which is being employed by State and municipal governments in their attempts to develop an infrastructure for bicycle users.

It is important to note here, however, that Brazilian demand for bicycles and most bicycle components has been, and is most likely to continue to be, satisfied almost entirely from domestic sources. Imports have so far been limited to a small volume of certain bicycle components. Domestic production of some of these components, envisaged in the near future, will reduce demand for imports even further.

It therefore seems reasonable to conclude that, even in the long term, Brazil should be considered by other countries only as a potential supplier of bicycles and components. Up to 2004, it exported a large proportion of its yearly output of bicycles. The dramatic decline in exports since then has been mainly due, not to production problems, but to the current economic difficulties of its major markets, most of them in Latin America. One

could, therefore, expect it to diversify its export markets, and the latest export statistics already provide some indication of such diversification. While it may be argued that Brazil's huge potential domestic demand could restrict its short- or medium-term chances of developing into a major competitor on the world market, considerable production capacity is apparently currently idle and could be utilized for export production.

Developing countries could also consider Brazil as a potential partner for initiating or increasing their domestic production of bicycles and components. Monark, for example, has recently set up a joint venture in Colombia.

### **3.4. STATEMENT OF GENERAL SECRETARY KCMA**

In this connection when Abdul Salam, General Secretary, Karachi Cycles Market Association, approached to shed light on present condition of the industry, Thursday told that price of indigenous bicycles is much higher than those available in international market due to which the country is unable to float its products in that market. "Pakistani made cycles are four fold expensive than imported cycles and are uncompetitive that is why no exporter so far has thought about the export from the country", he noted. Pakistan manufacturers are also encountered with problems including high cost of inputs, shortage and non-consistent availability of electricity and lack of modern technology, he added. He urged the government to take serious measures to promote the bicycles industry in the country which would ultimately help in reducing growing menace of pollution and will provide cheapest means of transportation to lower segment of the society.

#### **3.4.1 THREATS FOR THE BUSINESS**

- Entrepreneur with non-engineering background, because of which engineering standards not adhered to.

- Lack of orders, once production has started.
- Untrained labors left unsupervised and not trained by the entrepreneur.

### **3.5 MAJOR PROBLEMS OF PAKISTAN'S BICYCLE INDUSTRY**

Pakistan's bicycle industry is facing so many problems as discussed in the second chapter, few of them, which are major ones are discussed below:

#### **1. RESEARCH DEVELOPMENT**

There is very low R& D expenditure in the industry, which has resulted in poor assessment of the world market and poor designing of bicycles for exports. The world is turning towards fancy bicycles whereas in Pakistan, standard bicycles are manufactured whose demand, worldwide, is shrinking. Fancy bicycles constitute a very meager portion of the bicycle output in Pakistan. Only two major producers, manufacture fancy bicycles in Pakistan, i.e. Sohrab and Eagle.

#### **2. INTERNATIONAL DESIGN & QUALITY**

Low weight bicycles preferred internationally. In Pakistan, the shift towards low weight is very slow. The Pakistani standard bicycle weighs between 25-26 kg whereas our regional competitors are producing 15-kg bicycles (like Taiwan). India and China are producing 20-21 kg bicycles. This has led to reduction in the cost of the competitors' bicycles. Only Sohrab meets the weight requirements and roadster bicycles are produced according to the British Standards. (BS)

### **3. SPECIALIZATION**

The vendor industry is not developed. It needs the active support of the major manufacturers. Mainly, the big manufacturers dominate the market. This is hurting the local industry, since lack of costing results in high unit cost, the margin between the local and smuggled bicycle is reduced and people prefer to buy smuggled bicycles due to better quality and low price differentials.

### **4. THE DOMESTIC MARKET**

There is little healthy competition in the local market although prices of the local products are not controlled. A small number of major manufacturers dominate the market. This is hurting the local industry, since lack of costing results in high unit cost, the margin between the local and smuggled bicycle is reduced and people prefer to buy smuggled bicycles due to better quality and low price differentials.

### **5. INSTITUTIONAL INFRASTRUCTURE**

The association of bicycle manufacturers is inactive. This has led to lack of coordination between the manufacturers themselves on the one hand and on the other, the manufacturers cannot effectively coordinate with government agencies. The industry lacks resources for developing international marketing initiatives. The international marketing activities are not organized which leads to low exports, inefficient handling of orders, no proper follow-up of the orders (resulting in minimum repeat orders), and ineffective feed back from the customers.

#### **3.5.1 OTHER PROBLEMS**

. Few problems faced by the manufacturers are:

- Poor assessment of the world market and poor designing of bicycles for exports.

- Manufacturers more involved in manufacturing standard bicycles as compared to the fancy bicycles, as the demand for the standard bicycles is shrinking.
- Smuggled bicycles coming mainly from China have taken up the large domestic market for bicycles of Pakistan.
- The untapped export market for bicycle due to lack of export-oriented approach, among most of the manufacturers, for future survival.
- Problems due to the Regulations of State Bank of Pakistan and Central Board of Revenue for the exporters.
- Entry barriers for the new entrants into this sector

## CHAPTER # 4

### “RESULTS OF INVESTIGATIONS”

Bicycle is still considered as “traditional mode of transportation” due to its easy handling. Keeping in view the increasing demand of bicycles, the global industry has focused on production of new models of two wheelers and specialized in mountain bikes, all terrain bikes, tricycles, BMX, electric bicycle and recumbent bicycles. Lack of skilled manpower and coordination between different segment of manufacturing sectors and technological imbalances have also contributed to the deprivation to country of valuable share of huge foreign exchange. A recent study, one of the first studies conducted in this sector, indicates that the size of world bicycle products market is estimated around \$3b annually and the demand is growing at rate of 4 percent per year.

The demand for standard bicycles is shrinking due to change in taste and availability of improved designs of fancy bicycles segment. Mountain and terrain bikes, BMX, electric bicycle and recumbent bicycles are getting much popularity among the young people and children around the world. The bicycles market experienced slumps during 1997 worldwide mainly due to low level of demand in the major countries’ like Germany, Japan, Hong Kong and France.

In Pakistan only two Lahore based bicycle manufacturers make “Sohrab” and “Eagle” brands as their combine production is merely 0.590 million units per year whereas one production unit is not operational; while another few brands are being manufactured by some vendors and assemblers which are on sale in the domestic market. The market of cycles is scattered all over Pakistan with minimum coordination between producers and sellers, which limits the designing and failed to gauge the market size.

The major findings of this study can be summarized as follows:

## **1. Production**

- World production is strongly concentrated in 13 countries/areas whose share in the world total was 91%.
- Production stagnated in developed countries, steadily increased in developing countries/areas and rose sharply in countries with centrally planned economies. The growth in the last-named-group was due almost exclusively to the upswing in production in China.
- Production is strongly concentrated in terms of geographical areas. The regional figures were: Asia 60%, Europe 25%, America 12%, Africa 2% and Australasia 1%.
- A comparatively small number of companies dominate world production of bicycles and components. A few of these play a key role in the world-wide dissemination and transfer of technology, particularly through joint ventures or licensing agreements. Among developing countries, India is a leader in this type of technology transfer.
- In most developing countries/areas, domestic production has so far been directed mainly towards meeting the requirements of the middle and upper-income population groups.
- Research and product development activities are carried out largely in developed countries. A few countries with developing market and centrally planned economies also undertake these activities to a limited extent.
- A few organizations in developed countries are carrying out research into a type/model of bicycle that would be more appropriate to the needs of developing countries and that would be within the reach of a

large number of low-income earners. No indication could be obtained that such research is being undertaken elsewhere.

- A few countries, notably India, favour the adoption of small-scale and labour-intensive production techniques in the development of their bicycle and components industry. Most other developing countries are partial to production techniques that are more capital intensive.
- Many developing countries have implemented highly protective measures to develop fully integrated domestic bicycle and components industries despite restricted domestic demand. Further research is needed to ascertain whether this protectionism has in fact led to the current high levels of idle capacity and has made final products too costly for international markets. An appropriate strategy should then be recommended. The findings of this pilot survey indicate that this strategy could favor production only of certain types of components and the procurement of the other components from more competitive foreign suppliers.
- In some developing countries bicycle assembly is undertaken by small companies and even by retail shops. In some cases, assembly is rudimentary and the end-product is below standard. The frequent after-sales repairs and adjustments required tend to foster a poor image for bicycles among potential users.

## **2. International trade**

- International trade averaged about \$US 2 billion yearly during the period reviewed. It is strongly dominated by developed market economies which had a share of about 77% in world imports and about 83%, in world exports.

- World trade, both import and export, is roughly structured as follows: 70% components and 30% bicycles.
- The structures of the import trade of all countries considered are similar: all import more components than bicycles.
- The structures of the export trade in these countries differ markedly: developed market economies export more components; the other two groups export more bicycles. Developed market economies trade mainly among themselves.
- Trade among developing market economies is rather small in both absolute and relative terms. With a few exceptions, notably India, most of their limited exports go to developed market economies, which are also their principal suppliers.
- Two suppliers dominate the export trade of developing market economies. Their share in the group's total exports during the period reviewed averaged as follows: about 65% for Taiwan Province (China) and about 20% for India.
- Japan is by far the leading exporter among developed market economies: 53% of the group's total exports in 2004 as compared with about 38% in 1999.
- Taiwan Province (China) exports mainly to developed market economies while India directs its exports almost exclusively to other developing market economies.
- Trade among developing market economies is hampered by their high degree of market protectionism. This might explain their lack of cost competitiveness, their principal obstacle to success in the export trade.

### **3. Market characteristics**

- Contrary to expectations, bicycle ownership is markedly higher in developed than in developing countries.
- Among developing countries, ownership level is substantially higher in Asia (up to 400 bicycles per 1,000 inhabitants) than in Latin America (up to 160). The ownership level in Africa is extremely low (up to 35 per 1,000 inhabitants).
- In developing countries most bicycles are purchased by people in the middle and upper-income groups. For those in the low-income groups the bicycle is still too expensive.
- In developing countries the bicycle is used predominantly as a means of transport; its market potential in the rural areas remains largely untapped.
- Developing country markets for bicycles is a long way from being saturated, with new demand far exceeding replacement demand. The opposite is true of developed market economies.
- In many developed countries the bicycle is increasingly being promoted by governments and by producers' associations as an important transport means. Particular attention is being given to the development of an adequate infrastructure for its utilization.
- In contrast, not many government authorities in developing countries promote the use of bicycles for transport and the establishment of an adequate infrastructure for its utilization. Furthermore, in most of these countries, government support of activities promoting bicycles is either inexistent or inadequate.
- In most developed countries the use of bicycles for leisure predominates. Such use remains limited in developing market

economies and is mainly the preserve of the more affluent segments of their populations

#### **4.1 FINDINGS BY INTERVIEWS**

Through an interview conducted it is found that most of the wholesalers are having the foreign brands in their shops as it constitutes major portion of their sales

##### *Major world bicycle producers, 2004*

Location	Name of company	Output (in units)
China	Tianjin	4,000,000
United States	Murray, Ohio	2,400,000
United States	Huffy	2,000,000
Japan	Bridgestone	1,420,000
Brazil	Monark	1,100,000
United Kingdom	TI Raleigh	1,027,000
India	Atlas	1,000,000
India	Hero	1,000,000
India	Avon	1,000,000
Brazil	Caloi	1500,000
United States	AMF	800,000 (1988)
Germany, Fed. Rep.	Kynast	800,000
Germany, Fed. Rep.	Kalkhoff	800,000
Taiwan Province (China)	Giant	750,000
India	TI Cycles	750,000

United States	Schwinn	700,000
United States	Columbia	700,000 (1998)
Japan	Miyata	700,000
France	Peugeot	636,000
Spain	Bestegui	500,000
France	Motobecane	459,000
Germany, Fed. Rep.	Heidemann	400,000
Italy	Rizzato	400,000
Taiwan Province (China)	Hodeka	900,000

*Sources:* Various bicycle manufacturers' associations, the specialized press, annual company reports, and other trade sources

#### **4.2. Some differences between developing and developed countries**

Unlike developing market economies in general, most developed market economies have well-established basic industries which could supply bicycle and components manufacturers with most of their requirements. They do not always do this however, because bicycle manufacturers are free to procure more cost competitive products from elsewhere. The Opposite happens as regards manufacturers in developing countries who are generally compelled to use domestic products.

Substantial research and product development is carried out by bicycle and components industries in developed market economies, although the basic design of the bicycle has not changed much over recent decades. The need for research springs largely from the fact that bicycle ownership levels in these economies are generally extremely high, creating a far larger replacement demand than new demand. Bicycle manufacturers must therefore develop new models in order to exploit all possible market niches and maintain total demand at its high level.

In contrast, little research is undertaken in developing countries where manufacturers tend to rely on foreign technology. Moreover, in these countries new demand exceeds replacement demand and manufacturers content themselves mainly with imitating internationally available models.

Because of keen market competition, bicycle manufacturers in developed market economies tend to concentrate on producing components in which they can be cost competitive. They procure the other components, generally the more sophisticated ones, from companies specializing in their production. These specialists utilize sophisticated production techniques which are rendered economically viable by their scale of operations. Such a scale is made feasible by the existence not only of large domestic demand but also of substantial demand in other developed countries. Most developed market economies have a high degree of economic integration which is reflected in the favorable market access conditions for each other's products. In contrast developing countries tend to close their markets to international competition by protectionist measures.

The above explains why the bicycle trade among developed market economies is much smaller than trade in components. It also explains why most of world's largest producers of components are found in these economies (e.g. Japan, Italy, France and the Federal Republic of Germany) and why the great bulk of world trade in components is carried out among them.

Few problems faced by the manufacturers are:

- Poor assessment of the world market and poor designing of bicycles for exports.
- Manufacturers more involved in manufacturing standard bicycles as compared to the fancy bicycles, as the demand for the standard bicycles is shrinking.
- Smuggled bicycles coming mainly from China have taken up the large domestic market for bicycles of Pakistan.
- The untapped export market for bicycle due to lack of export-oriented approach, among most of the manufacturers, for future survival.

- Problems due to the Regulations of State Bank of Pakistan and Central Board of Revenue for the exporters.
- Entry barriers for the new entrants into this sector

It is also found that Pakistani bicycle manufacturers have lost 25% of local bicycle markets to low priced Chinese bicycles. Thousands of Chinese bicycles are brought into Pakistan under the umbrella of Afghan Transit Trade every month, **which is smuggling!** Annual sale of Pakistani bicycles is around 700,000 to 800,000, but these figures are continuously declining due to the inflow of Chinese bicycles. Local bicycle manufacturers are facing hard time especially in the provinces of Balochistan and NWFP as these markets are flooded with smuggled Chinese bicycles

### **4.3 PROBLEMS FACED BY PAKISTAN'S BICYCLE INDUSTRY**

Pakistan's bicycle industry is facing so many problems as discussed in the second chapter, few of them, which are major ones are discussed below:

#### **1. RESEARCH DEVELOPMENT**

There is very low R& D expenditure in the industry, which has resulted in poor assessment of the world market and poor designing of bicycles for exports. The world is turning towards fancy bicycles whereas in Pakistan, standard bicycles are manufactured whose demand, worldwide, is shrinking. Fancy bicycles constitute a very meager portion of the bicycle output in Pakistan. Only two major producers, manufacture fancy bicycles in Pakistan, i.e. Sohrab and Eagle.

#### **2. INTERNATIONAL DESIGN & QUALITY**

Low weight bicycles preferred internationally. In Pakistan, the shift towards low weight is very slow. The Pakistani standard bicycle weighs between 25-26 kg whereas our

regional competitors are producing 15-kg bicycles (like Taiwan). India and China are producing 20-21 kg bicycles. This has led to reduction in the cost of the competitors' bicycles. Only Sohrab meets the weight requirements and roadster bicycles are produced according to the British Standards. (BS)

### **3. SPECIALIZATION**

The vendor industry is not developed. It needs the active support of the major manufacturers. Mainly, the big manufacturers dominate the market. This is hurting the local industry, since lack of costing results in high unit cost, the margin between the local and smuggled bicycle is reduced and people prefer to buy smuggled bicycles due to better quality and low price differentials.

### **4. THE DOMESTIC MARKET**

There is little healthy competition in the local market although prices of the local products are not controlled. A small number of major manufacturers dominate the market. This is hurting the local industry, since lack of costing results in high unit cost, the margin between the local and smuggled bicycle is reduced and people prefer to buy smuggled bicycles due to better quality and low price differentials.

### **5. INSTITUTIONAL INFRASTRUCTURE**

The association of bicycle manufacturers is inactive. This has led to lack of coordination between the manufacturers themselves on the one hand and on the other, the manufacturers cannot effectively coordinate with government agencies. The industry lacks resources for developing international marketing initiatives. The international marketing activities are not organized which leads to low exports, inefficient handling of

orders, no proper follow-up of the orders (resulting in minimum repeat orders), and ineffective feed back from the customers.

. Few problems faced by the manufacturers are:

- Poor assessment of the world market and poor designing of bicycles for exports.
- Manufacturers more involved in manufacturing standard bicycles as compared to the fancy bicycles, as the demand for the standard bicycles is shrinking.
- Smuggled bicycles coming mainly from China have taken up the large domestic market for bicycles of Pakistan.
- The untapped export market for bicycle due to lack of export-oriented approach, among most of the manufacturers, for future survival.
- Problems due to the Regulations of State Bank of Pakistan and Central Board of Revenue for the exporters.
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## **4.4 COSTING ANALYSIS**

### **a) Reduction through increased capacity**

If the production capacity is increased from 66% to 95% of the overall installed capacity, the fixed cost, which constitutes up to 25% of the production, will also fall. This will reduce the cost of the finished product by approximately 8%.

### **b) Reducing weight and wastage**

Reducing the weight and wastage of steel used in the manufacturing of the bicycle would also reduce cost of the finished product. A working is provided hereunder:

Average weight of Pakistan bicycle	24 kg
Standard international weight ( India bicycle)	21kg
Difference	3kg
Retail price of steel	Rs. 51 per kg
<b>SAVING 3x31</b>	<b>Rs. 153 per unit</b>

Steel rejection rate is 15% when steel is purchased from Pakistan Steel Mills. This is excessive. A brief analysis of the input cost is given hereunder: -

Steel purchased for bicycle	48 kg
Wastage @ 15% (REJECTION)	4 kg
Used in manufacturing of one unit	24 kg
Extra cost for wastage 4kg x rs. 48	Rs. 192 per unit
Sales price of 4kg scrap @ Rs. 48	Rs. 50 per unit
<b>Excess cost of wastage (Rs. 124 – Rs. 40)</b>	<b>Rs. 142 per unit</b>

If the steel is available at international prices and if the Indian steel prices are taken as benchmark, cost savings are provided as under: -

Retail price of steel in Pakistan	Rs. 51 per kg
Indian steel price	Rs. 31 per kg
Price difference	Rs.20 per kg
<b>Excess cost incurred Rs. 20 x 24 kg (bicycle weight)</b>	<b>Rs. 480 per unit</b>

### **c) Reducing cost through effective vendorization**

Effective vendorization would reduce cost of the bicycle by at least 2%.

- **Cost for exports**

For export costing, if the capacity is increased from its present level, the fixed cost would not rise with the increased production levels. Hence export cost would be reduced by the fixed cost portion, which constitutes upto 25% of the overall production of a single unit. This will result in competitive cost quotation in the international markets.

**d) Electroplating cost**

Electroplating process constitutes approximately 13% of the total manufacturing cost of the bicycle. It is dependent upon uninterrupted power supply. Indian manufacturing process involves horizontal plating plants whereas in Pakistan, vertical plating plants are being used. This process consumes more electricity and hence the cost of production is increased. Sohrab is using both technologies. Using horizontal plating plants would reduce the power consumption cost on the one hand and on the other the capacity would increase thus reducing the overall cost of production and time in the manufacturing of one single unit.

**e) Electrostatic painting process**

Electrostatic painting process reduces the wastage level upto 5%. Currently, except Sohrab, the other five major manufacturers are using manual spray gun for the painting of bicycles. This results in wastage level of 30-40% of the paints. Using electrostatic painting would reduce the wastage cost and the overall cost of production would also be reduced.

Taking into account all the above cost and savings, the overall cost of the product without additional support or subsidy can be lowered significantly. However the policy regarding import of steel and duty structure on the steel imports needs to be closely looked into by

the government in order to facilitate not only the bicycle industry but other indigenous industry mostly dependent on steel as a major input for the manufacturing.

## CHAPTER # 5

# “FINDINGS, CONCLUSION, & RECOMMENDATIONS”

## 5.1 SUMMARY OF THE FINDINGS

- It will be difficult for new entrants into the bicycle segment unless they specialize in the fancy bicycle sector with an emphasis towards higher end bicycle and an export driven approach, preferably in a Joint Venture with a Taiwanese company.
- Although there exists a large domestic market for bicycles but that has been taken by smuggled bicycles coming mainly from China. The local production can increase by 50% if smuggling is checked.
- The export market for bicycle remains untapped due to the high price of raw material inputs which makes Pakistani bicycles expensive than their competitors and these can only come down if the raw material inputs are at the international levels.
- Regulations of State Bank of Pakistan and Central Board of Revenue makes exporters wary of exporting to developing countries with a high default factor. A change and shift towards the developing countries can increase exports of this nontraditional item.
- Sohrab monopolizes the local bicycle market and they are the only manufacturer who sells their product on advance payment while the rest of the industry has to sell its product on credit basis. They have to adopt an export-oriented approach for future survival.
- Overall the market scenario is going to change after 2005 when free imports and exports will be allowed. It seems that if Indian bicycles are imported, they will wipe out the Pakistani bicycle manufacturers with their low price.

## **5.2. CONCLUSION**

The simplest and traditional means of transport is the human head. Loads are carried on it which the carrier cannot lift up himself, weighing 35 kg to 40 kg. These are then carried over a period of several hours to the local market for example. Technical devices which have been adapted to avoid this strenuous work include special frames, which make carrying easier, carts drawn by animals, and bicycles equipped with special devices for transporting loads.

This applies to the transport of loads in rural areas, and the same can be said of the transport of passengers in the towns. Where there is no local transport system operating on the basis of a public mass means of transport, and this is the case in almost all developing countries, the bicycle is a cheap, simple and quite fast means of transport, provided that the area is geographically suitable for bicycles with no steep hills.

Looking at the statistics for the number of bicycles and the production figures for bicycles in quite different countries it is noticeable that the number of bicycles is at its highest in the industrialized countries; where relatively few people ride bicycles and most people drive motor cars. It is also apparent that most developing countries (at least in Africa) are forced to import bicycles, as they do not have any bicycle factories of their own. The bicycle factory in Dar es Salaam, Tanzania, for example, which was opened in 1978, can only produce 60% of the components required. It is also noticeable that there are just as many motor cars as bicycles in the world, and that the rate of growth in bicycle production in the developing countries is very high, while production in the industrialized countries is stagnating.

If one looks at the prices of bicycles in developing countries, it is apparent that, although the prices appear to be very low, the bicycle is a valuable article, which only people who have managed to save some money can afford to buy. In India cost between \$ 24 and \$ 35, while the average annual per capita income was only \$ 100, that is three times as much. Tricycles, or rickshaws, which are used to earn a living, cost between \$ 100 and \$

200, which means that the majority of rickshaws do not belong to their drivers, but instead are rented out. In Tanzania the situation is similar. In Swala bicycle, which is manufactured there, cost 23 pounds, while the annual per capita income amounted to 75 pounds.

While most bicycles, as already mentioned, are made in large factories or abroad, in Asia the rickshaw, or the transport tricycle, is usually manufactured by small or medium-sized firms and workshops, which buy standard parts from the large firms and make all kinds of special models to suit different purposes. In addition to this, bicycles guarantee the existence of a large source of employment, the mobile cycle workshops, which owe their existence to the fact that the majority of cyclists are unable to service their vehicles themselves and are dependent on the services of a repair shop.

The bicycles which are made in China and India, and which are to be found in a similar form in many developing countries, are the equivalent of man's roadster bicycle, like the ones manufactured in England after about 1905. Apart from minor changes in the material of the frame, in the paint, chroming and to the saddle practically no changes have been made: wheels and tyres 28 x 1 1/2", stirrup brakes, Westwood rims, free-wheel coaster-hub without brake, development approx. 5.5 m (i.e. the distance traveled per crank revolution), heavy weight of over 20 kg. It is worthy of note that due to the design of the frame (diamond-frame with horizontal top tube) it is impossible for the majority of women in the Third World to ride a bicycle, unless they disregard the conventional dress norms of their society.

Attaching larger and bulkier loads to the normal, narrow carrier poses great problems, although the stability of the bicycle would allow a load of approx. 100 kg to be carried in addition to the weight of the cyclist. On a bicycle which is not carrying a load a speed of approx. 9 km/h to 14 km/h can be reached with ease on dirt roads in the plain. On bad dirt roads with a slight gradient of up to 2.5% the cyclist will make an effort and pedal on. But on gradients of 5% over a longer distance a normal bicycle will have to be pushed. On a good dirt road in the plain a maximum load of 70 kg can be transported on a bicycle without excessive effort. But on a slope with a gradient of more than only 2.5% a cyclist will have to get off a loaded bicycle. On a slope with this gradient an additional load of

up to 250 kg can still be pushed. On a gradient of 5% and on good dirt roads an additional load of up to 150 kg could probably still be pushed without additional effort. Considerable effort is required to push a loaded bicycle up a slope with a gradient of 10%. A load of 250 kg could be pushed up a slope like this with an enormous amount of effort, but only at a snail's pace and with many pauses.

One of the reasons why people have to get off and push their bicycles at such an early stage, and that so little can be transported while actually riding the bicycle is that the gearing ratio is much too high for the rural areas in the Third World. Instead of the 5.5 m which are customary at present, a development of about 3 m would be ideal. This could be achieved, if for example, a chain wheel with 28 teeth were used, instead of the large one which usually has 48 teeth, or if the bicycle had an adequate gear-change mechanism.

What has been said about the loading capacity of a bicycle also applies to bicycles with trailers, except that the weight of the trailer itself (usually 20 kg to 30 kg) must be subtracted from the weight of the load the bicycle can carry. As hardly more than an additional 70 kg can be transported on level, dirt roads while riding a bicycle, this means that using the same output of energy, an additional load of less than 45 kg only could be transported in a trailer. This is without taking the higher; rolling resistance of a trailer into account, caused by the fact smaller wheel of the trailer and the three tracks a bicycle with a trailer produces.

Tricycles are quite common in Asia, but they are only found in the towns, where they are used for transporting goods and passengers. The technical knowledge required for manufacturing them is generally beyond the scope of a rural workshop.

The version with two front wheels is not suitable for unsurfaced roads, since this kind of road requires too much steering power. The driving performance of tricycles with sidecars would not be good on dirt roads the most suitable design is probably the tricycle with the loading surface at the back and two rear wheels. This type of tricycle is driven by an axle on one side or by a through axle, depending on the region; differentials are seldom found. The gearing ratio is usually only slightly smaller than on an ordinary bicycle. In China tricycles with a gear change mechanism are occasionally found. They

have two chain wheels at the bottom-bracket. The chain sits very loosely and a small guiding wheel just in front of the-rear sprocket prevents it from springing off. The gear is changed by moving the chain from one chain wheel to the other by hand.

Vehicles like this are of no use to the farmer in a rural district, since as already mentioned above when describing the bicycles in the Third World, they can only carry a very small additional load on dirt roads, because they have a similar ratio. Tricycles can be ridden at a very low speed, but extremely slow pedaling is very tiring and ineffective. Also tricycles cannot be ridden on footpaths.

In rural areas on dirt roads tricycles as a means of transport only make sense if the gearing ratio is radically changed (development of less than 2 m or even better a suitable gear-change mechanism) and they are built more robustly. The standard tricycle can be used on surfaced roads in fairly flat countryside. Here they could complement or partly replace buses, Lorries and community taxis.

A bicycle adapted for use in developing countries must meet certain requirements

In view of the small load that a normal bicycle can carry, special models built for transport can only be of real use if the gearing ratio is considerably smaller (i. e. a development of approx. 3 m). At the same time the railing resistance must not be increased by smaller wheels with a development of 3 m the slowest possible speed is approx. 6 km/h This means that on good dirt roads in the plain a load weighing about 140 kg can be transported on a bicycle, but pedaling a bicycle with a load up a slope with a gradient as low as 2.5% would demand an effort from the cyclist, which he could not maintain over a long period of time.

A gradient of 2.5%, however, is no problem if the bicycle is not carrying a load. and in the plain a constant speed of 14 km/h can still be pedaled. A transport bicycle for the Third World would need a maximum load capacity of 150 kg.

It would be a good idea to develop bicycle more appropriate to the needs of the Third World. The ideal design should take the following points into consideration:

- the transport of loads weighing up to 150 kg; good possibilities for attaching loads

- equally suitable for men and women
- safe accommodation for children and babies
- large wheels with an improved connection between hub, spokes and rim, or possibly sandwich structure
- a development of 3 m, or a suitable gear-change mechanism
- manufactured locally (possibly sheet metal frame)
- as few imported parts as possible
- extremely robust
- maintenance-free
- resistant to dirt, sand, rust and potholes
- the cyclist should be able to carry out servicing and repairs himself
- the price should not be higher than that of the present bicycles.

Effective demand for bicycles and components is known to be larger in developed countries, taken as a whole, than in other countries. Demand for these products is, however, commonly perceived as potentially greater in developing countries, again taken as a group, than in developed countries. These springs from the following well-known facts: the bicycle is the cheapest to buy and to maintain among existing transport vehicles; the number of vehicles per person is much smaller in developing countries; and about 75% of the world population lives in these countries. However, while a vast amount of information has been compiled on the developed markets for bicycles and components, comparatively little exists on developing country markets, and in particular on inter-developing-country trade in these products

## **5.3 SUGGESTIONS FOR THE IMPROVEMENT OF BICYCLE SECTOR**

Few suggestions for the betterment of this sector are listed below:

1. The major manufacturers should expand R & D expenditure which will result in better designing, and lowering cost, and help in assessment of the actual needs of the buyers.
  
2. Low weight bicycles should be produced. Technology for the production of better quality and low cost product needs to be acquired.
  
3. Costing concept needs to be followed. Since there is a demand to 1.138 million bicycles in the local market and the local manufacturers meet only 60% of the demand through 66% production capacity utilization, there is room for the local bicycle industry to flourish. **(Refer to page # 37 for cost analysis)**

If a low cost initiative is taken into consideration through effecti~evendorization, specialization, and research & development, both local and foreign markets can be effectively tapped. The production utilization rates can be enhanced to 95% through providing improved technology, checking smuggled bicycles, initiating low weight and high design products. Production levels can reach 0.95 million units per annum.

### **5.3.1 Other Recommendations**

An association of bicycle manufacturers should be activated in order to build up a strong coordination between the manufacturers and vendors of the industry. The association would also effectively take up matters relating to the financial, regulatory and promotional issues with the related government departments.

- Proper training schemes for skilled, semi-skilled and management personnel of the industry needs to be designed and implemented.
- For proper handling of the international markets, the industry needs to develop efficient liaison with the importers/customers in the foreign markets. This can be effective
- through management of international supply chains and establishing liaison offices in the most important regions like Africa (containing potential markets like Kenya, Uganda, Mozambique, and Nigeria etc.) and Europe. This will also help in developing an effective feed back system for markets, customers, technology, trends and patterns.
- U.K is a major market for fancy bicycles. It is an attractive market for Pakistani fancy bicycles (presently produced by Sohrab only) which are close to the demand and quality produced in the E. U markets. The cost structure of the Pakistani bicycle makes it non- competitive however, efficient costing, vendorization, specialization, HR Development, and freight subsidy could make the cost competitive.
- The major manufacturers should establish international marketing budgets for their international marketing activities.
- Participation in international bicycle exhibitions will enable manufacturers to see world trends in the bicycle industry and conceive ideas. This will also facilitate entry into joint ventures and export agreements with parties abroad.
- Kenya, being a major potential market for Pakistani bicycles needs to be properly developed.

There is no doubt that a very close link exists between the availability of transport facilities and a country's level of socio-economic development. It is not by chance that developed countries have large transport networks, well- developed public transportation Systems, and high-vehicle-ownership levels. Without mass mobility many activities, whether economic or cultural, become difficult, sometimes impossible. This is particularly true of developing countries as a whole, where walking remains the predominant mode of transport.

Although it is clear that much has already been done by national and international organizations to improve the world's general transport situation, the transport gap between developed and developing countries remains enormous. Alternative responses must therefore be found, at least in the short term, to the urgent transport needs of the developing world. Increasing the emphasis on motorized transport should not be among these alternatives. As many studies indicate, motorization benefits only a small segment of the populations in developing countries.

Much greater emphasis should therefore be given by national and international organizations to furthering the utilization of low-cost transport means. Among these means, the bicycle is the cheapest to buy and to maintain. The role it already plays in the socio-economic development of certain countries, both developed and developing, cannot be denied. However, in many developing countries those responsible for transport planning give much higher priority to motorized transport and limited attention or none at all to bicycles.

To increase the utilization of bicycles in developing countries it is recommended that:

- Greater emphasis should be given to the development of the infrastructure for the utilization of bicycles, both in the rural and in the urban areas. Such an infrastructure could be developed along the lines being followed in many developed countries, but it should be adapted to the specific environmental needs of the developing world.

- The appropriate financing institutions, national international, should give greater priority to the development of the infrastructure needed for substantially increasing the utilization of bicycles and other low-cost transport means.
- Government authorities should strongly support all activities promoting the use of bicycles.
- Particular attention should be given to the development of a bicycle that would be more appropriate, in its quality and other aspects, to developing countries and that would be within the reach of a much larger segment of their populations.
- Resources should be made available for depth research to ascertain the right balance for developing countries between labour- and capital-intensive bicycle production techniques.
- The role of the relevant international organizations should be strengthened so as to enable them to provide greater assistance to developing countries in expanding or improving their bicycle and components industry.
- Measures should be taken by national and international organizations to increase co-operation between the developed and other economies in training and other means of disseminating the management and marketing techniques required for producing and exporting bicycles and components.
- The government organizations concerned should create or enforce quality-control measures not only for specific components but also for complete bicycles, in particular those delivered by bicycle-assembling companies.
- Sub regional and regional trade and industrial associations should be created. These associations should seek to foster co-operation and the exchange of experiences among bicycle business communities in developing countries. They should also pave the way for the elaboration of agreements aiming at increasing utilization of existing bicycle production capabilities in each country.

- Resources should be made available for in-depth research to determine whether the current high degree of market protectionism in most developing countries is of real benefit to domestic bicycle and components industries and the final consumers

Certain other recommendations are as follows:

- The commercial viability of this venture depends upon the availability of skilled labor having an acquaintance with the engineering line.
- Another important aspect is the quality check at different stages of production. Cost cutting methods and correct raw material have to be employed. Ability to give 90 days credit to the market and replacing service claims freely till one year will be the major service issue.
- As designing variety of carriers will be an added advantage, Bicycle Carrier Manufacturing Unit should have flexibility for switching to different types of bicycle carriers, if demanded by the market.
- Getting a brand name for the product is necessary, along with volume orders from a local bicycle assembler. To establish a brand name, aggressive marketing efforts are required. High volume orders from a local bicycle assembler at initial stage and ability to enter the export market will be the key to survival.





**Muhammad Khalid Godil**

## **INTRODUCTION**

I am Karachi born. I studied up to intermediate level. My father, who has been doing business in Hyderabad, is now enjoying a retired life. My brother is looking after his business in Hyderabad. God has blessed me with a son and a daughter. My both children are studying. I am a religious minded person but not a conservative person.

### **Q.1. How did you come into this field?**

#### **ANS:**

After completing my intermediate level from Hyderabad I came to Karachi and started selling cycles, especially cycles for children. I am doing this business for last 26 years. I have learnt a lot about this business from my father. It is our family tradition to do some business.

### **Q.2. How has your business grown over the years?**

#### **ANS:**

I am wholesaler and deal in all local brands of children bicycles, tricycles and two wheeler helper cycles. There are not many traders in this business. The most important factor in progress of my business is that I offer quality products at reasonable rates. I give

specifications to the bicycle manufacturers to produce bicycles according to the needs of my clients. Cycle accessories like horns, chains, hubs, saddles, heavy-duty seats and fore front fitting manifest the quality I offer to my clients. They are well aware of this quality. The colour of my tri cycles and helper two wheelers cycles is oven treated and long lasting. The demand of cycles goes up soon after announcement of the academic results of primary schools and kindergarten level. Elders fulfill demands of their kids for cycles.

**Q.3. What problems do you face as an entrepreneur?**

**ANS:**

Our main problem is double taxation on makers and wholesalers, apart from income tax and other taxes, which we pay regularly. It is a small industry and the local makers of these items are facing hardships. If they are given relief in taxation, they can bring down cost of their products and we can compete the market smuggled cycles. The government's policy for this sector is not business-friendly. Besides there is no facility of soft loans for entrepreneurs of this sector.

**Q.4. How many customers do you cater to per day?**

**ANS:**

My clients are loyal and they maintain their needs on regular basis. New clients and individual customers are always welcomed, as they are source to enhancement in my monthly income. I have employed to three persons.

**Q.5. How have demand patterns changed over the years?**

**ANS:**

Some 15 to 20 years back, children had no choice. Today the kid is choosy in all respects, especially in respect of color and accessories. He prefers better look and light body cycle. Another noticeable change is increase in demand for cycles with gear system. Today the

elders have also become more quality and price conscious.

**Q.6. What are your future plans?**

**ANS:**

I am content with the present set up. However, I am planning to expand the frontiers of my trade in order to generate jobs and increase my income. —Staff Report

**Q.6. Is really Pakistan's bicycle industry hurt by Chinese bicycles?**

**ANS:**

Pakistani bicycle manufacturers have lost 25% of local bicycle markets to low priced Chinese bicycles. Thousands of Chinese bicycles are brought into Pakistan under the umbrella of Afghan Transit Trade every month, **which is smuggling!** Annual sale of Pakistani bicycles is around 700,000 to 800,000, but these figures are continuously declining due to the inflow of Chinese bicycles. Local bicycle manufacturers are facing hard time especially in the provinces of Balochistan and NWFP as these markets are flooded with smuggled Chinese bicycles