Folk-Based Farm Waste with Akar Wangi (*Vetiveria zizanioides* (L.) Nash) Beautiful to look at and Inhale Fragrance from Garut West Java

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**ABSTRACT**

The Fragrant root is a plant that can produce fragrant root oil through the distillation process. Indonesia is one of the largest producers of fragrant root oil in the world, the center of producing fragrant root oil in Indonesia is in Garut Regency. From the results of the research, in addition to producing pure oil, fragrant root waste can also be processed into handicrafts of secondary needs such as bags and souvenirs by weaving.

**Keywords:** E-bussines, *Vetiveria zizanioides* (L.) Nash.

**INTRODUCTION**

The development of information technology has created many new breakthroughs in all fields. Each of these new breakthroughs has been widely used and makes it easier for its users. The internet has changed many things in Indonesia, not only in Indonesia that has felt the changes even the whole world has experienced changes due to the internet and is becoming a trend (Akil, 2015; Ghazmahadi, Basri, Kusnadi, Ramli, 2020), this change, especially in meeting the need for information and a broad network system (Ramli & Yudhistira, 2018; Ramli 2019b), makes it easy to access information quickly and more flexibly. The development of technology and information makes information easier to obtain even with the rapid development of information, we must be smart to sort out which information is useful or not (Ramli, 2018a; Takaya, Ramli and Lukito, 2019; Ramli, 2018b), makes it easy to access information quickly and more flexibly. The
development of technology and information makes information easier to obtain even with the rapid development of information, we must be smart to sort out which information is useful or not (Ramli and Maniagasi, 2018).

The use of the internet in the business world has changed its function which was originally only as a tool for electronic information exchange at this time into a tool for business strategy applications or can also be called E-Business, which is in great demand by the Society in today's era (Chandra, Takaya and Ramli, 2019; Mariam & Ramli, 2019b). Examples of e-business include purchasing goods online through www.shoppe.com. From the process of ordering goods, confirmation of payment, to confirmation that the shipment of goods has arrived to the customer is done electronically (Anshary, 2016). Indonesia is a special country, with its vast diversity of cultures giving rise to a variety of cultures that characterize the Indonesian nation including places of vacation, culinary, traditional clothing and distinctive Crafts in each region in Indonesia which are very attractive to be developed into commercial products.

One of the souvenirs or handicrafts of Indonesia that is very popular with the community is in Garut, West Java, namely the fragrant root waste handicraft which attracts a lot of attention because of its various benefits and benefits. Besides being used in the essential oil industry, various handicrafts from fragrant root fragments also cannot be underestimated. Fragrant root crafts from Garut have advantages over the production of fragrant roots in other regions (Nursalikah, 2016). Data from 2010-2015 shows that the total area of fragrant root plantations increased from 2.325 to 2.355 Ha, with an average yield of 73.17 tons / year or 31.27 kg / Ha (Haryono, 2018).

Collection of traditional or fragrant root oils is generally carried out by the steam distillation (distillation) method. This method has the potential to reduce the quality of fragrant root oil produced as a result of high heating or burning during the refining process which causes scorched scents and dark colors in the oil, so that its economic value is relatively low because it does not meet export quality standards. Indonesia is one of the largest producers of fragrant root oil in the world, the center of producing fragrant root oil in Indonesia is located in Garut Regency.

From the distillation process, this essential oil produces fragrant root solid waste that has no aroma, usually just left to accumulate, thrown away or used as fuel for the refining process. If fragrant root waste can be utilized, it will improve alternative ways to treat fragrant root waste in Indonesia, especially in the Garut environment, but it can
also increase the functional value and sale value of the fragrant root waste itself. Based on three previous research conducted by the Bogor Institute of Agriculture, fragrant root waste can be reprocessed into something more useful. In a research conducted by Rahmawaty Fitri in 2000 produced particles made from fragrant root waste using the press technique, then in research conducted by Galuh Suprobo, et al in 2013 can make pots that are strong, lightweight, and environmentally friendly by using waste scented roots are combined with sand and cement. The next research was coming from Bandung Institute of Technology Students conducted by Lili Melani, et al in 2015 in making Anti-Microbial paper from fragrant root waste.

Fragrant root waste has the potential to be reprocessed into functional products, using weaving techniques. Fragrant root waste can be processed into weft weft, because this fragrant root waste is a staple fiber (short fiber), which has a strength and durability that is strong enough at its roots. Hundreds of fragrant root craft collections made unique and different. His form starts from key chains, bags, tablecloths, prayer mats, to accessories to beautify other household equipment (Supriadin, 2018). So the fragrant root waste will be processed into textile sheets, then applied to secondary product needs, namely bags and souvenirs. Therefore, the authors utilize web-based information technology to design information systems for ordering and promotion of secondary needs, namely bags and souvenirs typical of Garut, so that all limitations on facilities, distance and time can be overcome easily. Each item of secondary needs product such as a bag and a typical souvenir from Garut is described in detail with text and images. Consumers can order online easily and quickly without having to come to Garut.

LITERATURE REVIEW

E-business can be translated as business activities carried out automatically and semi-automatically by using a computer information system (Ramli, 2019a). The term that was first introduced by Lou Gerstner, a CEO of this IBM company, is now a form of business activity carried out using Internet technology. E-business allows a company to deal with their internal and external data processing systems more efficiently and flexibly (Kurniawan, 2018). E-business is a business activity that is carried out automatically by utilizing computer networks and internet technology. E-business
allows a company to deal with data processing systems both internal and external to be more efficient and flexible. This (Sisil, 2017).

Fragrant root plants are chronic grass plants that form large, dense clumps with directions that grow perpendicular, compact, flavorful, branched, have rhizomes and a deep root system. Clumps grow to reach 1-1.5 m in height, 2-8 mm in diameter. Leaf-shaped, 6 flat, rigid and slippery under surface. Inflorescence of panicle (compound bunches) terminals, each cluster has a length of up to 10 cm; segment formed between bunches and flower stalks in the form of threads, but at the apex looks thickened (cahyadi, 2017). This plant is one of the plants producing essential oils commonly called vetiver oil. This oil is widely used in the manufacture of perfumes, cosmetics, perfuming soaps, medicines, and insecticides and deterrents. Vetiver oil has a soft and delicate aroma due to esters of vetinenic acid and the presence of vetivenol compounds (Department of Agriculture, 1989).

The definition of craft is a work of art whose manufacturing process uses human hand skills. Usually the results of a craft can produce something beautiful and beautiful, with a touch of high art and objects ready to use (Azqiara, 2019). Craft is a product of art that goes through the stages of the manufacturing process using the sense of human touch or human hands. The results of people who have hand skills will have works of art that have extraordinary beauty, the results of handicrafts that have the value of this art can also be used for human needs, the form of handicrafts that can be used is decoration. The definition of Kadim (2011) which says that craft is a business that is carried out constantly with perseverance, perseverance, workmanship, high dedication, and has the fighting power to advance in making a work.

Understanding craft as one of the sub-sectors in the creative economy is important, because craft is based on the idea of one's creative power of knowledge, cultural heritage, and also the technology he knows. For the craft itself, make creativity based on culture. Craft making can produce outputs from individual creativity, expertise, and talent to produce added value, employment, and also a better quality of life, so crafts can be obtained from creative crafts. Where craft will have an important role in the creative economy because it is able to move other related sectors (Haryo Aswicahyono, 2015) There are several kinds of craft art, one of which is the art of handicraft, a branch of work that prioritizes the skills of the hand by making objects. Crafts with hands include borders, lace, folding art, and art that emphasizes the skill of
the hands. The results of the handicraft are very numerous and not a few artists have succeeded in becoming successful artists who have made their works with very good and then marketed.

Sales is an integrated effort to develop strategic plans (Mariam and Ramli, 2019), that are directed at satisfying the needs and wants of buyers (Imran and Ramli, 2019), in order to get sales that generate profits (Marwan, 1991). Sales can also be called an integrated effort to develop a strategic plan that is directed at satisfying the needs and desires of buyers in order to get sales that generate profits (Ramli and Mariam, 2020; Armanda, Basri, Kusnadi and Ramli, 2020). Sales are also a source of life for a company (Nur Fatin, 2017).

Web server is software that provides data services that have the function of receiving HTTP (Hyper Text Transfer Protocol) or HTTPS requests sent by clients through a web browser and sending the results back in the form of web pages that are generally in the form of HTML (Hyper Text Markup Language) documents. Abdullah (2015: 1) The Web can be interpreted as a set of pages consisting of several pages containing information in the form of digital data in the form of text, images, video, audio, and other animation provided through internet connection lines. Meanwhile, according to the Website is defined as a collection of pages that display information on text data, image data, animated data, sound, video and a combination of all, both static and dynamic that form a series of interrelated buildings, each of which is connected to the network-page network (Agus Hariyanto, 2015). According to Rohi Abdulloh (2015) the web is: "A collection of pages consisting of several pages containing information in the form of digital data in the form of text, images, video, audio, and other animation provided through internet connection lines". Based on the description, the authors conclude that the web is a software that functions to display documents on a web that allows users to access the internet through software that is connected to the internet with various pages in it.

PHP or short for Hyper Text Preprocessor is an open source programming language that is very suitable or devoted to web development and can be embedded in an HTML thesis. The PHP language can be said to describe several programming languages such as C, Java, and Perl and is easy to learn. PHP is a server side scripting language, where data processing is done on the server side. Simply put, the server will translate the program script, then the results will be sent to the client making the
Another understanding of PHP is the acronym of Hypertext Preprocessor, which is a programming language based on codes (scripts) used to process a data and send it back to the web browser into HTML code. Kustiyaningsih (2011), "PHP (or officially PHP: Hypertext Preprocessor) is a server side script added to HTML". In principle, the server will work if there is a request from the client. In this case the client uses PHP codes to send requests to the server. The working system of PHP starts with a request originating from a web page by the browser. Based on the URL or website address in the internet network, the browser will find an address from the webserver, identify the desired page, and convey all information needed by the webserver. Then the webserver will find the requested file and display its contents in the browser. The browser that gets the contents immediately translates the HTML code and displays it. Then what if the user is calling a page that contains a PHP script? The principle is the same as calling an HTML code, but when a request is sent to the web-server, the web-server will check the file type that the user requested. If the requested file type is PHP, it will check the contents of the script from the PHP page.

**RESEARCH METHODS**

Data collection methods used in this research, namely:

**Observation and interview**
Conducting observations with field studies to one of the centers of fragrant roots and oil refineries in Garut, West Java. Besides conducting interviews with residents who cultivate fragrant roots.

**Literature study**
Collecting data and information through literature study, by reading references from journals written by Suprobo, et al in 2013 from the Bandung Institute of Technology with the title research on processing scorched root waste processing which is processed into pots that are light and environmentally friendly using fragrant root waste combined with sand and cement.

**Experiments**
Conducting various experiments on fragrant root waste to be used as raw material for making a product, by conducting initial exploration processes such as fiber separation, scouring, bleaching, which is then followed by continued exploration and selected exploration to become a product.
System development method that is as a research method applied in this research is the development of the waterfall method. The waterfall method is a systematic and sequential model of information system development. The Waterfall method has the following stages:

**Requirements analysis and definition**
System services, constraints, and goals are determined by the results of consultations with users who are then defined in detail and function as system specifications.

**System and software design**
The system design stage allocates system requirements both hardware and software by forming the overall system architecture. Software design involves identifying and describing the software system's basic abstraction and its relationships.

**Implementation and unit testing**
At this stage, software design is realized as a series of programs or program units. Testing involves verifying that each unit meets its specifications.

**Integration and system testing**
The individual units of the program or program are combined and tested as a complete system to ascertain whether it matches the software requirements or not. After testing, the software can be sent to the customer.

**Operation and maintenance**
Usually (although not always), this stage is the longest stage. The system is installed and used significantly.

**Picture 1.1: Waterfall method**
The analysis in this research is to use a SWOT analysis, where this method shows the company's performance by determining the combination of internal and external factors. SWOT Analysis SWOT Theory (Strengths-Weaknesses-Opportunities-Threats) according to Wheelen and Hunger (2012: 16) is a step to be able to identify internal and external factors that influence the achievement of organizational goals. The external environment contains the opportunity and threat variables (opportunities and threats) that are outside the organization and are not things that can be controlled by the leadership of the organization in the near term. The internal environment of the organization consists of strength and weakness variables (strengths and weaknesses) that are within the body of the organization itself and are usually not in the control of the organization's leadership in the near future. Included in this variable are the structure, culture, and organizational resources.

**Picture 1.2: SWOT Analysis Diagram**

![SWOT Analysis Diagram](image)

In this fragrant root handicraft product, SWOT analysis is needed, this SWOT method is carried out in order to find out how strong the fragrant root product is, what are its weaknesses, opportunities and obstacles that will be faced in producing the fragrant root, and provide a way out for the problems faced, then the SWOT analysis will get are:

**Strength**
Using quality raw materials so as to produce good and good products. Products made are very attractive, unique, functional and fashionable. Many products are made and manufactured so many choices. Many have government awards.
Products made durable.

**Weaknesses**

Products marketed have not been widespread and evenly distributed.

Lack of information given to the public.

The affordability of media and product marketing venues.

Lack of community response to the craft of Wangi Root.

Expensive.

**Opportunities**

Liked the community because of its uniqueness.

Can improve the economy of the people of Garut Regency.

With so many types of products made can have the opportunity to dominate the market.

The product is durable and not easily damaged.

**Threats**

Lack of positive response from the community.

Lack of public knowledge about the benefits of Wangi Root to be made as a unique and interesting craft.

People who understand how to process fragrant roots into a craft.

After knowing the SWOT of the Fragrant Root handicraft products, the following strategies were obtained:

**Table 1.1: SWOT Analysis**

| Opportunities | Strength (SO)                                                                 | Weaknesses (WO)                                                                 |
|---------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
|               | 1. Utilizing social media such as Facebook and others as a means of promotion to attract more people’s interest to buy products and control the market. | 1. Creating product innovations to attract public interest and create information for the community. |
|               | 2. Increasing the type and uniqueness of the products produced.               | 2. Increase the type and uniqueness of the products produced and market them to various shops that sell crafts. |
| Threats       | ST                                                                           | WT                                                                            |
|               | 1. Improve the quality of Wangi Root products so that they can be known by many people. | 1. Give information to the public about the benefits of Wangi Root. |
|               | 2. Create social media content for marketing and web sites as information media. | 2. Increase the correlation to spread the fragrant root crafts. |
Table 1.2: Hardware Requirements

| No. | Hardware Type | Specification |
|-----|---------------|---------------|
| 1.  | Processor     | Intel Core i5 |
| 2.  | Hardisk       | 1T            |
| 3.  | Ram           | 4 Gb          |

Table 1.3: Software Requirements

| No. | Software Type    | Specification         |
|-----|------------------|-----------------------|
| 1.  | Operating System | Windows 10, 64 bit    |
| 2.  | Software Support | Xampp 7.3.6           |
| 3.  | Text Editor      | Sublime               |
| 4.  | Browser          | Google Chrome         |
| 5.  | Drawing Program  | Adobe Illustrator CC 2019 |

System Planning

System Design in e-business applications, secondary needs such as bags and souvenirs aims to provide an overview to identify the components to be designed. The system design stage is generally carried out after the analysis phase is completed:

**ERD (Entity Relationship Diagram)**

ERD is a conceptual model that describes the relationship between data storage. The E-R diagram is used to model data structures and relationships between data.

**Picture 1.3: ERD Model**

**Picture 1.4: Context Diagram**
**Picture 1.5: Relationships Between Tables**

```
Customer
- Name
- Gender
- Address
- City
- Postalcode
- Email
- PhoneNumber

Product
- Product Code
- Product Name
- Types Of Products
- Price

Address
- Address_id
- Address_name
- Postal_fee

The order
- Order_No
- Date_order
- Hour

Message
- Order_id
- No Message
- Product_id
- amount
```

**Web Page Design**

**Picture 1.5: Login Page Des**

![Login Page Design](image-url)
CONCLUSION

Based on the results of research and discussion conducted regarding the sale of secondary needs such as bags and souvenirs made from basic ingredients of fragrant roots, the authors draw the following conclusions:

1. From the results of the design can be done making E-Business application systems and system identification systems requirements include system design, database design and web interface design.

2. With this website, it is expected that the sales of fragrant root crafts can increase and become more well-known so that it is in demand by many people outside of Garut or the world.

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