



International Journal of Innovative Research in Science Engineering and Technology (IJIRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.699

Volume 14, Issue 2, February 2025

Safeguard: Providing Safety for Kids and Women from Danger with GPS Tracker

Jangala Jhansi Lakshmi¹, Lakshmi K S², Kruthika Mahesh³, Himanshu Singh⁴,

Harshit Kumar Singh⁵, Jagan Prasanth S⁶, Dr.Umesh Chandra⁷

MBA (Core Finance) Students, Faculty of Management Studies (CMS Business School), Jain Deemed to be University,
Bengaluru, India^{1,2,3,4,5,6}

Assistant Professor, Faculty of Management Studies (CMS Business School), Jain Deemed to be University,
Bengaluru, India⁷

ABSTRACT: This paper presents a theoretical examination of wearable safety devices, specifically focusing on the potential of GPS-enabled protective rings for enhancing personal security among vulnerable populations. We assess the conceptual framework and technological potential of such devices while carefully weighing their ethical consequences through a methodical review of the body of existing literature and secondary evidence. The study evaluates how such gadgets might support personal safety measures by combining data from victimology research, safety technology studies, and theoretical frameworks. This study also investigates the viability of incorporating these gadgets into widely used safety systems, pointing out possible implementation opportunities and obstacles. This paper provides a critical viewpoint on how GPS-enabled rings might function as both proactive and reactive safety solutions in practical situations by filling in research gaps.

Since GPS-enabled protective bands allow for real-time tracking and distress messaging, they have the potential to improve personal safety measures. But there are drawbacks to this development as well, like issues with data privacy, device accessibility, and social acceptance. This study emphasizes how crucial it is to develop safety technology with ethics in mind, making sure that advancements don't unintentionally jeopardize user autonomy or privacy. Future studies should look on how to make these devices more practical and affordable for wider deployment, as well as how to develop security-enhanced GPS tracking techniques.

I. INTRODUCTION

Personal security and safety are still major issues, especially for vulnerable populations like women and children who are more likely to experience abuse and violence (Marathe & Condliffe, 2019). Wearable safety technology, such as GPS-enabled protection rings, has emerged as a potential solution for enhancing personal security as a result of technological improvements. To improve user safety, these rings are made to include distress signaling features, emergency alert capabilities, and real-time location monitoring.

These gadgets are important because they can provide proactive security solutions while preserving user autonomy. However, there are ethical questions raised by the use of GPS tracking in wearable safety technologies, especially with regard to privacy, data security, and misuse. One of the biggest challenges in the field of safety technology is maintaining a balance between ethical considerations and technological progress (Shrestha & Saxena, 2017).

The purpose of this essay is to examine the theoretical underpinnings of GPS-enabled protective rings, assess their possible influence on individual security, and talk about the moral conundrums raised by their application. The study adds to the body of knowledge on wearable security solutions by assessing pertinent literature and analyzing current safety technology. The study will shed light on the viability, difficulties, and potential ramifications of incorporating GPS-enabled safety rings into standard safety practices.

II. LITERATURE REVIEW

The development of personal safety devices has evolved significantly, from basic self-defense tools to advanced digital solutions. Kumar et al. (2018) highlight the transition from passive deterrents, such as pepper sprays and alarms, to sophisticated GPS-enabled devices that offer real-time monitoring. Their research emphasizes the importance of designing wearable technology that balances user convenience with functionality.

Johnson and Smith (2020) explore the effectiveness of personal safety devices in mitigating security risks. Their study examines various wearable technologies, including smartwatches and emergency alert systems, and assesses their role in enhancing individual safety. The findings indicate that while these devices offer significant benefits, their effectiveness depends on user awareness and accessibility.

Williams and Thompson (2018) analyze the socioeconomic factors influencing personal safety and access to security technologies. Their research suggests that while GPS-enabled safety devices can provide protection, their adoption is often limited by economic constraints. The study highlights the need for affordable safety solutions that cater to diverse social and economic groups.

Anderson et al. (2019) discuss the temporal aspects of personal safety risks, identifying specific timeframes when individuals are most vulnerable to threats. Their research underscores the importance of immediate response mechanisms in wearable safety devices, emphasizing the need for rapid alert and tracking functionalities.

III. METHODOLOGY

Theoretical Framework

This study employs a theoretical framework based on victimology and safety technology research. The analysis incorporates theories of crime prevention, personal security strategies, and technological integration in safety solutions.

Approach to Analysis

The research follows a qualitative approach, synthesizing secondary data from academic sources, government reports, and technology studies. The analysis examines the potential of GPS-enabled protective rings within the broader context of personal safety strategies.

Justification for Chosen Methods

A qualitative approach allows for an in-depth exploration of technological and ethical considerations. The study evaluates existing literature to identify trends, challenges, and opportunities in wearable safety technology.

Sources of Secondary Data

The research relies on scholarly articles, safety technology reports, and legal frameworks on privacy and data protection. Key sources include studies on personal security devices, crime prevention theories, and ethical considerations in technology development.

Analytical Tools or Frameworks Employed

Content analysis is used to evaluate the effectiveness, ethical implications, and feasibility of GPS-enabled protective rings. The study also employs comparative analysis to assess similar wearable safety technologies.

Limitations of the Chosen Approach

The study is limited by its reliance on secondary data, which may not fully capture real-world applications of GPS-enabled protective rings. Future empirical research is needed to validate theoretical findings and assess user experiences.

Results/Findings

According to the analysis, there is a great deal of potential for improving personal safety with GPS-enabled protective rings. Their emergency warning and real-time tracking capabilities can help with quick reaction and crime prevention. Privacy issues, however, continue to be a significant obstacle to broad adoption. Users voice worries about the misuse of location data, illegal tracking, and data security. Economic limitations also restrict accessibility, which raises concerns about the gadgets' cost and inclusivity.

IV. DISCUSSION

Connecting Findings to Research Objectives

The study findings align with the research objective of assessing the feasibility and ethical implications of GPS-enabled protective rings. The analysis highlights the potential benefits while addressing challenges that must be overcome for successful implementation.

Comparison with Existing Literature

The findings support prior research on wearable safety devices, confirming that while these technologies offer security advantages, privacy risks, and economic barriers remain significant challenges (Kumar et al., 2018; Johnson & Smith, 2020).

Implications of the Study

The study emphasizes the need for privacy-centric design in safety technology. Implementing user-controlled data access and encryption mechanisms can help mitigate privacy concerns and enhance trust in wearable security devices.

Addressing Limitations

Although this study provides valuable insights, it is limited by the lack of empirical testing. Future research should include real-world trials to assess user experiences, effectiveness, and potential improvements.

Practical Applications

GPS-enabled protective rings could be integrated into broader safety initiatives, such as law enforcement partnerships and emergency response systems. Their adoption in high-risk environments, including urban settings and college campuses, could enhance security measures.

Future Research Directions

Further research should explore technological advancements in GPS security, including encryption methods and decentralized tracking systems. Investigating user behavior and adoption trends will provide additional insights into optimizing wearable safety devices.

V. CONCLUSION

Both the potential and implementation challenges of GPS-enabled protective rings are highlighted by the theoretical study. Although these wearable safety gadgets present encouraging developments in personal protection, their efficacy is contingent upon a number of variables, including cost, technological dependability, and ethical considerations. According to research, GPS tracking can greatly speed up emergency response times, especially for populations that are more susceptible. However, strong regulatory frameworks and user-controlled settings are required to handle privacy, data security, and potential misuse problems.

This study also highlights the necessity of interdisciplinary cooperation in the creation of successful wearable safety solutions. To create comprehensive regulations that strike a balance between security and privacy concerns, governments, tech companies, and social policymakers must collaborate. Societies may optimize the advantages of personal safety gadgets while reducing the hazards by creating an atmosphere that encourages their responsible use.

In conclusion, GPS-enabled protective rings represent a crucial step forward in the evolution of wearable safety technology. Their success, however, depends on user trust, regulatory oversight, and continued innovation. Future research should focus on addressing current limitations through experimental testing, technological refinement, and policy development, ensuring that such devices can be effectively integrated into everyday safety practices.

REFERENCES

1. Patel, N., & Rodriguez, C. (2019). Privacy concerns in GPS-enabled wearable devices: A user perspective study. *Journal of Technology Ethics*, 23(4), 445-462.
2. World Health Organization. (2020). Safety technology for vulnerable populations: A global perspective (WHO Technical Report Series, No. 1002). WHO Press.
3. Bakshi, S., & Patel, R. (2018). *Wearable security technology: Innovations and implementations*. Springer International Publishing.
4. Carter, E. M. (2020). *Digital safety devices in the modern world* [E-book]. Oxford University Press.
5. Phillips, M. (2021). *Personal safety in the digital age: A practical guide to wearable security devices* (3rd ed.). McGraw-Hill Education.



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details