CHAPTER 1
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1.1 HISTORICAL BACKGROUND

Through the ages women have used different forms of menstrual protection. Menstrual pads have been mentioned as early as the 10th century, [1] in the Suda, where Hypatia, who lived in the 4th century AD, was said to have thrown one of her used menstrual rags at an admirer in an attempt to turn him off. The Museum of Menstruation has articles and photos of some early forms of menstrual protection, including among other things knitted pads and menstrual aprons. Women often used strips of folded old cloth (rags) to catch their menstrual flow, which is why the term "on the rag" is used to refer to menstruation.

Disposable menstrual pads grew from Benjamin Franklin's invention designed to save soldiers with buckshot wounds, but appear to have been first commercially available from around 1888 with the Southall's pad. The first commercially available American disposable napkins were Lister's Towels created by Johnson & Johnson in 1896. Disposable pads had their start with nurses using their wood pulp bandages to catch their menstrual flow, creating a pad that was made from easily obtainable materials and inexpensive enough to throw away after use. Kotex’s first advertisement for products made with this wood pulp (Cell cotton) appeared in 1921. Several of the first disposable pad manufacturers were also manufacturers of bandages, which could give an indication of what these products were like.
Until disposable sanitary pads were created, cloth or reusable pads were widely used to collect menstrual blood. Women often used a variety of home-made menstrual pads which they crafted from various fabrics, leftover scraps, grass, or other absorbent materials, to collect menstrual blood. Many probably used nothing at all. Even after disposable pads were commercially available, for several years they were too expensive for many women to afford. When they could be afforded, women were allowed to place money in a box so that they would not have to speak to the clerk and take a box of Kotex pads from the counter themselves. It took several years for disposable menstrual pads to become commonplace. However, they are now used nearly exclusively in most of the industrialized world.

The first of the disposable pads were generally in the form of a cotton wool or similar fibrous rectangle covered with an absorbent liner. The liner ends were extended front and back so as to fit through loops in a special girdle or belt worn beneath undergarments. This design was notorious for slipping either forward or back of the intended position.

Later an adhesive strip was placed on the bottom of the pad for attachment to the saddle of the panties, and this became a favored method with women. The belted sanitary napkin quickly became unavailable after the mid-1980s.

The ergonomic design and materials used to make pads also changed through the 1980s to today. With earlier materials not being as absorbent and effective, and early pads being up to two centimeters thick, leaks were a major problem. Some variations introduced were quilting of the lining, adding "wings" and reducing the thickness of the pad by utilizing products such as sphagnum and polyacrylate superabsorbent gels derived from petroleum. The materials used to manufacture
most pads are derived from the petroleum industry and forestry. The absorbent core, made from chlorine bleached wood pulp, could be reduced to make slimmer products with the addition of polyacrylate gels which sucks up the liquid quickly and holds it in a suspension under pressure. The remaining materials are mostly derived from the petroleum industry; the cover stock used is polypropylene non woven, with the leak proof barrier made from polyethylene film.

Cloth menstrual pads made a comeback around the 1970s with their popularity increasing in the late 80s and early 90s. Reasons women choose to switch to cloth menstrual pads include comfort, savings over time, environmental impact and health reasons.

There are many styles of cloth menstrual pads available today. Popular styles of cloth menstrual pads include all-in-one, or AIO pads, in which the absorbent layer is sewn inside the pad, 'inserts on top' style pads, which have absorbent layers that can be secured on top of the pad as needed, envelope or pocket style pads, which have absorbent layers that can be inserted inside the pad as needed, and a foldable style, in which the pad folds around the absorbent layers. Cloth menstrual pads can have waterproof lining, which provides more leak protection but may also be less breathable.

In underdeveloped countries, reusable or makeshift pads are still used to collect menstrual blood. Rags, soil, and mud are also reportedly used for collecting menstrual flow.

1.2 CONDITION OF RURAL FEMALE HYGEINE IN INDIA[10]

India is a country with many cultures, diverse ethnicities and different sub sections of castes. It is also a nation of great financial divide. On one hand we have the
urban India which is progressing with each day and on the other we have the rural India where the living conditions are in a dismal state. With minimal electricity, scarcity of water, dependency on agriculture, an average rural Indian household fights for its daily needs. The condition of a rural female is even worse. They have to manage the household, work in the fields, take care of the children and when her menstrual cycle starts, all hell breaks loose. She is not allowed inside the kitchen or temple, is most of the times forced to sleep in the cowshed and is being treated as an outcaste for those 4-5 days. Add to this misery, she doesn’t even have a sanitary napkin to use which forces her to use unsterilized cloth and invite various reproductive tract infections. Most of the researches suggest that affordability is the major issue why rural females are not able to use sanitary napkins. But this raises a bigger question. Because of illiteracy rate and lack of availability, do these females even know about sanitary napkins? Though India is now considered to be a developing economy, there are many social taboos which surround the otherwise culturally “rich” country. Ignorance towards female hygiene is one of them. Not only males but females too of rural India still do not recognize or lay importance to the fact that poor sanitation habits may lead to devastating consequences.

Following were the results of a survey carried out by AC Nielson [9] and endorsed by NGO Plan India, following was observed:

- Of the 355 million menstruating women in India, only 12 per cent use sanitary napkins. The figure is abysmal, compared to countries like China, where majority of women use sanitary napkins, the survey maintained.
- About 68 per cent rural women cannot afford sanitary napkins available in the market.
• On the issue of affordability of quality sanitary care, the survey found that 81 per cent rural women use unsterilized cloths since they are cheaper and 68 per cent said they cannot afford to buy sanitary napkins.
• Poor financial condition does not allow majority of the women to buy quality sanitary napkins, the survey said, adding of cloth users, 45 per cent reuse cloth and 70 per cent dry them in shade, increasing chances of infections.
• According to gynecologists, use of alternative sanitary care measures such as unsterilized cloths, sand and ash make women susceptible to infections and diseases.
• The study found that awareness on basic health and feminine hygiene is very low, with 75 per cent rural women lacking adequate knowledge on menstrual hygiene and care.
• Adolescent girls in rural India are unable to attend up to 50 days of schooling in a year due to inadequate menstrual care, the report said.
• Research shows Reproductive Tract Infection was 70 per cent more common among those with unhygienic sanitary practices.
• Of the 355 million menstruating women in India, only 12 per cent use sanitary napkins. The figure is abysmal, compared to countries like China, where majority of women use sanitary napkins, the survey maintained.
• The survey said among the adolescent rural girls, 23 per cent (aged 12-18 years) discontinue studies due to inadequate sanitary facilities in schools.

The figures are shocking, but true and representative of the entire nation.

It is clear from the above data that the non-usage of sanitary napkins may lead to health hazards and sometimes death too.
1.3 POPULATION DISTRIBUTION OF INDIA

It is important to understand the population distribution of India so as to come up with a sustainable business model for manufacturing and distribution of sanitary napkins which not only benefits a particular region but the entire nation as well.\[^4\]

1.3.1 SALIENT POINTS:
- Rural – Urban distribution: 68.84% & 31.16%
- Level of urbanization increased from 27.81% in 2001 Census to 31.16% in 2011 Census
- The proportion of rural population declined from 72.19% to 68.84% in the year 2011

1.3.2 LITERACY RATES (IN %)[13]
- The improvement in literacy rate in rural area is two times that in urban areas.
- The rural urban literacy gap which was 21.2 percentage points in 2001, has come down to 16.1 percentage points in 2011. Improvement in female literacy is more than males in both rural and urban areas.
- Number of Rural Units (or Villages) in India:
  - Census 2001: 6,38,588
  - Census 2011: 6,40,867

Population by Rural Urban Residence – India-2011

Persons:
- Total: 1,210,193,422
- Rural: 833,087,662
- Urban: 377,105,760
1.4 WHY THIS RESEARCH IS IMPORTANT

MNC’S who are involved in the production of napkins also have their eyes set on the urban India. They have clarity on their target market and will not venture out to cater to the needs of rural India as the margins would significantly drop. Add to this, the ignorance of rural Indian females, it will be a daunting task for the mnc’s to convey them the idea of usage of napkins.

The above two points are more monetary in nature. The next point is more value oriented. It is about adolescent girls who are going to be the future of this nation. Menstruation is a subject which a girl discusses only with her mother and a rural Indian mother has been taught by her mother to use a piece of cloth and so on and so forth. So she passes on the same set of values to her daughter without giving it much thought as she thinks that her mother and herself have also been doing this since ages and so there is no harm if my daughter uses a piece of cloth. Hence, the daughter already petrified with menstruation starts using that nonsanitised piece of cloth and finds solace in it.

This is a grave situation. As it is, in Rural India education is not given much importance. An adolescent girl, as her menstruation starts, stops going to school till the cycle lasts and after some time stops going to the school altogether.

But what if sanitary napkins be produced and sold locally at the rural level by rural females? Will the above concept provide business opportunities to rural females who are uneducated and do not possess any management degree? Will these females be able to undergo training and development programmes for manufacturing and selling of sanitary napkins? What role can Government play in aiding these females to become successful entrepreneurs of the future? What is the
total cost of the sanitary napkin making machine including raw material cost and training cost?

This thought formed the basis of the motivation for research in an area which has not yet been touched in a very comprehensive manner.

Not only is it important to find out the underlying reasons for the non-usage of sanitary napkins in rural India, but also to find a viable solution for it.

1.5 OBJECTIVE:
To understand the problems and reasons for non-usage of sanitary napkins by rural women in Raisen District and to create a sustainable business model for the same and also generate employment for the rural females during the process.

1.6 RESEARCH PROBLEM:
What is the main reason for non-usage of sanitary napkins amongst the rural women in Raisen district?

Can a viable solution to this problem be provided?

1.7 NULL HYPOTHESIS:
- HO: Affordability is not the major factor for non usage of sanitary napkins in rural areas of Raisen District.
- HA: Affordability is the major factor for non usage of sanitary napkins in rural areas of Raisen District.
1.8 METHODOLOGY:
A quantitative research shall be conducted in two stages in which the first stage would be conducted by the means of a questionnaire wherein the survey would try to find out the main reasons for the non usage of sanitary napkins amongst the rural females.

The second stage shall comprise of a post research conducted by taking the feedback of the same sample size after using the sanitary napkins being provided to them.

In this way, both the problem and the proposed solution shall be researched, analyzed and interpreted in a comprehensive way.

1.9 EXPECTED OUTCOME OF THE PROPOSED WORK
The research will help in developing a sustainable business model for the manufacturing of sanitary napkins on low cost machines at very low prices which will not only help in generating employment but also penetrate the product in the vast but untouched rural Indian market.

1.10 MENSTRUAL PROTECTION TOOLS
1.10.1 What is menstruation?[2]
It is the process in a woman of discharging blood from the lining of the uterus at intervals of about one lunar month from puberty until the menopause, except during pregnancy. It starts at menarche (the first occurrence of menstruation) at or before sexual maturity in females, and ceases at or near menopause. The periodicity of menstruation gives rise to commonly used euphemisms like "period" and "monthly".
Women typically stop menstruating if they conceive or if they are breastfeeding. When menstruation stops for longer than about 90 days in the absence of pregnancy or breastfeeding, a medical evaluation should be carried out, as a number of health problems can result in absent menstruation. Menstruation lasts from puberty until menopause among non-pregnant women.

Some women experience emotional disturbances associated with their menstruation. These range from irritability, to tiredness and mood swings. The prevalence of premenstrual syndrome (PMS) is quite common amongst adolescent girls. Rarely, in individuals susceptible to psychotic episodes, menstruation may be a trigger.

Females use many types of disposable and reusable items for menstrual protection.

1.10.2 Reusable products

- Reusable cloth pads – Pads that are made of cotton (often organic), terrycloth, or flannel, and may be hand sewn (from material or reused old clothes and towels). Often used in rural areas of India, Africa and other poor countries of Asian subcontinent.

- Menstrual cups – A firm, flexible bell-shaped device worn inside the vagina to catch menstrual flow. Reusable versions include rubber or silicone cups. Sterilized after each period. It is slowly gaining acceptance in European and American subcontinent. Not very popular in underdeveloped and developing economies because of its high price.

- Sea sponges – Natural sponges, worn internally like a tampon to absorb menstrual flow.
• Padded panties – Reusable cloth (usually cotton) underwear with extra absorbent layers sewn in to absorb flow. A little obsolete in modern times.

• Blanket, towel – (also known as a draw sheet) – large reusable piece of cloth, most often used at night, placed between legs to absorb menstrual flow.

1.10.3 Disposable products

• Sanitary napkins (Sanitary towels) or pads – Somewhat rectangular pieces of material worn in the underwear to absorb menstrual flow, often with "wings," pieces that fold around the undergarment and/or an adhesive backing to hold the pad in place. Disposable pads may contain wood pulp or gel products, usually with a plastic lining and bleached. Some sanitary napkins, particularly older styles, are held in place by a belt-like apparatus, instead of adhesive or wings. The most widely used method of menstrual protection around the world due to its ease of use and non-expensive nature.

• Tampons – Disposable cylinders of treated rayon/cotton blends or all-cotton fleece, usually bleached, that are inserted into the vagina to absorb menstrual flow.

• Disposable menstrual cups – A firm, flexible cup-shaped device worn inside the vagina to catch menstrual flow. Disposable cups are made of soft plastic.

Due to its wide use and cheap price sanitary napkins is the most commonly used menstruation protection that females use worldwide. Hence, this research will be focused upon its use and importance.

1.11 What is a sanitary napkin?[3]

A sanitary napkin, sanitary towel, sanitary pad, menstrual pad, maxi pad, or pad is an absorbent item worn by a woman while she is menstruating, while she is
recovering from vaginal surgery, for lochia (post birth bleeding), after an abortion, or in any other situation where it is necessary to absorb a flow of blood from her vagina.

These pads are not to be confused with generally higher absorbency incontinence pads, which are worn by men or women who have urinary incontinence problems or experience stress incontinence. Menstrual pads may be used by some people for this purpose.

1.12 Rural India

As the research is focused on rural India, it is important to understand the definition first. Almost every economic agency today has a definition of rural India. Here are a few definitions: According to the Planning Commission, a town with a maximum population of 15,000 is considered rural in nature. In these areas the panchayat takes all the decisions. There are five people in the panchayat. The National Sample Survey Organization (NSSO) defines ‘rural’ as follows:

- An area with a population density of up to 400 per square kilometer,
- Villages with clear surveyed boundaries but no municipal board,
- A minimum of 75% of male working population involved in agriculture and allied activities.

It is generally said that the rural areas house up to 70% of India’s population. Rural India contributes a big chunk to India’s GDP by way of agriculture, self-employment, services, construction etc. As per a strict measure used by the National Sample Survey in its 63rd round, called monthly per capita expenditure, rural expenditure accounts for 55% of total national monthly expenditure.