

The Luggage Product Design with Electric Drive Concept

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ABSTRACT

Pro D.I.Y is a combination of Pro (professional) and Do It Yourself (modify or make things yourself) to carry clothes, laptops, skincare, or other loads practically and efficiently. This product will be aimed at influencers/celebs who complain about carrying work items simultaneously but using various sizes of bags. This makes the celebgrams need a personal assistant to help carry bags. This Portable Bag uses the concept of an electric drive it is more efficient to use luggage electrically. This product uses materials that have waterproof properties when exposed to water including synthetic leather, aluminium, and parachute cloth. In addition to focusing on the functional side, researchers also focus on design and aesthetic models, to support this, researchers will conduct several data collection techniques so that the resulting product is maximized.

Keywords: Pro D.I.Y, Bag, Portable, Influencer, Electric Drive

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INTRODUCTION

This research raises the topic of the concept of portable bags especially from Luggage can transform them into electric drives. Research related to the topic of portable bags has been carried out, namely, the design of portable luggage for maternity clothing and equipment needed for promotion girls which emphasizes transportation tools for the main office work needs using an electric drive method so as to produce a tool that is comfortable and does not cause pain in the body when carrying a suitcase because it carries equipment at the same time during activities. He Liangcai (2014) also reviews research on portable suitcases or suitcase-type bags.

Liangcai's explains that the suitcase can have a capacity for two adult passengers. The research conducted by researchers emphasizes portable bags that use the concept of being able to be converted into an electric drive. Influencers can use the controller in the suitcase to make it easier for the influencer to carry things, carry the suitcase, and run it electrically to run it portable Luggage, also known as smart scooters, are a unique form of transportation that uses advanced technology launched from 2014. The rider can control the vehicle to move forward, accelerate, slow down, brake, etc.

Endurance is also a very important factor because WFO work is a journey through various situations so it cannot predict the items brought to work and the changes of clothes arranged

by management. To meet the need for durability in suitcases, researchers will use hard fabric that has water-resistant properties so that luggage can be protected from water. Then for the stitching, the researchers used 2 types of stitches, namely single stitches and double stitches to make them stronger. The case study chosen by the researcher was a celebrity model from Surabaya named Deandra Rizka with approved as a research object because she often carried out photo shoots which the researcher could use to collect data. In this research, researchers also paid attention to aspects such as design, quality, and ergonomics. The product that researchers will make is a portable bag with an electric drive concept for a case study of promotional girls for influencers/celebrities in Surabaya.

METHOD

Method In this research, qualitative research will be used. Qualitative research aims to understand a research object through perception, behavior, and action. The resulting data will be in the form of paraphrases, words, or sentences.

The qualitative method was carried out by asking about several attributes related to design needs and users related to the need for electric bags or suitcases that are comfortable, safe, and practical.

Some data collected from interviews with respondents can be used as a basis for design.

RESULTS AND DISCUSSION (3-14 pages)

I. Observation

Researchers will observe the bags used by several Surabaya celebrities. Observation is done by systematically observing and recording the object under study as follows:

1. The commonly used bags are tote bags/sling bags an
- 1-2. Researchers will observe the bags used by several Surabaya celebrities. The qualitative method with observation is carried out by observing and taking notes on the objects studied as follows: manual suitcases. The bag only has storage space in 1 space so it is not efficient to store items in the bag.
- 2-3. Commonly used bags have the potential to cause pain in the hands and shoulders. They also have the potential to cause a burning sensation in the shoulders when in use. Due to the small position of the sling strap, the load carried and the size of the sling strap are not balanced. Meanwhile, if use a manual suitcase, the fingers feel sore.
- 3-4. The material used is polyester canvas.
- 4-5. The bag usually used measures 32 cm in length, 12 cm in width, and 30 cm in height.
- 5-6. The bag used does not have a portable system when used to store goods and carry the bag because it uses manual methods.
- 6-7. For the opening and closing system, the commonly used metal zippers.
- 7-8. The stitching system or type used is single stitching.
- 8-9. The bag used does not have a lock.

II. Interview

The following are the results of interviews conducted by researchers:

A. First, the researcher interviewed a celebrity named Deandra Rizka through the WhatsApp application.

1. The respondents said that she felt pain in her fingers and shoulders when using a tote bag while doing WFO work activities.

2. The design that will be applied to the research product, respondents prefer a tote bag with an electric drive concept because it makes it easier for her to do WFO work.

B. Second, the researcher conducted an interview with a bag tailor named Yudi, the following are the results of the interview:

1. The researcher asked what materials were suitable for use in luggage bags, then he replied that the most important factor for luggage bag materials was bags that had waterproof specifications, then he suggested using Cordura fabric for the outside and parachute fabric for the inside.
2. For the stitching system, he suggested using a combination of stitching, namely single stitching and double stitching.
3. Then regarding the opening and closing system, he suggested two things for this, namely using a waterproof zipper.

C. Third, the researcher conducted an interview with the management at SZMODELMANAGEMENTSURABAYA which houses the Modeling Class in Surabaya. The following are the results of interviews conducted by researchers:

The researcher asked about what needs to be considered when making portable bags for promotion girls, then he said there were 4 important points, namely:

1. Provide enough space in the suitcase
2. A combination lock system is applied to the suitcase by determining a code that is only known by the user of the suitcase.
3. The drive system used on the suitcase uses an electric motor.
4. Materials that have waterproof specifications.

COMPARATIVE STUDY

Researchers conducted a comparative study of conventional suitcase products and modern suitcases with electric technology that researchers will make. So that the following data is obtained:



Figure 1. PRO D.I.Y Suitcase electric drive

Source: Personal

Table 1. Comparative study

| No. | Excess | Lack |
|-----|---|---|
| 1 | It has an ergonomic design so it is comfortable to carry anywhere | Must have sufficient luggage for storage |
| 2 | The combination lock security feature is combined with a smart anti-theft alarm | The charging system is quite old |
| 3 | Use waterproof material | It is not recommended to go along rocky roads |

MATERIAL STUDY

Based on the data collection conducted by the researcher, the main material specifications required for this product are strong and sturdy. Therefore, the researcher used hard metals such as iron and aluminum for the inner frame and Carera fabric for the outer part in accordance with the suggestions of the practitioners and academics who had been interviewed by the researcher.

FINAL DESIGN



Figure 2 3D Perspective View



Figure 3. 3D Perspective View



Figure 4. 3D Perspective View



Figure 5. PRO D.I.Y Suitcase electric drive

CONCLUSION

Based on the results of the research that has been done, the researchers can conclude that the product design of portable bags with the concept of electric drive is as follows:

1. This electric suitcase product can help users in traveling activities because it uses an electric drive system.
2. This suitcase has enough space so that it can store the items needed.
3. Has a combination lock that uses a code and is only known by the user. So that the items in the suitcase are safer and this suitcase is also equipped with an anti-theft system.

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SUGGESTION

Based on the results of research and discussion regarding the design of portable bag products with an electric drive concept, the following suggestions were obtained:

1. Developing portable bag products with polycarbonate material so that they have a sturdy and hard construction to add aesthetic value.
2. Adding additional technology such as a USB port to charge suitcase users' cellphones.
3. Add a GPS feature to determine the location of the suitcase, for example, when at the airport.

REFERENCES

- [1]. KBBI, (2007:1146). Pengertian tas portable
- [2]. https://www.chinadaily.com.cn/business/2014-05/29/content_17549747.htm
- [3]. Glicksman, (2017). Peranan influencer
- [4]. Poerwodarminto (1987:198) sales promotion girl
- [5]. Gisepha Bukhari, A.A.S., Ali, S., Shaikh, S.H., Soomro, T.A., Lin, Z. dan Cao, W., (2018, March). Design of a high-speed 18/12 switched reluctance motor drive with an asymmetrical bridge converter for electric vehicles. In the 2018 International Conference on Computing, Mathematics, and Engineering Technologies (iCoMET)
- [6]. Zeraoulia, M., Benbouzid, M. E. H. dan Diallo, D. (2006). Electric motor drive selection issues for HEV propulsion systems: A comparative study, IEEE Transactions on Vehicular Technology
- [7]. Siburian, B.C. dan Bahriun, T.A., 2015. 'Perancangan Alat Pengisi Baterai Lead Acid Berbasis Mikro kontroler ATMEGA 8535'. Singuda ENSIKOM
- [7]. Sepdian, S. 2020. Metode Metode Kontrol Pada Motor Listrik, Jurnal Surya Teknik