Advances in Social Science, Education and Humanities Research, volume 397
3rd International Conference on Learning Innovation and Quality Education (ICLIQE 2019)

The Development of Tools for Designing the Local Characteristic Food Packaging Based on Digital Applications as an Attempt to Accelerate Education

Monica Hartanti[1], Nina Nurviana[2*], Christine Claudia Lukman[3]

[1]Maranatha Christian University

[1] monica26hartanti@gmail.com, [2*] ninanurviana16@gmail.com, [3] christineclaudialukman@gmail.com

Abstract: Different varieties of local community products have sprung up, one of which is a food souvenir. The souvenirs certainly require a proper packaging design. Thus, the government has provided several facilities to cater to the needs. However, there is still a problem concerning the limited number of facilitators to keep up with the fast-growing number of MSME businesspeople, which hampers education for them. This further results in the packaging design of existing MSME products, despite having been functional, non-conceptual, still looks 'me-too' and does not reflect the local characteristics. In the era of digital product marketing, a packaging design that functions as a promotional tool and a cultural ambassador must be the one that is creative and promotes locality simultaneously. To materialize the goal, it is necessary to accelerate further education for MSME businesspeople on how to design their product packaging designs appropriately using independent learning methods and based on digital applications. In this particular research, two research methods, namely observation, and FGD, are utilized. In addition, traditional transformation methods, namely ATUMICS and the design process theory to design the features of digital applications, are applied. This digital simulation application will hopefully be useful to accelerate the education of packaging design for MSME businesspeople, so that in the future, the packaging design of West Java food products can be more conceptualized, customized and creative with a strong local identity

Keywords: *acceleration of education, digital application simulation, food souvenirs, MSMEs, packaging design*

INTRODUCTION

Tourism has a positive impact on economic growth; this has long been recognized by the world. (Chou,2013). At present, the tourism industry in Indonesia is growing fast. During a busy life, people who live in big cities took the time to travel even for a moment. Previously traveling meant going to visit a place and staying for a while in that place; it can produce opinions for the area or not (Vanhove in Holik, 2016). Currently, traveling can be done with other activities not only for fun, can while doing business, and also while studying. This shows that the higher the opportunity for tourists to make money for each area visited. (Holik,2016).

Each region must have a culture that can be utilized to become potential tourism so that it can improve the economy of the neighborhood (Mastisia in Holik, 2016). Food is one of the cultural products of an area. Eating is a symbolic act, by devouring 'local food' we devour another culture or geographical location to incorporate it into our own identity (Bell and Valentine in Gyimothy & Mykletun, 2009). The local food is often a souvenir that is sought after while traveling and also visiting a place.

Food souvenirs become one of the links of tourism indirectly able to improve the economy of industry players in the scope of small and medium enterprises (MSMEs). MSME products already circulating in the market have modern packaging designs. However, they have shown neither local characters nor the identity of the origin of the food.

Therefore, the government has made educational efforts by providing facilities, one of which is through the Mobile Packaging Clinic at the level of Department of Industry and Commerce. However, the problem occurs on the limited number of facilitators unable to catch up with the rapid increase in the number of MSME businessmen. When designing UMKM product packaging designs, the facilitator only bases himself/herself on the internet references without thinking about the design concept. This is what makes the existing packaging design look 'me too' and not conceptualized. The motivation for creating the design is simply for economic gains.

However, the material deliveries of the facilitators of the Mobile Packaging Clinic Submission are inclined to be relatively slow. Thus far, the education having been delivered is still limited, from a simple packaging training to the licensing for standardization of functional packaging. It has not yet discussed how to design conceptual packaging designs with a strong locality.

I In an enormous scope, Kemenprin targets that by the end of 2019, eight million MSMEs will have transformed based on digital technology applications. The government has also facilitated Indonesian MSMEs with E-smart, which helps to expand the marketing distribution of its products with digital systems. So that MSME products can have the opportunity to be bought by anyone, anywhere, and anytime. Until 2018 5,945 SMIs from all over Indonesia participated in the E-smart program and resulted in a transaction value of Rp. 1.3 billion, up 773 percent from the previous year's transaction value of only Rp 168 million. (Mansur, 2019)

This further reinforces the needs of MSME producers to have creative packaging designs which are locally attractive for their products. As far as the packaging design is concerned, it does not function only as a promotional tool but also as cultural ambassadors. And yet, it is desirable that its materialization not merely depends on the facilitators provided by the government.

Related to packaging designs, the customized designs with a strong local identity are forms of valuable creativity, which will be of great benefit to MSME products if compared to large industries. Therefore, the products made need to be designed and also displayed on a custom basis. This is very likely to materialize with the support of a community that is continuously growing, adjusting, and creating new things. (Hidayat, 2009).

To overcome the aforementioned problems, a certain tool is needed as an attempt to accelerate education to make a product packaging design at the MSME level. It is done through the learning methods which can be conducted independently and based on digital applications. The advantage of this learning method is to create a direct interaction between users and technology that can be utilized in the way that the user wants. If this digital application can be operated according to its function, it will give a positive experience. (Norman in Agustine, 2019). The urgent need of applying the digital application is because currently the number of internet users in Indonesia have reached 143.26 million people with 56.68% penetration, and internet networks have been accessed by those residing in urban, rural-urban areas and even rural areas. (Agustine, 2019) Also though digital literacy has not been evenly distributed among the Indonesians, the particular digital application will be an initiation to deliver education faster than what is available presently.

Through this digital-based education, it is expected that the MSME producers can design their packaging designs with customized visuals that are creative and reflect the local identity. The packaging design to be produced by MSME producers in the future is not to go back to traditional. Instead, it prioritizes efforts to modernize packaging design with the spirit of the local culture that goes along with the current technological developments.

METHOD

The research method applied to design this digital simulation is Observation and Focus Group Discussion (FGD). Observation is conducted by visiting the Department of Industry and Commerce in Bandung Regency and the Mobile Packaging Clinic. The FGD is conducted by involving 16 respondents comprising nine men and seven women. Their age is in the range of 15-28 years as many as five people, and those of 29-65 as many as 11 people. The profiles of the respondents are as follows: 1 high school student, two tourism students, two employees, one packaging designer, one craft designer, one printing entrepreneur, one lecturer of Visual Communication Design, three civil servants and 4 MSME businesspeople. Also, a similar project study is carried out by observing similar existing applications. The design of this digital applications is supported by literature studies on ATUMICS tradition transformation method theory, design process theory and UI, UX theory.

A Method of Transforming Traditions – ATUMICS

This method is a method for transforming the traditional culture into the form of modern new products. The word 'transformation' comes from a process of reshaping, modifying, or converting in a variety of manifestations. This method views an artifact, object, or product as having two main levels of existence, namely micro level and macro level. The micro-level consists of Techniques - production techniques, technology, skills, tools. Utility - functionality, usability - demand, needs. Material - natural ingredients, synthetic materials, smart materials. Icon - image, ornamentation, color, graphics. Concept - customs, beliefs, norms, values. Shape - shape, structure, size, gestalt. At the Macro Level, an artifact is seen as a consequence and motivated by aspects: self-expression, survival, culture, social, economy, and ecology, all of which are connected. The overall structure of the ATUMICS method, along with its essential elements and six aspects of motivation, is influenced by the model proposed by Victor Papanek, Pirkko Anttila, Ahadiat Joedawinata, and Rebecca Reubens. (Nugraha, 2012).

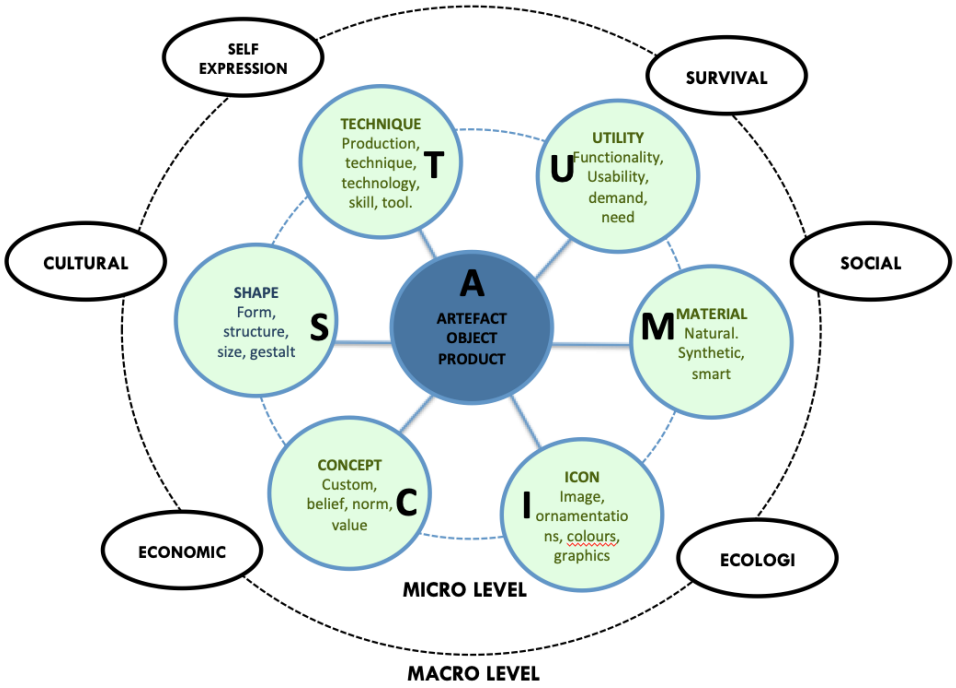

Figure 1. ATUMICS Method (Nugraha, 2012).

B Process of Designing a Design

When a designer creates some project, a design phase is required. This needs to be done to produce good design and certainly has a concept. Ideally, the process of designing is always carried out in linear stages. According to Safanayong, the design process consists of seven stages. They are: (1) Inspiration; (2) Identification; (3) Conceptualization; (4) Exploration/Refinement; (5) Definition/Dummy; (6) Communication; (7) Production. (Safanayong 2006: p. 56)

C User Interface (UI)

In the digital domain, UI is a place where users and interactive media interact by inputting and receiving output. Input is the way users communicate their needs or desires to the device, while the output is how the device informs the results of its work to meet the needs of the users. This input can be operated by pressing the button, typing, taking pictures, inserting audio, and the like. At UI, user and product interactions exist through visual elements on the screen. (Agustine 2019).

Table 1. Table of UI elements for mobile applications (Agustine 2019)

UI element mobile application (Neil, 2014)	*UI element mobile application (Cuello danVittone, 2013)*
• *Navigation*	• *OS Design Style (operating system)*
• *Forms*	• *Visual Identity*
• *Tables*	• *Icons and image launch*
• *Search, sort, and filter*	• *Grid*
• *Tools*	• *Typography*
• *Charts*	• *Presets*
• *Tutorial and Invitations*	• *Color*
• *Social Patterns*	• *Language*
• *Feedbacks and affordances*	• *Visual Details*
• *Help*	• *Animation*

The design of this digital application uses UI elements formulated by Cuello and Vittone (2013) and Neil (2014) because these two theories describe UI elements that focus on mobile apps.

D User Experience (UX)

User experience (UX) on digital media can be defined as ‘a combined experience of what is felt, thought about and reacts physically and mentally by the user; prior and in the course of using a product or service’. In designing UX, it is necessary to think of a holistic concept that does not only cover the visual, tactile, and auditory aspects of the system but also pays attention to the user context. UX will affect the response of users to the features of the application. This response is also influenced by several factors such as the user's internal conditions, the characteristics of the user, the product attributes, and the context of the interaction. The overall experience forms the meaning of a product that is unique and subjective. The most important thing is that it can produce a positive response. (Punchoojit, Hongwarittorrn, 2017).

UX is inseparable from Information Architecture or IA. IA is the organization of data so that users can find information or perform tasks in an information space, such as internet sites or

applications (Fling, 2009). Mobile IA has the role of interpreting all contents into the mobile context as simple as possible so that all content and application features can be found quickly and easily (Cuello and Vittone, 2013). (Agustine, 2019)

DISCUSSION AND RESULTS

In the FGD we previously explain to the participants about the transformation of traditions to be applied to the design of local MSME product packaging, especially food products so that it will create distinction in the product. Then we pose questions related to the design of MSME product packaging with points at the micro and macro levels on the transformation method of the ATUMICS tradition.

The obtained are as follows: The price of food products or souvenirs ranges from 15,000, - 35,000 IDR Some MSMEs have also developed a variety of products. Distribution of products of several MSMEs has reached the modern market, souvenir shops, online market places, airports and some have also been distributed outside the city. Some IKMs sell their products in various types of packaging on demand ranging from plastic packaging, plastic zipper, paper foil, with similar products, different prices.

MSMEs products are quite potential from their taste The materials used have competitive prices. MSME still focus on the economic side. They are still afraid of whether to raise their prices if the packaging is made better. They are still thinking about the economical side of packing for long distance shipping. Another obstacle is that if the MSMEs has a large order from a retail distributor, they must provide a very cheap price so that the packaging will only use labeled plastics. The packaging design is still very improvised and non conceptual. It has not used traditional materials, let alone new materials added by Augmented Reality technology. MSME is inspired when briefed that incorporating the element of locality will increase the value of its products.

In the FGD, the tourist/consumer representative selects food souvenirs influenced by price and emotional as well, like for whom he/she buys the souvenirs. They will buy souvenirs as gifts for certain people. However, if they buy in large quantities, they will buy things that are the affordable price. Nevertheless, designs with local geographical characteristics are more attractive to choose from even though they are merely applied in written.

Looking at some of the MSMEs products fostered by Department of Trade and Industry, the design of MSME food product packaging that has been circulating in the market today is quite interesting. It is modern and trendy and yet it does not yet have local characteristics/local geographical characteristics. When designing MSME product packaging designs, the facilitator is only based on internet references without thinking about the design concept. Submission of packaging design education material delivered by the Mobile Packaging Clinic facilitator is relatively slow. Until now, the education that has been imparted is still limited to simple packaging training up to licensing arrangements for functional standardization of packaging. It has not yet studied on how to design packaging designs with a locality. This is what makes the existing packaging design look "me too" and non-conceptual. The motivation in creating the design is only based on economic values.

Observing the results of the analysis of the data obtained, it can be summarized that MSME products have the potential to be marketed more broadly. The products will be better known as souvenirs typical of West Java if the packaging has a clear design concept and does not look "me too" as well as inserting the local and geographical characteristics. There is also a need for more intensive and independent education for MSME producers in particular and facilitators in

general. Therefore ,we need educational tools to design packaging designs independently and digitally as well.

The result of this study is concerned with the learning method for designing a creative packaging design with strong local characteristics using a digital packaging design simulation application. The target learners are not only the MSME producers but also the general public. Through this digital simulation, the application learners will be encouraged to come up with their product packaging independently. This digital simulation application is presented in a smartphone display format to make learners be able to customize their product packaging design personally. Learners will be guided directly through a linear and detailed design process by gradually selecting the features provided in the application.

This digital simulation application is named SIDIKEMAS (Simulasi Desain Kemasan). The features of SIDIKEMAS are designed utilizing the transformation method of the ATUMICS tradition and design process theory from Safanayong.

There have already been some similar packaging design digital simulation applications such as https://www.pack.ly/en, www.packlane.com. However, the features are not explicitly made to design packaging designs that have local Indonesian characteristics. They also do not have a visual response, and thus, users need to pay to use this application.

The advantages of the SIDIKEMAS application learning method are its easy operation and flexibility. It is said to be easy because learners only need tools such as cellphones and quotas. Also, learners can easily design the packaging designs independently by selecting the features that have been provided and can be chosen in stages. It is said to be flexible because SIDIKEMAS serves not only as a packaging design simulation application but also as a medium that can bring together MSMEs, the local Department of Industry and Commerce, higher education designers, producers of nature-made packaging materials and society in general. Higher education designers can take part in adding visual contents, which are regularly arranged. It is said to be flexible because, in the visual response feature, the learner can independently evaluate the design of the packaging based on the comments and input from 50 respondents. As a design facilitator, this application provides virtual consulting services through selected social media that can be managed by representatives from the local Department of Industry and Commerce. Furthermore, the development of digital simulation application is its connection with the printing industry to calculate its production costs.

The application of the ATUMICS method in designing digital simulation applications can be described as follows:

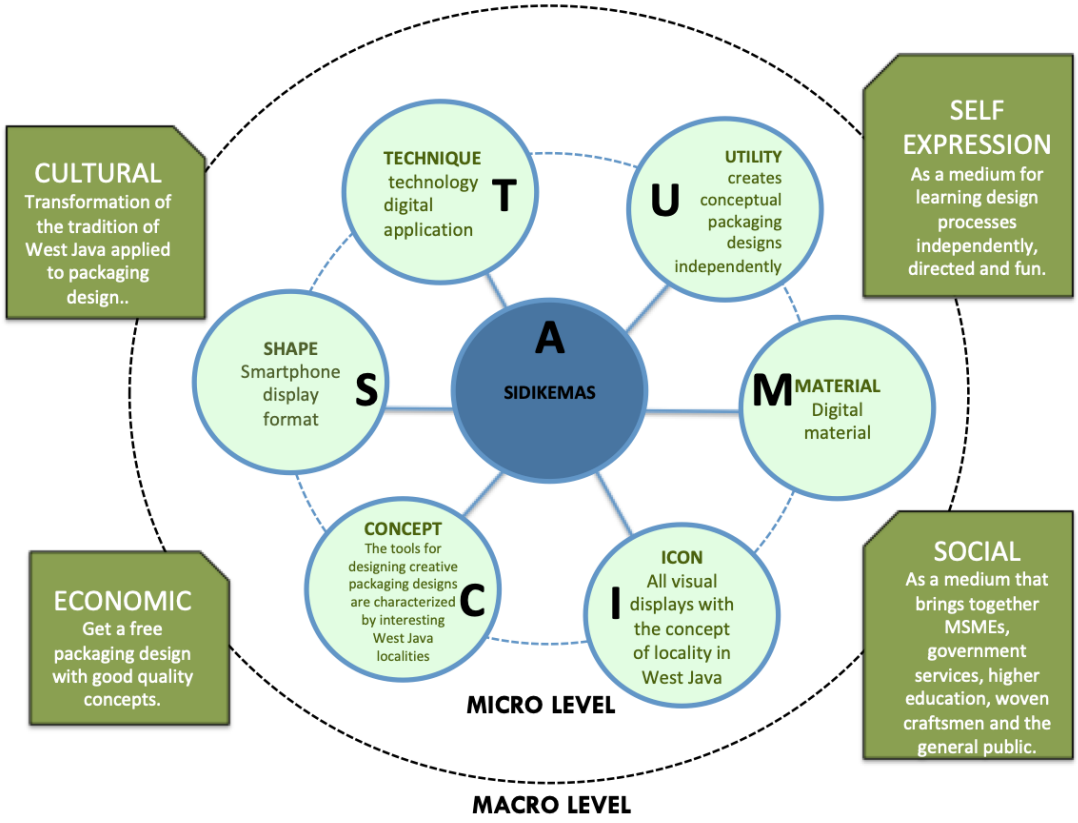

Figure 2. The application of the ATUMICS method in designing digital simulation applications

At SIDIKEMAS, there are seven features which cover Visual Reference (RV), Concept (C), Utility (U), Visual (V), Thumbnail (T), Design of Dummy (DD), Public Response (PR). This feature is adjusted from the design process, according to Safanayong. Through this feature, users are encouraged to learn to design packaging with the proper stages to make them be able to produce attractive and functional designs.

A Steps to Use SIDIKEMAS

The steps to use SIDIKEMAS are as follows: In stage 1, the learner chooses the Visual Reference (RV) feature. In this feature, learners will be shown examples of creative designs that are locally characterized as their visual reference before designing their packaging design that suits their products. In stage 2, they choose the Concept (C) feature, which contains a choice of traditional and modern concepts. In step 3, they choose the Utility (U) feature to select the form while determining the size of the product. In stage 4, the learners choose Visual (V) in the form of material and icons. In step 5, the Thumbnail (T) feature is displayed. There will be a display of features 3 and four selected after the learners have finished selecting the features provided. In stage 6, the Design of Dummy (DD) feature exists where learners can see the overall appearance of the packaging design that they design independently but are directed towards the description of the design concept. Stage 7 is the feature of Public Response (PR). The particular feature can request comments concerning the packaging design of a maximum number of 50 respondents.

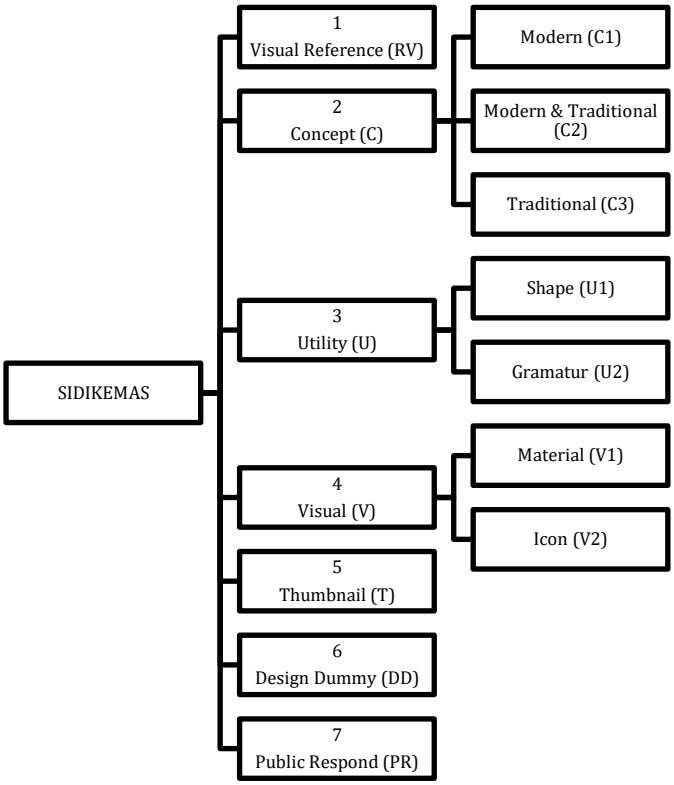

Figure 3. The application feature framework / IA SIDIKEMAS (Private documentation, 2018)

B User Interface of SIDIKEMAS (UI)

UI SIDIKEMAS is made very simple, predominantly white and green, and uses the Indonesian language. SIDIKEMAS stands for the "Simulasi Desain Kemasan" Digital Packaging Design Simulation. Below are a logogram and its logotype.

Figure 4. SIDIKEMAS Logo Design (Private Documentation, 2018)

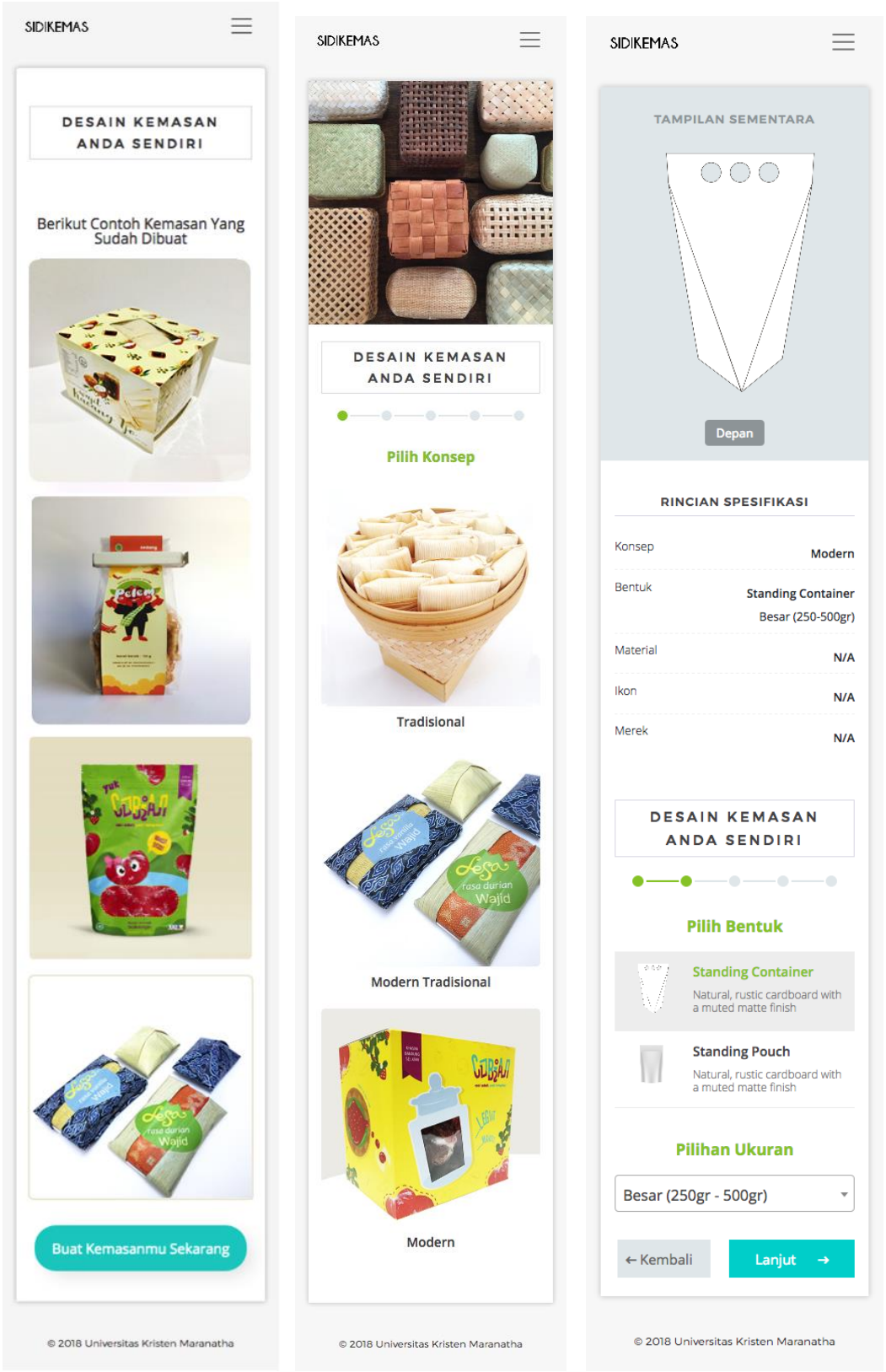

Figure 5. UI SIDIKEMAS Feature Design 1,2,3 (Private Documentation, 2018)

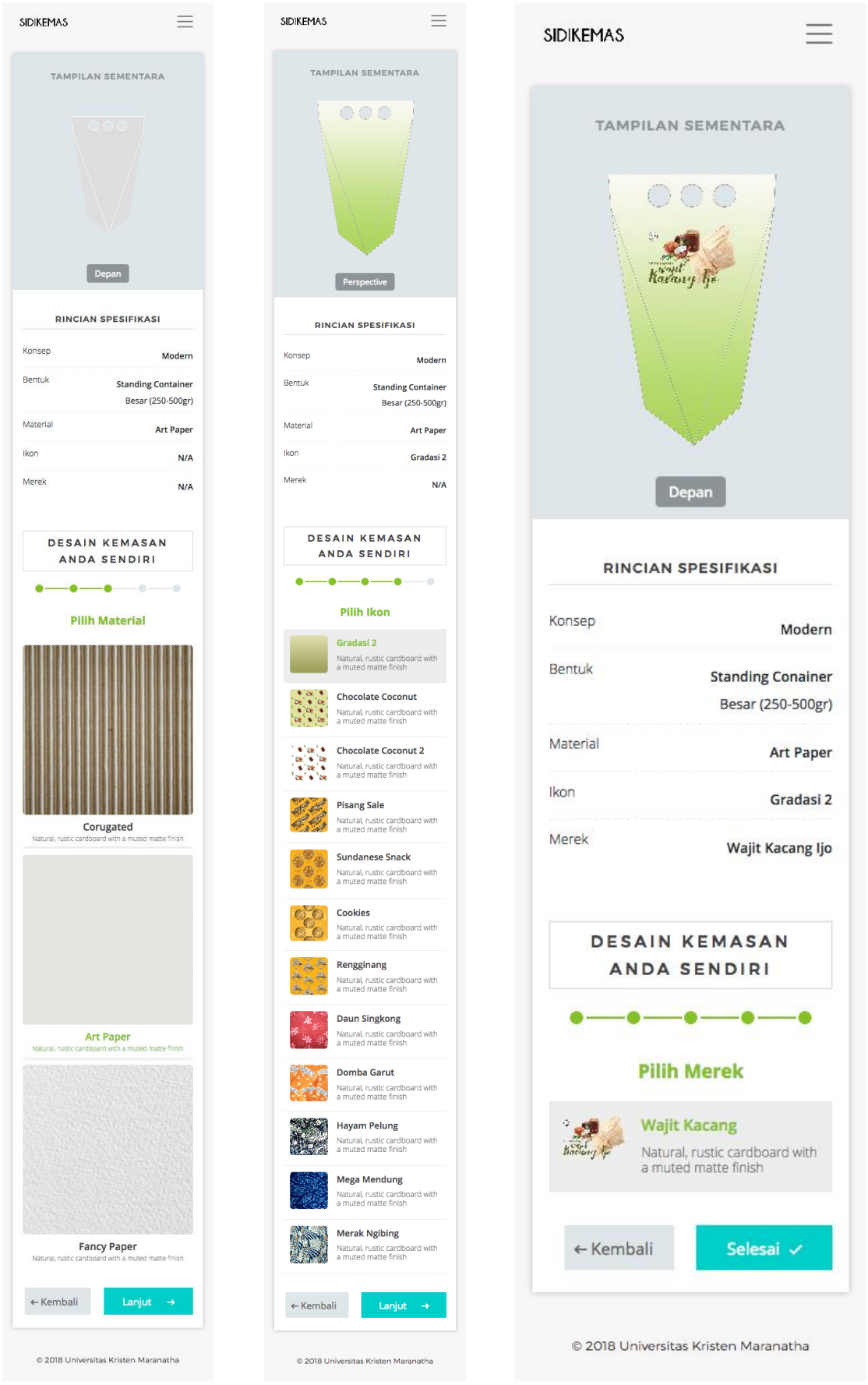

Figure 6. UI SIDIKEMAS Feature Design 4, 5 (Private Documentation, 2018)

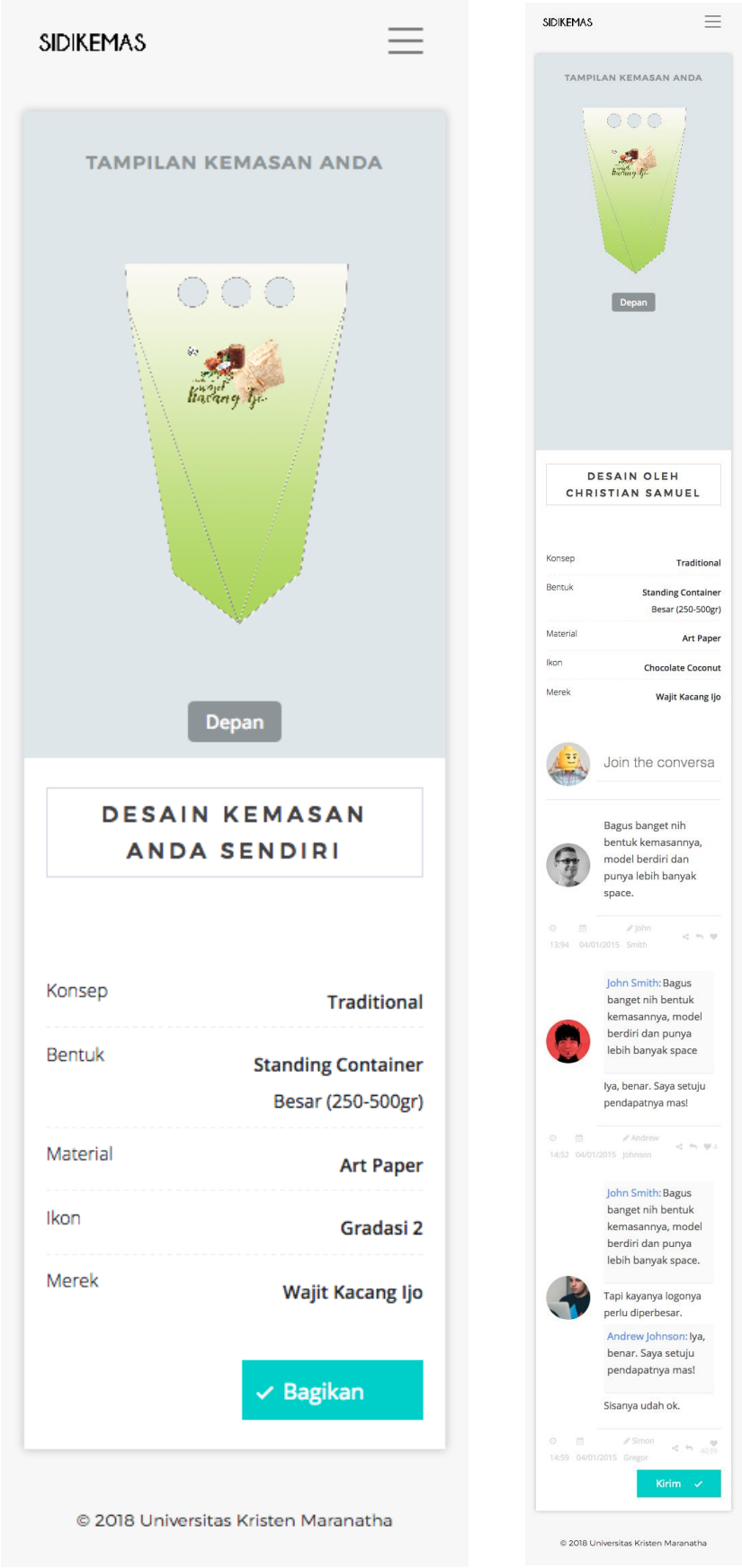

Figure 7. UI SIDIKEMAS Feature Design 6,7 (Private Documentation, 2018)

CONCLUSION

Learning to design creative packaging with local characteristics can be done through a packaging design digital simulation application. Through designed features based on the theory of design processes, learners can be directed to create the product packaging design independently. This digital simulation application is useful for not only accelerating packaging design education in MSMEs but also acting as a medium that can bring together MSMEs, local Department of Industry and Commerce, higher education designers, producers of nature packaging materials made and the general society. Society in general.

Seeing that the particular digital applications like are not yet familiar to the public, the suggestion for further research is to conduct a more in-depth trial of this prototype to suit the needs of its users.

ACKNOWLEDGMENT

Thank you to the Ministry of Research, Technology and Higher Education for having funded the ongoing series of applied research in the 2nd year. Thank you also to the Department of Industry and Commerce Bandung Regency and its assisted community in Sabilulungan, who have helped in the process of collecting data and become implementing partners from the research results.

REFERENCES

Agustine, Saskia. (2019). Kajian Desain Aplikasi Mobile Recruitment Bagi Pengguna Kelas Sosial Ekonomi Menengah Bawah. *Master's thesis, Institute Teknologi Bandung, Bandung, Indonesia*. Retrieved from https://digilib.itb.ac.id/index.php/gdl/search.

Chou, Ming Che. 2013. Does tourism development promote economic growth in transition countries? A panel data analysis. *Economic Modelling*. *33.* 226-232. https://doi.org/10.1016/j.econmod.2013.04.024

Cuello, J. dan Vittone, J. (2015): *Designing Mobile Apps*, Lexington, KY: S.n.

Fling, B. (2009): Mobile Design and Development, Sebastopol, OReilly Media. Retrieved from https://www.oreilly.com/library/view/mobile-design-and/9780596806231/

Gyimothy & Mykletun. (2009). *Scary food:* Commodifying Culinary Heritage as Meal Adventures in Tourism. *Journal of Vacation Marketing. 15(3).* 259-273. doi: 10.1177/1356766709104271.http://jvm.sagepub.com/content/15/3/259.

Hidayat, M.J. (2009). Analisis Industri Budaya Pada Desain Produk Kemasan Makanan Industri Kecil Menengah. *Acintya Jurnal Penelitian seni Budaya, 1(2).* 141-151. doi: https://doi.org/10.33153/acy.v1i2.55.

Mansur, Agus. (2019). Tahun 2019, Pemerintah Targetkan 8 Juta UMKM Aplikasikan Tekhnologi. *Harian Ekonomi Neraca*. http://www.neraca.co.id/article/114235/tahun-2019-pemerintah-targetkan-8-juta-umkm-aplikasikan-tekhnologi.

Holik, A. (2016). Relationship of Economic Growth with Tourism Sector. *JEJAK: Jurnal Ekonomi Dan Kebijakan, 9(1)*, 16-33. doi:http://dx.doi.org/10.15294/jejak.v9i1.7184

Nugraha, A. (2012). Transforming Tradition: A Method for Maintaining Tradition in Craft and Design Context. Helsinki: Unigrafia.

Punchoojit, L., & Hongwarittorrn, N."Usability Studies on Mobile User Interface Design Patterns: A Systematic Literature Review,". Retrieved from https://www.researchgate.net/publication/320986719_Usability_Studies_on_Mobile_

User_Interface_Design_Patterns_A_Systematic_Literature_Review

Safanayong, Yongki. (2006). Desain Komunikasi Visual Terpadu. Arte Intermedia, Jakarta.