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PROCEEDINGS OF JOHOR INTERNATIONAL INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2024 (JIICaS 2024)



*“Flourish and Nurturing Sustainable
Innovation for a Prosperous Nation”*

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Preface

In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.

This e-book compiles the extended abstracts that submitted to Johor International Innovation Invention Competition and Symposium 2024 (JIIICaS2024), where JIIICaS2024 is a virtual platform for all creative minds to share and present their invention and innovation. Each abstract gives a brief background on the innovation or project.

We hope that this e-book will help the readers to get to know the innovation done by the students and get some ideas to develop future innovation products.



Foreword Rector



Assalamualaikum warahmatullahi Wabarakatuh,
Salam Sejahtera, Salam Malaysia MADANI and
Salam UiTM Dihatiku.

In the name of Allah, the Most Gracious, the Most
Merciful.

It is a great honor to welcome you to the Johor
International Innovation, Invention, Competition, and
Symposium 2024 (JIIICaS 2024). This event

connects various disciplines, focusing on education and engaging educators,
students, researchers, and innovators from all walks of life.

Innovation is not just about ideas; it demands perseverance, creativity, and
determination to turn those ideas into reality. The remarkable projects
showcased today highlight the dedication and spirit of all participants.
Initiatives like this not only explore new technologies but also cultivate skills
and leadership among our youth. At Universiti Teknologi MARA (UiTM) Johor
Branch, we are fully committed to fostering a dynamic culture of innovation,
promoting the commercialization of new products, and encouraging
meaningful collaborations with industry and society.

As we celebrate this event, I would like to extend my heartfelt gratitude to all
sponsors, judges, the College of Computing, Informatics and Mathematics,
UiTM Pasir Gudang Campus as the event organizer, as well as to the
researchers and participants for their hard work in making this event a
success. Let us continue striving for innovation and excellence. May the
ideas presented today inspire us and lay the groundwork for future
achievements.

Thank you.

Associate Professor Dr. Saunah Zainon
Rector
Universiti Teknologi MARA (UiTM)
Johor Branch

(A-ST030) THE GLOWGUARD MULTIFLEX UMBRELLA

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ABSTRACT

The GlowGuard Multiflex Umbrella represents a groundbreaking response to the evolving needs of consumers, seamlessly blending traditional umbrella functionality with cutting-edge innovation to elevate user convenience, safety, and practicality. Conventional umbrellas often fall short in addressing the diverse weather and safety challenges users encounter, necessitating a multifunctional solution capable of adapting to various conditions and preferences. Through a user-centric design approach, the GlowGuard Multiflex Umbrella aims to not only enhance user convenience and safety but also exceed customer expectations by integrating advanced features such as safety shining tape, a mini purse, LED lighting, and hooks. This innovative design ensures unparalleled versatility, convenience, and safety, making it a cost-effective and dependable choice for users navigating diverse weather conditions and outdoor activities.

Keywords: Multifunction, versatility, convenience, space savings and innovation

1.0 INTRODUCTION

One area of design thinking research that has garnered interest is innovation of meaning (IoM) (Goto S., Makino H., Ando T., 2023). The Multifunctional Umbrella is a groundbreaking innovation in umbrella design, offering a range of features beyond just protection. Its innovative design incorporates storage alternatives and integrated lighting solutions, enhancing user experience. This innovative umbrella design addresses common issues faced by users, such as carrying multiple items and safety concerns in low light conditions, pushing the boundaries of innovation (Dr. G. Yuvaraj, 2023).

2.0 OBJECTIVE

These are objectives of created The Glow Guard Multiflex Umbrella:

- The Multifunctional Umbrella is designed to enhance safety, especially in low-light conditions, by incorporating advanced lighting solutions and reflective tape for improved visibility (Jollybrolly, 2024).

- The Multifunctional Umbrella, unlike conventional models, offers more than just basic functionality, offering value-added features that enhance user experience and convenience.
- The Multifunctional Umbrella is designed to meet the diverse expectations of our customers, providing a reliable and adaptable solution for their daily needs.
- Utilizing user feedback in successive iterations, the Multifunctional Umbrella consistently enhances its value proposition, ensuring it meets evolving consumer expectations and surpasses expectations.

3.0 METHODOLOGY



Figure 1: The GlowGuard Multiflex Umbrella

The GlowGuard Multiflex Umbrella is a revolutionary product that offers safety and convenience. It features Safety Shining Tape on the Outer Canopy, which enhances visibility in low-light conditions, enhancing safety during walks or commutes according to Robustt Store (Store, 2023). The Mini Purse on the Inner Canopy provides secure storage for small essentials, eliminating the need for additional bags or pockets. The LED White Lamp on the Inner Canopy provides supplementary lighting for enhanced visibility, making it useful in indoor settings or during cloudy days (Austin, 2024). Two hooks on the Shaft allow users to hang items, freeing up their hands and increasing convenience. Torch Light Sync with the Shaft provides convenient illumination for navigating dark streets or pathways during nighttime (Areaspy, 2024). The umbrella provides optimal protection and comfort, addressing common issues faced by umbrella users in metropolitan environments, such as lack of storage space and safety measures. The versatile design and focus on user needs make it a revolutionary option in the market (E, 2021).

4.0 RESULTS

The GlowGuard Multiflex Umbrella is a space-saving umbrella that combines traditional functionality with modern features like LED lighting and integrated storage. It simplifies tasks like storing small items and hanging bags, offering cost savings compared to purchasing separate items. The umbrella's unique design elements and positive consumer reviews have led to increased product visibility and positive word-

of-mouth recommendations, setting a new standard for umbrella design, and addressing diverse user needs (Ai, 2024).

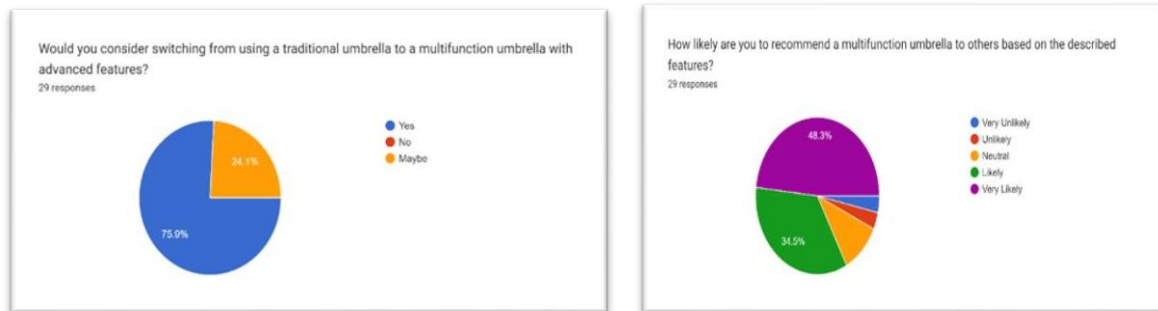


Figure 1 and 2 reveals the likelihood of people recommending a multifunction umbrella based on its features and which features they find most appealing.

The survey's results show how likely people to recommend a multifunction umbrella to others based on the described features the chart pie reveal that 46.4% of respondents very likely to recommended it, 35.7% likely to recommend it, 10.7% prefer neutral, and 3.6% maybe unlike. These statistics show people like or unlike to recommend this innovation product to other people. Based on the figure 2, 64.3% of respondents choose features of torch light sync with the shaft, followed by 57.1% for safety shining tape on the outer canopy, 21.4% mini purse on the inner canopy, 53.6% for LED on the inner canopy too and last is 35.7% for 2 hooks on the shaft. This shows that 3 feature they were very likely to make as innovation on the glow guard multiflex umbrella (Students, 2024).

5.0 CONCLUSION

Overall, the GlowGuard MultiFlex Umbrella signifies a notable progression in umbrella technology, providing a full resolution to prevalent difficulties encountered by consumers (Moodadmin, 2023). The product's adaptable design, which includes attributes like as UV protection, synchronised torch light, integrated storage options, and safety measures like reflective tape and LED illumination, makes it a functional and useful addition for different weather situations and outdoor pursuits. This unique umbrella establishes a new benchmark in functionality and safety by simplifying the user experience and offering a dependable solution for various requirements. The GlowGuard MultiFlex Umbrella is a reliable and versatile companion that offers both protection and convenience for daily commuting, outdoor adventures, or travel.

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