**A FEASIBILITY STUDY ON HAND SANITIZERS**

**ACKNOWLEDGEMENT**

In the name of God, the most merciful & beneficial, we are very thankful to Almighty God, who strengthened us to complete this report.

We acknowledge our sincere gratitude to our course teacher, without his kind guidance, support & encouragement; we may not be able to complete this report.

We hope that any shortcomings, errors & mistakes are purely accidental and would be pardoned.

**EXECUTIVE SUMMARY**

Feasibility reports address things like where and how the business will operate. They provide in-depth details about the business to determine if and how it can succeed, and serve as a valuable tool for developing a winning business plans.

This project is a feasibility study on hand sanitizers.

This project studies and analyses various parameters that decide the establishment of a hand sanitizer business and whether the venture shall be feasible or not.

The project has been divided into four major branches of feasibility study, namely: Marketing, Technical, Management, Financial and Social Desirability

I have made an all out effort to present a comprehensive feasibility report and depict the feasibility of the project

**PROJECT AT A GLANCE**

The proposed project will be registered under the name MAGIC PURITY and will be located at Ikeja, Lagos state Nigeria. It is strategically chosen because the location is accessible for everyone, adequacy of transportation and near to its target market

**DEFINITION OF A FEASIBILITY REPORT**

A feasibility report looks at the viability of an idea with an emphasis on identifying potential problems and attempts to answer one main question: Will the idea work and should you proceed with it?

Before you begin writing your business plan, you need to identify how, where, and to whom you intend to sell a service or product. You also need to assess your competition and figure out how much money you need to start your business and keep it running until it is established.

Feasibility studies address things like where and how the business will operate. They provide in-depth details about the business to determine if and how it can succeed, and serve as a valuable tool for developing a winning business plan.

Why Are Feasibility Reports so Important?

Feasibility reports contain comprehensive, detailed information about your business structure, your products and services, the market and help you to know the logistics of how you will actually deliver a product or service, the resources you need to make the business run efficiently, as well as other information about the business.

**INTRODUCTION TO HAND SANITIZERS**

What are hand sanitizers?

Hand sanitizer, also called hand antiseptic, hand rub, or hand rub agent applied to the hands for removing common pathogens (disease-causing organisms). Hand sanitizers typically come in foam, gel, or liquid form. Their use is recommended when soap and water are not available for hand washing or when repeated hand washing compromises the natural skin barrier (e.g., causing scaling or fissures to develop in the skin). Although the effectiveness of hand sanitizer is variable, it is employed as a simple means of infection control in a wide variety of settings, from day-care centres and schools to hospitals and health care clinics and from supermarkets to cruise ships.

**Market Study**

The global hand sanitizer market size valued at USD 2.7 billion in 2019 and is expected to grow at a compound annual growth rate (CAGR) of 22.6% from 2020 to 2027. Shifting consumer preference towards convenient hygiene products is expected to drive the market. In addition, recent COVID-19 pandemic in the beginning of 2020 have spurred the market for hand sanitizer. The demand for hand hygiene products have been exceeding the supply in both online as well as brick and mortar sale channels worldwide owing to the global outbreak of the virus in a short time span. The outbreak has reinforced the significance of regular hand sanitizing and cleaning practices among consumers and is among the prominent factor driving the market.

**Technical study**

 It can be made in different form such as gel, foam and liquid solution (sprays). The base of all hand sanitizers is alcohol. The alcohol used may be isopropyl alcohol (Isopropanol), ethanol-propanol or povidone-iodine. Alcohol based hand sanitizer are more effective in killing microorganisms. An alcohol is any organic compound in which the hydroxyl functional group (OH) is bound to a saturated carbon atom. The primary alcohol usually forms the base of hand sanitizer that is about 60%. Hand sanitizers effectiveness starts with its formula. The base of all hand sanitizers is alcohol, added to vitamin E, aloe Vera (or another softening ingredient), and glycerine. The essential and germ killing ingredient in hand sanitizers is the alcohol, and the minimum amount one needs for a sanitizer is 60%.The process of germ killing starts by removing the oil on the skin, the bacteria present in the body from coming to the surface. Then the alcohol kills the bacterial once rubbed over the hands. Hand sanitizers is clearly effective against gastrointestinal and, to a lesser extent, respiratory infections. Alcohol rubs also helps, to kill many different kinds of bacteria and TB bacteria. Medicinal plants are plants used in the management of many ailments and as such, there applications are numerous. Examples include turmeric that contains a main bioactive compound curcumin, it has power anti-inflammatory effects and is a very strong anti-oxidant. The aim of this study is to produce hand sanitizers from locally grown medicinal plants.

**Management study**

**MATERIALS AND METHOD**

**MATERIALS:** Beaker, Filter funnel, Filter paper, foil paper, paper tape, Packaging bottle, analytical weighing balance, Lavender oil, glycerine, camphor, wild spinach, garlic, turmeric, Ethanol, distilled water

**METHOD:** Camphor, wild spinach, garlic and turmeric were grounded into powder form camphor and wild spinach give dry fine particle; while garlic and turmeric was in moisten form.50g of each medicinal plants (wild spinach garlic turmeric) and camphor was weighed using analytical weighing balance and poured into four different beakers. 100ml of ethanol was poured into each of the beakers and covered with foil paper seal with paper tape labelled and left for 24 hrs, 48 hrs and 72 hrs.

**MEDICINAL EXTRACT:** The content in the beakers was filtered into a new four different beakers by the use of filter paper and filter funnel. 100ml of ethanol was then poured into these beakers, sealed with foil paper, and left for another 72hrs. This procedure was repeated twice and the filtrate was collected. 10mlof each extract was measured into four different beakers that had been labelled. 90ml of ethanol was measured and poured into each of the beakers. To each of the beakers, a drop of lavender oil was added, 10ml of glycerine was measured, to it, 90ml of ethanol was added, and two drops of lavender oil.

**RESULT AND DISCUSSION:** It was observed that garlic turns milky and gave a pungent small hence it cannot be used to make a hand sanitizer. Turmeric cannot be used to make hand sanitizer because of its colour i.e. it's colour reaction gives a reddish yellow colour, hence it is not presentable as a good hand sanitizer. Camphor, wild spinach and glycerine can be used to make hand sanitizer because it gives sweet smell but bleaching agent must be added to the wild spinach solution to remove the colour of the solution.

**PACKAGING**: The packaging bottle were rinsed with water and then equilibrate i.e. ethanol was used to rinsed the bottles to let the water drop out. The camphor hand sanitizer, glycerine hand sanitizer and wild spinach hand sanitizer were poured into the packaging bottles and ready for use

**DISCUSSION**

Hand sanitizer can be produced by the medicinal plant, such as garlic, wild spinach and turmeric, camphor, glycerine. Hand sanitizer produced from garlic and turmeric is not presentable because of its colour and the pungent small. Wild spinach, camphor and glycerine can be used to produce hand sanitizer due to the colour and the sweet smell, which makes them presentable. On application to hand it works efficiently (it kills germ) for the purpose, it was produced. It is advantageous to use wild spinach because of its anti-ulcerative and anti-cancerous benefits. Turmeric hand sanitizers will be better than alcohol rob hand sanitizers because of its powerful anti-inflammatory effects and its strong anti-oxidants potentials. Hand sanitizers made from camphor would have the greatest advantage because it is readily absorbed through the skin producing either a coolness or warmth sensation, or could act as a local anaesthetic and antimicrobial substance, and presently a lot of anti-itch gels and cooling gels use camphor as the active ingredient. It could also act as a good product for babies. Hand sanitizers are generally known to kill germs, the active ingredient is ethanol which effectively act against the germ and wipe them off making the hand free of microorganism. Lavender oil makes the hand sanitizer to have a pleasant smell or aroma while glycerine makes it to be turbid. The hand sanitizer can be used to kill germs in place such as toilets, hospitals, home, industries, offices, etc.

**Financial study**

The financier of the project is a sponsor with a high net worth

The proposed projects’ investment cost are

Composed of the building improvements – a small building to be erected at Ikeaja, Lagos state costing approximately around N650,000

 Furniture Fixtures and Equipment to form part of the projects operational facility in its daily operations that cost approximately around N200,000.00, and pre-operating expenses that are indispensable in the start of the business operations like permits and licenses, inventory, advertising, rental deposits and office supplies with a cost amounting to around N70,000.00 as a rough estimate.

**Socio economic study**

The hand sanitizer promises to be a very effective and desired business venture in the Ikeja community as hygiene is a very important part of our daily activities and especially now with the situation the whole nation is experiencing and Lagos being the epicentre of the whole thing. Citizens living in Ikeja and around will be willing to stay clear from the virus thus prompting them on using the hand sanitizers frequently than usual.

**CONCLUSION**

In conclusion, hand sanitizer was produced to solve the problems faced from the action of germs, bacterial and viral infections. It can quickly reduce the number of microbes on hand. The use of alcohol hand sanitizer enhance hand hygiene programs due to their ease and convenience of using in conjunction with plain or antimicrobial soaps and water thereby increasing hand hygiene compliance level

**RECOMMENDATION**

The alcohol hand sanitizer should be used by health practitioners in washing hands during routine patient-care activities on the general patient floor as well as to pre-op surgical preparation and post-op hand washing in the hospital recovery room. Hand sanitizer is recommended for cleaning hands before and after eating, when preparing food or when hands are potentially contaminated with bodily fluids. In addition, people in public toilets to prevent contact of diseases should use it. It can also be used in offices, industries and other public place.