The model of eco-friendly packaging center to increase the competitiveness of MSMEs’ local products

Y Suherlan$^{1,2}$ and E Widiyanti$^{2,3}$

$^1$Faculty of Art and Design, Sebelas Maret University, Surakarta, Indonesia
$^2$Study Center for Cooperative and MSME Assistance, Sebelas Maret University, Surakarta, Indonesia
$^3$Faculty of Agriculture, Sebelas Maret University, Surakarta, Indonesia

Corresponding author: yayansrm@gmail.com

Abstract. Packaging problem is still a weak point for Micro Small Medium Enterprises (MSMEs). This is due to the lack of understanding of MSME about the importance of image, quality, and packaging appearance. This research is a solution to increase the competitiveness of local MSME products in the global market with a focus on the study to identify the internal and external factors that affect eco-friendly packaging for MSMEs, formulate a strategy to develop a packaging center, and create a model for environmentally friendly packaging development center for processed food MSME products. The Model of Eco-Friendly Packaging Center is an effort to increase the competitiveness of local MSMEs that provide services as an information center for packaging activities, a packaging material procurement center, an eco-friendly product packaging service center, a graphic design mediator and packaging form design, and branding.

1. Introduction

The improve the productivity in MSMEs will have a broad impact on improving people's welfare because MSMEs are places where many people depend for their livelihoods. One alternative to increase the productivity of MSMEs is to modernize the business system and its systemic policy tools, so that it will have wider impact in increasing regional competitiveness.

The basic thing that all stakeholders in Indonesia must pay attention to, especially MSME entrepreneurs, is the importance of changing perspectives in responding to emerging competition. The competition from outside is no longer considered a threat, but as an opportunity to improve themselves to be better, because the key to win in a free market is competitiveness. To increase the resilience and competitiveness in facing the global market, it is necessary to empower MSMEs to apply management principles, modern economic principles, and product development.

The rise of processed food MSMEs in Solo Raya indicates that the market competition is getting tighter. Most MSMEs are not aware of the importance of product quality and presentation to win the market competition, as a result, the products marketed tend to be ordinary and very common, which has no difference from the competitors' products, especially in product packaging. The problem of packaging is still a weak point for MSMEs, especially those that engaged in food and beverage processing. The problem of the low awareness of the importance of packaging is due to the limited understanding of MSME actors on the importance of the quality and appearance of packaging and the
limited packaging service facilities that can increase the competitiveness of MSME products and are affordable by MSMEs in the Solo Raya area [1].

Until now, the number of packaging houses that are oriented towards the environment is still limited, not in accordance with the number of MSMEs in Indonesia just yet. In Central Java, there is only one packaging development center under the Department of Industry and Commerce of Central Java Province (Semarang). Likewise, in Indonesia, there are only four packaging houses for MSMEs, namely in Bandung, Semarang, Denpasar, and Jakarta. The fact states that the limited number of packaging houses that support the creative food and beverage industry causes the slow growth of the creative industry to penetrate in the global market.

There are several opinions about packaging, first; packaging is the activity of designing and producing a container or wrapper as a product [2]. Hermawan Kartajaya, an expert in marketing, said that technology has changed the function of packaging. In the past, people said that packaging protects what it sells, now, packaging sells what it protects [3]. In other words, packaging is no longer a protector or a container, but it should be able to sell the product itself. Therefore, packaging is an activity of designing and producing a package of an item, which includes the design of the package and the manufacture of product packaging. Broadly, packaging design can be interpreted as a design for packaging on a particular product which is carried out as an effort to increase production needs that support product marketing.

In the modern era, packaging issue is an important part of the food business product [4]. The scope of packaging involves several issues, from materials to models or forms and packaging technology. The form and technology of packaging also varies, including bottles, cans, tetrapack, corrugated boxes, vacuum packaging, aseptic packaging, pressure cans, tube packaging, to active and intelligent packaging that can adapt to environmental conditions in the packaging, according to the needs of the packaged product [5]. The arrangement of packaging construction is also increasingly complex from the primary, secondary, to tertiary levels, until the construction can no longer be separated between its function as packaging or as a storage unit.

The good packaging is packaging that can keep the contents of the product from weather and other natural processes [6]. Packaging is also used as a container so that the contents are easy to carry. In addition, packaging must be able to communicate, which describes and reflects the product, image, or brand that is an integral part of promotion and marketing, with considerations that are easy to recognize, see and understand.

The attractiveness of a package is very important to attract consumer’s interest and influence their actions, both consciously and unconsciously. In addition, the design of an optimal packaging should be able to give a spontaneous and direct impression on the actions of consumers at the point of sale, because the goal of packaging design is to create sales [7]. Packaging has two appeals, visual appeal, and physical appeal. Visual appeal refers to the appearance of product packaging that includes various graphic elements, including colors, illustrations, text, and layouts, while physical appeal is the effectiveness and efficiency of a packaging that aims to consumers, distributors, including storage and display [8].

Packaging design has five functional principles, first, the packaging as a wrapper which contains the identity of the product type and its use. Second, physical packaging, which is the packaging that functioned as a product protector from impact, friction, shock, and others, so the strength of the material becomes the main principle. Third, the packaging that is convenient to use, meaning that it can provide a comfortable feeling when touched, the surface doesn’t hurt, flexible when gripped, easy to clean, store, and stable when placed. Recyclable packaging is a priority. Fourth, packaging that can display the product image and market segmentation of its users. It involves many elements, especially those that related to the user's imagination, taste, and fantasy. The packaging here translates who uses it, what is their social status, where and how the product is used. Uniqueness is the main priority. Fifth, packaging that has the principle of supporting environmental harmony. Good packaging is easily recycled into new and uncontaminated products and can be melted down and remade into products [9].
In general, this research aims to develop eco-friendly packaging and pioneer the Eco-Friendly Packaging Development Center that can increase the competitiveness of processed food MSME products in Central Java, with the following specific objectives:

a. Identifying internal and external factors in the development of eco-friendly packaging centers for processed food MSME products
b. Formulate a packaging development center strategy
c. Formulate a model for the development center of eco-friendly packaging for MSME’s processed food products.

The existence of the eco-friendly packaging house, especially processed food products, is expected to be useful for poverty alleviation programs, where the existence of this center will be able to support increasing the competitiveness of MSME products, so they can compete in the global market which will increase the income of MSME actors.

2. Research methods
This research is action research, covering several stages from need assessment to modeling, with the stages showed in Figure 1.

![Figure 1. Research framework.](image)

3. Results and discussion

3.1. Eco-friendly packaging house model
The idea of using eco-friendly packaging has been more developed in western countries. The use of eco-friendly packaging has finally become an alternative in global business competition. In addition, the use of eco-friendly packaging is a necessity that must be applied by every industrial player in Indonesia considering that currently the world is being enlivened by issues regarding the dangers of waste originating from product waste, especially plastic waste.

This is what underlies the design of an eco-friendly packaging house model. From the results of the analysis in the field, a model of an eco-friendly packaging house was developed with the name GRIYA KEMASAN SOLO (GKS). The “Griya Paket Solo” (GKS) packaging house responds to the “go green” issue by applying the concept of environmentally friendly packaging, especially for food and beverage products produced by local MSMEs. GKS is a packaging house concept that was formed based on concerns about the existence of MSMEs during the onslaught of foreign products that dominate the market in Indonesia. So far, local products have only been able to compete in the lower-middle consumer segment. As a result, the existence of MSMEs, especially food and beverage products, cannot develop significantly.
From the research that has been carried out, it shows that the exclusion of local products in the market is caused by several factors, including production quality, visual quality of packaging, and the trust of potential consumers to the product is very low, because there is no guarantee of safety and comfort for potential consumers, for example halal assurance, production code, security guarantee for health from BPOM. This is what causes the image of local food and beverage products to be very low.

Griya Kemasan Solo has visions and missions to develop MSMEs through eco-friendly packaging and at the same time become a facilitator of legalization and certification of local products to be able to compete in the global market. The target consumers of the Packaging House are prioritized for Micro, Small, and Medium Enterprises, to increase product competitiveness through good packaging. In carrying out services, the packaging house must cooperate with the Government, especially the Department of Industry and Trade, and the Department of Cooperatives.

3.1. Form of service
a). Packaging Information and Consultation Unit
   1) Packaging Consultation, covering information on packaging materials according to the product, packaging tools and machines and packaging materials, consultation on packaging rules and regulations, consultation on licensing and certification
   2) Business and Enterprise Development Consultancy, including consultation on market expansion and strategy development, product development, capital, production facilities, and market access consulting
b). The Packaging Design Service Unit includes product packaging design, graphic design, and packaging graphics, as well as promotional media.
c). Packing and Packaging Production Services Unit, covering the production of various types and packaging materials,
d). Packaging Training Services Unit as Resource Person/Trainer includes training on: knowledge of packaging and its regulations, licensing, design and printing, as well as training on packaging manufacture with simple and automated technology.

3.1.2. Packaging house service users. According to the initial concept of establishment, that the packaging house services are prioritized for Micro, Small and Medium Enterprises (MSMEs) for processed food and beverage products. However, packaging houses can also provide packaging services and assistance for anyone who needs these services, including industry and business groups, prospective entrepreneurs, and students as study/internship materials.

3.1.3. Institutions. The center for the development of eco-friendly packaging is designed based on the needs of MSMEs and related institutions in Solo Raya, based on direct research data analysis. In order that the management can run effectively and efficiently, so that the vision, mission, and objectives can be achieved in an organized and structured manner. Likewise, the institutional form is adjusted to the conditions of the location (service area).

The GKS packaged house is designed institutionally under the auspices of the Center for Cooperative and MSME Assistance Studies, the Institute for Research and Community Service, Universitas Sebelas Maret (PSP-KUMKM LPPM UNS) Surakarta. The position of the packaging house is in the PSP-KUMKM Business Service work unit. The form of the institutional organization is adjusted to the existing needs and conditions, although it still refers to the ideal standard of the company's institutions.

3.1.4. Cooperation network. To maximize the function of the packaging house, a network system of cooperation with various interested parties is very important for the packaging house. Cooperation is carried out to complete an integrated series of activities. Parties that allow for coordination are local governments, MSMEs/IKM, packaging materials industry, printing industry, packaging equipment/machinery provider industry, Indonesian Advertising Association, Indonesian Packaging Federation, and institutions/ agencies that issue ratifications and permits (Figure 2).
Figure 2. Cooperation network chart.

Coordinate with local governments, specifically in terms of the establishment of packaging houses, starting from licensing to regulations or policies for packaging houses. To complete the facilities and infrastructure of the packaging house, it is necessary to coordinate with the packaging material and equipment industry, as well as the printing industry after the establishment of the packaging house. At the stage of establishing a packaging house, it is important to coordinate with licensing and packaging agencies/institutions/agencies. The coordination network with stakeholders and product legalization continues to facilitate MSMEs as GKS clients in terms of business licenses, BPOM certification, and halal certification.

3.1.5. Facilities and infrastructure. The facilities and infrastructure needed by the packaging house include strategic and representative buildings/spaces, office supplies, packaging materials, and machines/tools packaging. In the first year of establishment, the facilities and infrastructure of the packaged house were adjusted to financial capacity and employment ratio. Thus, the addition of tools and improvements to facilities and infrastructure are carried out in stages.

To serve packaging orders with packaging specifications beyond the capabilities of GKS, GKS cooperates with the packaging and printing industry as designed in an institutional, cooperative network. Procurement of tools and materials in specifications and in large quantities is carried out periodically according to the ability of GKS. Nevertheless, GKS has a grand design in the development of a packaging house, which is the target of producing packaging independently in the fifth year.

3.2. Packaging product

It is ideal if the packaging is designed not only as a protector or a container but also as a promotional tool for the product. The basics of packaging design consider various factors, which are: safety factors, economic factors, distribution factors, communication factors, ergonomics factors, aesthetic factors, identity factors, promotion factors, and environmental factors.

The attractiveness of packaging lies in visual appeal and practical appeal. The visual appeal as the appearance of the packaging includes graphic elements to create an impression, while the practical appeal lies in the effectiveness and efficiency of a packaging for consumers and distributors. Wherever possible, packaging is made to look attractive to attract the attention of potential consumers. For this reason, creative strategy is the concept and application of packaging design based on data that has been obtained from research results in all aspects of marketing to maximize visual appeal.

Packaging is not the only factor that caused the decline in product sales, but it is better to maintain the image of the product, it is necessary to re-analyze the packaging design on a regular basis. None of the packaging designs can last forever because at some point in time, the packaging design needs to be updated. A packaging that initially looks attractive and liked by many people suddenly in a certain period will look outdated, which could kill sales. The causes are social conditions and consumer lifestyles,
developments in packaging technology, the emergence of competitors with better and trendy packaging, and various conditions that develop from time to time.

Innovation in packaging needs to be done while retaining some of the old elements. The goal is that consumers do not see a different product in the new packaging. Consumers still recognize that the product is the same product, but with a new face and appearance.

Packaging must be able to attract attention visually, emotionally, and rationally. A good packaging design provides an added value to the product it packs. For this reason, the graphic elements of the packaging are the visual elements that have the biggest role in the process of delivering messages in plain view (visual communication). To be successful, the appearance of a package must be attractive. The attractiveness of the packaging can be classified into two, which are visual appeal (aesthetics) and practical appeal (functional).

1. Visual appeal (aesthetics).
   Visual appeal is related to emotional and psychological factors that lie in the human subconscious. A good design must be able to influence consumers to give a positive response without realizing it.

2. Practical appeal (functional).
   Practical appeal is the effectiveness and efficiency of a packaging, i.e., the packaging must be able to protect the product, easy to open or close again for storage, the appropriate portion, can be reused (reusable), easy to carry or hold, and make it easier for users to finish the contents and refilling with the type of product that can be refilled.

3.3. Eco-friendly raw materials and packaging design
The use of eco-friendly packaging for food and beverage products has now also become an international trend. The idea of using eco-friendly packaging has already been developed in foreign circles. Eco-friendly packaging for MSMEs is an opportunity to develop and follow this trend so as not to be left out in global competition. The use of eco-friendly packaging is a necessity that must be applied by every industry player in Indonesia considering that currently the world is being enlivened by issues regarding the dangers of waste originating from product waste, especially plastic waste.

The development of eco-friendly packaging carried out in the packaging house is the use of biodegradable plastic. Biodegradable plastics are made from natural polymers or commonly called Polylactic Acid (PLA). Polylactic Acid (PLA) is produced through the process of fermenting sugar or starch by Lactobacillus into lactic acid which is further polymerized with the help of heat and metal catalysts into PLA. Polylactic Acid itself has heat resistance and strength and is an elastic polymer. PLA provides an alternative and a solution to the problem of waste in the environment and global warming that is happening today.

The advantages of biodegradable plastic are (1) eco-friendly packaging made of PLA will be much easier to be biodegraded. Thus, it reduces the possibility for environmental pollution, (2) eco-friendly packaging does not cause health problems (especially for food and cosmetic products) like plastic which is very dangerous for human health. (3) products that apply the eco-friendly packaging system will be a differentiating value your company among other companies (comparative advantage). It's just that biodegradable plastic (eco-friendly packaging) has a weakness, namely the unit price is more expensive than ordinary plastic or Styrofoam.

Due to the higher price of eco-friendly packaging compared to ordinary materials, it is likely that the eco-packaging program will face a few obstacles. To be able to encourage the use of eco-friendly packaging, this program needs encouragement from consumers and the government. For example, there is assistance from the government to transform the use of eco-friendly packaging by creating regulations that encourage businesspeople to use such packaging. Meanwhile, from the consumer side, the support needed is the interest in buying more products that use eco-friendly packaging.

Another alternative to the use of eco-friendly packaging materials is handmade product packaging, namely by using natural materials (bamboo, wood, and rattan), by affixing an attractive label on one side. The products that are packaged with these materials are food and beverage products, with the
segmentation of consumers being the upper middle class. In addition, products packaged in bamboo, wood, and rattan are projected to become food/beverage products that are typical of Solo.

Innovation in packaging needs to be done while retaining some of the old elements. The goal is that consumers do not see a different product in the new packaging. Consumers still recognize that the product is the same product, but with a new face and appearance.

4. Conclusion
The results of the study indicate that the condition of MSMEs in Solo Raya has not been able to be at the level of global market competition. Product visuals are the main thing that needs attention, both from market players, governments, and institutions that concentrate on developing MSMEs.

The use of eco-friendly packaging is a necessity that must be applied by every industrial player in Indonesia considering that the world is currently busy with issues regarding the dangers of waste originating from product waste. The eco-friendly packaging house model is a solution to the problems of the downturn of MSMEs during global market competition. Consulting services, mentoring, training, design, and packaging production are offered, mixed in a strategic and model. For the sustainability of the packaged house program, a serious handling is needed, and collaboration with various stakeholders and capital is needed.

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