

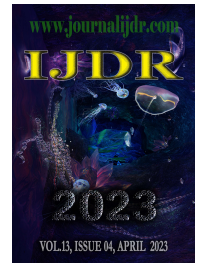


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RESEARCH ARTICLE

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## A STUDY ON THE EFFECT OF ALERT DEVICES TO MINIMISE ANIMAL CRUELTY

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### ABSTRACT

Pets are more than just animals, they are good friends and reliable members of the family. Therefore, the need to treat people's best partners has become important and has become a necessary part of our lives. Dog owners, for example, are responsible for walking their dogs 3-4 times a day so they can go to the bathroom and exercise. Our goal is to use advanced technology to create affordable smart pet collars with features like GPS trackers, pain intensity meters etc. For many years, Global Positioning System (GPS) technology has been used in a variety of fields. In recent years, GPS technologies, in conjunction with telemetry methods, have begun to be preferred in the monitoring and tracking of wild animals. This technology has been widely applied, particularly in the development of collars for tracking wild animals. However, due to their expensive cost and restricted user intervention, such devices are not widely employed by practitioners or researchers on a tight budget. With the advancement of technology, various hardware-based platforms have been established. The Smart Collar is a global pet tracker that is compact and extremely pleasant to use for any pet. GPS technology is utilised to locate the item, allowing the owner to track their pet's movements by using a smartphone app.

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## INTRODUCTION

Animals have a vital and complicated part in our lives nowadays. Dogs have been human companions for thousands of years, but now they assist the disabled and operate in battle, search and rescue scenarios. Consumers are becoming increasingly concerned about human wellbeing and its impact on our health and environmental footprint. There are a variety of societal and economic reasons to examine how new computing technologies can be used to assure animal welfare in a variety of scenarios. The goal of this study is to conduct a thorough search of the available literature on intelligent computers and sensor technologies for livestock, livestock, and wild animals' wellbeing. Animal welfare entails determining whether animals are healthy, pain-free, and actively stimulated in their surroundings. Smart collars are ideal if you want to let your pet walk freely while yet keeping an eye on it. Many smart collars also have simple methods for setting invisible boundaries, while others provide information on overall fitness and activity levels.

## OBJECTIVES

- To study the history and evolution of pet collars
- To analyse the benefits and limitations of such products

- To study the impact of smart pet collars in the market

## REVIEW OF LITERATURE

1. Pets are more than just animals, they are good friends and reliable members of the family. Therefore, the need to treat people's best partners has become important and has become a necessary part of our lives. Dog owners, for example, are responsible for walking their dogs 3-4 times a day so they can go to the bathroom and exercise. Our goal is to use advanced technology to create affordable smart pet collars with features like GPS trackers.
2. The interaction between human and physical devices and devices in the real world is gaining more attention, and requires a natural and intuitive methodology to employ. According to this idea and living well, life has been a growing demand. Thus, how to raise pets in an easy way has been the main issue recently.
3. GPS geolocation embedded in the dog's collar, to keep track of it when another person who has been hired walks it. As there are no microchips or collars with GPS, as well as the respective animals to carry out the study and, therefore, its subsequent follow-up, a simulation will be carried out, hence the real time is put in quotes.

- The capacity to track a significant number of individuals using GPS in wildlife research is always limited by expense, limiting inferences about species-habitat correlations. We explain the modification and use of relatively new and inexpensive commercial GPS devices, as well as specifics on an individual's (mountain brushtail possum, *Trichosurus cunninghami*) travel habits, including how its mobility varied over time. and deliver accurate information. and how people engage with one another. Our findings indicate that this technique has a high potential for improving understanding of wildlife migration patterns and habitat preferences at a fraction of the expense of traditional GPS techniques.
- Livestock industries in developing countries lack the technology that can directly impact meat and dairy products, where human resources are a major factor. WSN can intelligently determine when environmental parameters are unstable. In addition, cow collars are designed to give an accurate reading of the animal's body temperature, heart rate and exact location.

## BACKGROUND

**Early Days:** The earliest depictions of dogs on a leash (suggesting that some form of collar was also used) come from the Shuwaimith region of what is now northeastern Saudi Arabia. Shuwaimis depicts a rock slab depicting thirteen dogs and his one hunter, discovered by archaeologist Maria Guagnin. Two dogs are connected to the hunter by a leash, which is interpreted as a leash. This plaque is 8,000 years old to him. Ancient Mesopotamians (probably Sumerians) most likely invented dog collars, but the topic is still much debated, as is the question of where dogs were first domesticated. The original Mesopotamian dog collar was a simple string that the owner wrapped around the dog's neck to control the dog. It has been replaced with a collar made of leather. As Mesopotamian civilization became more complex, so did dog collars. By circa 612 BC and 3000 BC, collars had become considerably more ornate by the upper classes and generally varied from simple ropes or strings to slip-line collars. It evolved into a shape, and then perhaps a snug-fitting strap that was slipped over the dog's head and fitted around the neck.

**Evolution:** Dog collars were refined in 16th-century Europe, reaching a peak in design in the 18th century when upper-class owners purchased ornate collars for their dogs. Often the dog's name, owner's name and address were stamped on the leather or metal band. This trend continued into the Victorian era, boosted by the popular monarch, Queen Victoria. There are many other cultures that have used dog collars and contributed to their development. For example, the Celts developed broadband collars for controlling large dogs, such as hunting dog collars, and Native American tribes in North America developed harnesses when using dogs to pull sleds and carts.

**Advantages:** Every dog wants to go around and be free outside. Most dog owners want their pets to be able to run around the backyard and explore the area without having to continuously monitor them or worry about their whereabouts. Consider purchasing a GPS tracker instead of a fence. The tracker will give you piece of mind because you will always know where your pet is.

- Most GPS dog trackers allow you to create a geofence around your yard or neighbourhood. You will be notified if your pet travels outside the designated area. Some gadgets include tones or vibrations to help train dogs in geofence regions.
- GPS trackers for dogs also allow you to see where your pet goes and what they do. The GPS tracker will show you a trip path of all the locations your dog frequents. Some trackers will also provide information about your dog's fitness and activity level, assisting you in keeping your pet healthy and happy.

## Limitations

**Battery Failure:** Relying on GPS technology may prove troublesome if the device's battery dies. You could lose your pet if the battery dies and you are unaware of where to begin searching for him.

**Signal Issues:** GPS technology has to rely on transmissions from at least four satellites. The positioning will be erroneous if it fails to connect to all four satellites. High barriers, trees, and skyscrapers can all obscure a signal. Storms and other extreme weather conditions can also be problematic.

## Data Analysis



The market for smart pet collars is estimated to be worth USD 411.42 billion in 2021 and to grow at a CAGR of 9.94% to reach USD 798.69 billion by 2028.

## RESEARCH METHODOLOGY

The method of research used in this study is exploratory as the smart pet collar industry is relatively new in the market and there is limited information related to our topic of study. Our study was conducted in a way in which there is opportunity provided for different aspects of the problem. We have also collected data from various journals and reports from the Internet.

## CONCLUSION

The proposed method has the advantages of being cost-effective, non-invasive, autonomous, and simple to capture biometric data for monitoring companion animals in a smart city in real time. The suggested recognition system provides a non-contact, cost-effective, and robust recognition system for pet animals. As a result, there is no need to mount or embed any invasive artificial markings or microchip IDs in companion animals for recognition and monitoring.

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