

E-Commerce Strategy for Innovative Products Wood Mindi Fashion Bags with A Form Follow Function Approach

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Abstract

The innovation of up-cycled Fashion Bags of Mindi Wood products reinforces the interior needs and aesthetic elements of future contemporary residences. This research seeks to: (1) enhance the global competitiveness of Fashion Bags of Mindi Wood up-cycled products through innovative designs based on the form-following-function idea; (2) protect intellectual property rights (IPR); and (3) strengthen the qualifications of creative, innovative, and superior human resources by enhancing marketing communication through e-commerce strategies. This qualitative study used a phenomenological approach, which was conducted in several stages: (1) Field data exploration for partner industries, (2) data source assurance (participants), (3) instrument preparation, (4) data analysis and representation, (5) trust criteria, and (6) reflectivity of research findings. The study findings emphasize three main foci: (1) The attainment of globally competitive quality in Fashion Bags of Mindi Wood up-cycled products based on the form that follows function principle; (2) The protection of IPR requires an outline and strategy for improving the protection of IPR export products. (3) Marketing communication can be boosted using e-commerce strategies to enhance the qualities of excellent, creative, and ingenious human resources. The results describe a plan for enhancing shape and aesthetic exploration patterns through design innovation, along with ideas for enhancing the marketing management systems based on e-commerce used by micro, small and medium enterprises.

Keywords: *e-commerce strategies, Fashion Bags, innovative designs, Mindi Wood*

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Strategi E-Commerce untuk Produk Inovatif Tas *Fashion Wood Mindi* dengan Pendekatan *Form Follow Function*

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Abstrak

Artikel ini meneliti persepsi pemegang pengetahuan budaya Iban terpilih terhadap peranan *ensera* dalam Inovasi produk *beg fesyen* daripada kayu *Mindi* yang dikitar semula berpotensi memperkukuh nilai estetika dan fungsi dalam konteks gaya hidup kontemporari. Kajian ini bertujuan untuk: (1) meningkatkan daya saing global produk *beg fesyen* berasaskan kayu *Mindi* yang dihasilkan melalui pendekatan *upcycle* menerusi reka bentuk inovatif berasaskan prinsip *form follows function*; (2) melindungi Hak Harta Intelekt (HHI); dan (3) memperkukuh keupayaan sumber manusia yang kreatif, inovatif dan berdaya saing melalui peningkatan komunikasi pemasaran berasaskan strategi e-dagang. Kajian kualitatif ini menggunakan pendekatan fenomenologi yang dilaksanakan melalui beberapa peringkat, iaitu penerokaan data lapangan dalam kalangan industri rakan strategik, penentuan sumber data atau peserta kajian, pembangunan instrumen, analisis dan representasi data, penentuan kriteria kebolehpercayaan serta reflektiviti terhadap dapatan kajian. Dapatan kajian menekankan tiga fokus utama, iaitu pencapaian kualiti produk *beg fesyen upcycle* berasaskan kayu *Mindi* yang berdaya saing global berdasarkan prinsip *form follows function*, keperluan terhadap kerangka dan strategi perlindungan HHI bagi produk berpotensi eksport, serta peningkatan komunikasi pemasaran melalui strategi e-dagang bagi memperkukuh pembangunan sumber manusia yang kreatif, inovatif dan berdaya saing. Secara keseluruhannya, kajian ini mengemukakan perancangan bagi meningkatkan penerokaan bentuk dan nilai estetika melalui inovasi reka bentuk, di samping memperkukuh sistem pengurusan pemasaran produk.

Kata Kunci: *strategi e-dagang, beg fesyen, kayu Mindi, reka bentuk inovatif*

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1.0 Introduction

The innovative use of up-cycled Fashion Bags of Mindi Wood in hand-made products is a subject matter that relies on the research process and the design innovation process based on a form that follows practical ideas for developing excellent art products for export. With the help of the CV Mitra creative team, a synergy of up-cycling products aims to produce Fashion Bags of Mindi Wood root waste materials and packaging waste (Dixon-Hardy & Curran, 2009; Malik, 2013). Following in-depth observations about up-cycled Fashion Bags of Mindi Wood, one company in Bantul, Yogyakarta, CV RUAYA began the steps of the problem identification process. The first step was the identification of teak waste features, technological processing potential, exploration, and the process of changing teak waste material into practical works that value aesthetic aspects through an up-cycle process. Then, the up-cycled idea was incorporated with the process of collecting visual data in the form of design development facts, exploration of references, and global design trends, from deepening primary and secondary data. These were finally analyzed as a basis for formulating the up-cycled concept into the process of creating Fashion Bags of Mindi Wood-based products for export. Because the orientation of the products is profane, and they are products that adapt to the value of function while their visual presentation provides an aesthetic element in an interior picture, the innovative design reference that is applied still relies on the form following the function principle. The product orientation prioritizes practicality in accordance with the modernist dictum of *form follows function*. Nevertheless, beyond fulfilling utilitarian demands, the products articulate a deliberate visual language that enhances the interior's aesthetic coherence. The applied design innovations therefore operate within a calibrated equilibrium between functional performance and visual expression, ensuring that utility and aesthetic value are not positioned as oppositional, but as mutually reinforcing dimensions.

A work of art must reflect creative industries (Zahry, Khoo, & Badarulzaman, 2017) that genuinely symbolize the spirit of the times, not only transmits a message through a sign system communicating in visual language. Art can not only reflect reality, social facts, the evolution of creative and soft skills (Daud, Zin, & Yusof, 2019), and the evolution of a creative economic vision, but it can also transform reality. Also, this effort of *Ampu* transforms teak waste into aesthetically beautiful practical products through an innovative up-cycled technique. The exploration and innovation of up-cycle-based designs as creative expressions, manifesting notions, aesthetic experiences from various insights (inner views), and academic references presented to the worldwide public result in the export of excellent products. The up-cycled Fashion Bags of Mindi Wood craft industry center in Guwosari Bantul is one example of the creative industry's steady and stable growth, which supports the production of innovative ideas, and has a remarkable significance to the creative enterprise and digital business programs that can help tourism movements. Furthermore, the Fashion Bags of Mindi Wood art of the up-cycled industry can have high international competitiveness by empowering micro, small and medium enterprises (MSMEs) which are resourceful, revolutionary, hardworking, and competitive with the protection of intellectual property rights (IPR) so that their cutting-edge products have a significant bargaining power value in the international market.

When creating product designs, another successful company in the hand-crafted up-cycled industry, Fashion Bags of Mindi Woods follows the Form-Following-Function idea (Prabowo,



2002; Soepratno, 2004). The form-follows-function adage was coined by the architect Louis Sullivan (1856–1924) who stated that a structure or object's shape should be directly related to its intended function or purpose. Sullivan established the idea that Form- Follows-Function in one of his writings, *The Tall Building Artistically Considered*, which was released in 1896. He proposed that a building's or an object's shape must reflect its function or usage. According to his theory, a building's size, space, and qualities initially lead to the building's function. The notion is that the functional requirements are prioritized, and the architectural beauty will automatically follow. However, the Form-Follows- Function theory has become more relevant to product design and modern architecture as time progresses.

This research aims to demonstrate that the Form-Follows-Function principle is crucial in product design, particularly in product design studies. According to recent research, a product's form must be its function for users to find it easy to use (Primayanti, 2020; Primayanti & Putra, 2020). Throughout the twentieth century, modernist architecture and industrial designers designed their products based on this principle. Sullivan supported this approach, stating that the legal system is like this. A successful redesign is one that allows both utilitarian and symbolic functions to remain legible and recognized through the transformation of form. This means that the principle of form follows function speaks not only to efficiency but also to the existential legibility of a product. Form becomes an expression that makes the product's "life" its purpose, values, and identity recognizable. It is the unbreakable rule of all things organic and inorganic, physical and metaphysical, human and superhuman, of all actual manifestations of the head, heart, and soul, that life is recognizable in its expression, that a form always follows a function (Sullivan, 2010).

In the problem identification process, the present research identified several key issues as follows: (1) Lack of competitive qualities of up-cycled Fashion Bags of Mindi Wood products; (2) Lack of exploration of form and aesthetics in Fashion Bags of Mindi Wood products; (3) Low required improvements that meet high qualifications, such as superior but also innovative human resources; (4) Low awareness of the protection of IPR designs and wood products; and (5) The significance of testing for export standard Fashion Bags of Mindi Wood materials and testing of design models and production feasibility, and (6) the present weak system of e-commerce for commercial marketing and export of up-cycled Fashion Bags of Mindi Wood products. The specific goals of this research are to: (1) enhance the competitiveness of innovative designs and export products made from up- cycled Fashion Bags of Mindi Wood on a global scale; (2) strengthen the pattern of shape and aesthetic exploration through design innovation with feasibility tests; (3) raise the standards for creative, innovative, and superior human resource management; (4) enhance the protection of IPR for prototypes of superior Fashion Bags of Mindi Wood export products; and (5) evaluate raw materials for up-cycled Fashion Bags of Mindi Wood products. This research is urgent because it is necessary to address the essential needs: (1) to increase the competitiveness of products with high economic value in the export market for Fashion Bags of Mindi Wood based on the up-cycled method; (2) to recognize the importance of developing aesthetic, unique, and authentic up-cycled Fashion Bags of Mindi Wood technology; (3) to support efforts to increase creative and superior human resources; (4) to obtain IPR protection (Beckerman-Rodau, 2010; Susanto, 2015) as beneficial values for Fashion Bags of Mindi Wood products; and (5) to improve the e-commerce system in order to reach out to global customers.



2.0 Methodology

The authors used practice-based research in creating works of art, which is a method of creating art based on research findings. An intellectual artist conducts art research by observing the creative process in detail to learn new knowledge and experiences through practice. According to Biggs and Buchler (2008) and Obe and Malins (2015), the practice-based research technique will be successful if it meets the following criteria: (1) The practical activities are part of an investigation aiming to gather the information that will benefit others; (2) The research and practice results on the study subject are presented logically; (3) All information gathered is directly tied to the actual job; (4) Open and transparent study and studio practice discussed details which are structured, systematic, measurable, achievable, and explanatory; and (5) The study data and outcomes obtained through this procedure can be correctly and appropriately validated.

In making art, a practice-based research technique seeks to execute this approach utilizing the action method. Rademaker and Polush (2022) emphasize that action research in the field implements professional development procedures for practitioner researchers seeking to solve problems. Furthermore, this research can also benefit from the intense and productive teamwork that comes from people dedicated to their work area. Therefore, every creative process undertaken by the authors is founded on the concept of this method, allowing it to carry out innovative work processes that may be conducted directly through the process of discovery and experimentation. Over all the creative processes encourage the writers to act based on scientific principles. They can delve deeply into various technical and non-technical practical experiences that arise while making a work of art.

When artists produce a work of art, they also engage in behavioral research projects in a particular language of expression that denotes the existence of art, mainly connected to behavioral and cultural changes. Bostad (2004) asserts that when artists produce artwork, they conduct research studies in a particular language that only exists because of the presence of art. Their research will utilize specific tools and information providers to dialogue with other artwork pieces, creative people, and audiences. The use of particular media and tools during the creative process aims to interact with other works of art to compare them with those of creators and consumers. Each distinctive study pattern transforms the subject matter in the universe of thoughts through the methods and demands of particular artistic techniques. In this current study, the authors then collaborated their results with the practice-based research technique, which (Gustami, 2007) re-explained as the art production process remade or 'up-cycled.' He underscored that while art is intuitive, scientific approaches are well-planned, analytical, and rigorous. With this premise, this research applied three stages of methodology: exploration, design, and realization. These three stages outline a six-part approach for investigating and strengthening each stage and step of the creation process.

3.0 Findings and Discussion

The up-cycled Fashion Bags of Mindi Wood craft industry center in Guwosari Bantul, Yogyakarta, Indonesia, which has contributed significantly to the creative and digital pieces of the overall industry, exemplifies the potential of the creative sector, which encourages the development of



innovative ideas in it. The region's potential power to expand the creative economy (Hidayat & Asmara, 2017; Hilmiana, Soemaryani, & Joeliaty, 2020; Howkins, 2017) in the creative industry sector and support the tourism movement depends heavily on its social and cultural capital. The creative industry focuses on producing creative wealth and supporting local creative sectors such as the Fashion Bags of Mindi Woodcraft industry, which has become fiercely competitive internationally. MSMEs have strong IPR protection, creativity, and competitiveness, allowing their innovative products to command a high price on the global market.

CV Mitra clearly intends to realize a Form-Follows-Function design principle in this study, which is applied to practically all items as a critical step to manufacture up-cycled teak root wood waste into usable products while maintaining their aesthetic values. The design innovation process entails converting the notion of generating art items into a unique visual form that can adapt to the natural form of teak root waste material by investigating concepts, visuals, techniques, media, and aesthetic exploration. The notion of form is prioritized for each subject of teak root waste and fossil material to estimate the process of generating a segmented export product, and the output is the embodiment of a one-of-a-kind form of art. Finding the notion of form is the basis for art creation with diverse approaches (quantum leap with a phenomenological approach) as a reference for making art goods after formulating the concept of generating art products. The steps of the creation process can then be directly arranged in the following order: (1) exploration stages (ideas, concepts, forms, techniques, and aesthetics), (2) design process, (3) forming (embodiment process), (4) improvisation and experimentation, (5) finishing process, and (6) evaluation process.

3.1 The Design of Innovation-based Creation Processes

This stage of investigation entails various efforts to investigate the visual forms and initiate various points of view and ways of expressing them. The artist, as an observer, explorer, or researcher, is obligated to gather data, facts, and 'hidden' realities about the subject under consideration to seek various insights as a way of identifying possibilities in the conceptions of ideas, form, and presentation. In his book *The Ten Faces of Innovation* (2001), Tom Kelley defines the components that steer this process with the following rules: (1) Strive for quantity; excellent, sound, and bright ideas emerge from a large volume thoughts. Strive for quantity, as excellent, well-grounded, and innovative ideas tend to emerge from the generation of a large volume of thoughts. Develop goals that are scored numerically with the highest possible score; (2) Promote the emergence of outlandish and extreme beliefs. Extremism has a positive value. (3) Make pictures; visuals can help inspire creativity and create new, fresher ideas (Iswantara, 2017). (4) Postpone the evaluation; by postponing the assessment, the brainstorming process occurs spontaneously and without the influence of our left brain, which is usually reasoning. There are no such things as poor ideas, so start thinking creatively and critically. (5) Take one conversation at a time, listen and be courteous, and base your decisions on the opinions of others. According to Gustami (2007), the exploration stage consists of two steps: (1) Soul-wandering steps, with field observations and extracting reference sources and information to find various approaches for problem-solving; and (2) Procedures for investigating theoretical foundations, sources, references, and visual references which can leverage analytical materials. Every artist is aware of exploring their



own creative potential through specific steps (idea exploration, shape exploration, and technical exploration), believes in providing conceptual and visual sharpening of works of art, and describes artistic efforts as a process of discovery.

Besemer (1998) and (Besemer & O'Quin (1999) proved that creative goods possess the following categories: novelty, solution, elaboration, and synthesis. The "Creative Product Analysis Matrix" is the name of this model, which has two components: First, novelty refers to how well the product can meet the requirements to solve the problem. Second, solution refers to how well the item can comply with the requirements to overcome the issue. In this dimension, there are four main criteria: (1) The product must be valuable; (2) the product must be logical; (3) the product must be easily applicable; and (4) elaboration and synthesis are required. Essentially, the product must be able to combine aspects that are not the same or comparable to the latest in this category. This category has five requirements: (1) Having meaning or significance; (2) having more value than it appears; (3) complicated, with multiple aspects merged; (4) products that are easily understood and shown; and (5) demonstrating the presence of talents or experience in the product's manufacture. A local prodigy is a unique culture, national customs, and traditions or character that allows the country to adopt, adapt and develop various cultures according to its morals and skills (Ayatrohaedi, 1986). Creativity in a culture generates new ideas or transformations due to cultural crossings or mixing, which can further cause new forms and cultural manifestations. The expressions of this creativity take the form of cultural products such as language, symbols, knowledge, and objects (Piliang, 2019).

3.2 Exploration and Aesthetic Approach

The goal of idea exploration is to extract an essence or essential meaning from diverse discoveries of aesthetic moments that spark a creative idea. Essentially, the emergence of an idea's conception occurs from a series of earnest, intense, and profound observations on an object or statement that result in an inter-subjective interpretation. From this perspective, soul and art is an effort to bring together ideas about Jung's relationship from the perspectives of psychology and art by providing a great new aspect to significant issues like the contribution of the picture in contemporary culture as well as the polarization of life force and substance in the visual arts (Rowland, 2008; Dougherty, 2009). This presentation is divided into three sections that challenge the reflection space and can interpret art in the world, demonstrating how Jung's concepts seek to approach the concept of art to illuminate psychological theories and aesthetic responses. The principles of beauty in a work of art, among other aspects, contribute to its creative and aesthetic value. First, visual aspects such as points, lines, forms, colors, textures, and planes are worth fulfilling. Second, design elements include composition, proportion, rhythm, balance, and unity. Essentially, the fulfillment of visual aspects is critical, given that the aesthetic language of a work of art (i.e., a painting) is a visual language. According to Sayre (2016), the depiction of the worth of beauty in a piece of art is more decisive in terms of someone's sensitivity in controlling visual components by mastering numerous design principles; the rest is uniqueness. For someone who is knowledgeable about the technical and philosophical aspects of obtaining a more personal aesthetic aim,



for this research, the concept of visual form offered in this final projection includes all visual elements that have a reflected potential on up-cycled Fashion Bags of Mindi Wood through painting media research. Paintings present form as a medium for retranslating the idea of creation. Applied to the creative process discussed here, the visual inquiry reflects on the up-cycled Fashion Bags of Mindi Wood and its potential as an export product.

In investigating this approach, the authors have developed a creative orientation on choosing the appropriate media to use and the accomplishments of artistic techniques that agree with the goals or aesthetic vision to reach a reasonable and personal manner. The creative process was initiated by executing the sketching process as planned in searching and excavating visual shapes relevant to media needs and artistic techniques. Teak wood waste material (Retantoko & Sulbi, 2016), manual techniques, media, and technique exploration are essential in response to artistic needs. Exploration of media and techniques to maximize various processes of media treatment with diverse approaches to creative techniques to find stability in making art consistent with the presentation of thoughts and feelings. To choose and determine the medium of expression as a technical decision in attaining the aims of the art creation process, an artist must have deliberately mastered it via several empirical experiences with the media. According to Feldman (1967), technique and media intersect in everyday use. However, we can define technique more accurately here: technique is an individual or personal way of using media.

Next, in addition to medium and technique inquiry, aesthetic discovery is a necessary part of the creative process. However, aesthetic exploration necessitates a logical order of emotions, sentiments, ideas, and intellectual abilities. A hierarchy of works of art constructed as a representation of emotions, feelings, and intellectual aspects is known as aesthetic investigation. Exploring ideas occurs or concepts arise in a series of creative processes. To develop an aesthetic structure, matters connected to forming opinions closely related to the visual form process necessitate aesthetic sensitivity, mastery of sentiments, and improvisation born from grounded or interior experience. Improvising, excavating features of form, diverse optical characteristics, creative patterns, aesthetic sharpening with technical and analytical abilities, and absolute sharpness of intuition are well worth exploring in any genre or media.

Sabana (2020) stated that (1) creativity is a person's ability to create new works (novelty) that are distinct from past works; and (2) creative abilities frequently coexist with exploratory activity. (3) In an area or community rich in art and culture (heterogeneous and unique), creativity and exploration will lead to the invention; and (4) in the context of creativity and batik exploration: designing the motifs and coloring pertain to the natural environment, local culture, and local wisdom. Form (formal), content (symbol), and emotional expression contribute to this aesthetic, emotional connection. According to Graburn (1977), there are two categories of art based on the theory of art development: (1) art by destination, namely art by purpose, where a group of people produces works of art for their own needs; and (2) art by metamorphosis, namely art through metamorphosis, where people produce works of art for the needs of others. Langer is



accurate in terms of making a distinction between discursive and representative symbols. Discursive symbols are in the form of written and spoken languages for communication with other parties. This symbol is more of a description than a symbol. While the representative is a presentation symbol, such as an image, this symbol is more illustrative since it is a presentation language of an unsaid meaning in a discursive symbolism. The third category of symbols is art symbols. Art is a sensory phenomenon with implicit meaning, such as rites and myths, but it is more significant and generic (genre-based). Even though they are conceptually different, the sense of art cannot be far apart from its symbolic form.

3.3 *The Design Innovation through the Shape and Aesthetic Exploration*

The analysis of the research results includes: problem deepening and prioritizing partner problem solutions in boosting the competitiveness of up-cycled wood products with new designs based on the results of the research stages. Preliminary activities, follow-up observations, and in-depth observations describe the actions that took place, or the meaning of events as seen through the eyes of those involved; that is, they do not participate in the subject's activities at all but instead observe the subject's behavior to strengthen the data.



Figure 1. Follow-up observation activities and up-cycled Fashion Bags of Mindi Wood products in a strengthening plan.

This activity at the start of the research activities with the Research Team, partner students, and start-up companies in affiliation with CV RUAYA needed technical assistance. The RUAYA Group aimed to gather various essential facts, legal documents, and preliminary potential as a projection for developing a program of additional strategic operations. According to the Design Innovation Workshop: Exploring Shape and Aesthetics through Feasibility Testing Improving, the pattern of shape and aesthetic exploration through design innovation is one approach to ensuring the viability of IPR protected products. Then, several significant challenges could enhance product competitiveness through shape and aesthetic investigation. First, stakeholders needed to cooperate more to increase awareness of IPR through research, development, and mastery of appropriate technology to create value through synergistic innovation because Fashion Bags of Mindi Wood up-cycling products are currently not highly competitive on the global market. The creative approach is dedicated to enhancing the protection of IPR for the superior Fashion Bags of Mindi Wood export product or prototype. CV RUAYA



understands the significance of continuing to conduct research and inquiry into the shapes, processes, and aesthetic appeal of extremely competitive Fashion Bags of Mindi Wood products. CV RUAYA is a Fashion Bags of Mindi Wood industry participant focused on beautiful and functional pieces to complement the interior of modern residences and businesses. To create original, innovative products with the potential for protecting IPR, both in design systems and rapid prototyping, of ready-for-marketing products, it is imperative to improve the competence of excellent creative human resources. Consequently, the value of Fashion Bags of Mindi Wood plank items is rising economically and aesthetically.



Figure 2. The researchers and the owner observed aesthetic materials in the workshop.

The results show the analysis of efforts to improve the competence of innovative personnel with talents, skills, and creativity through the Fashion Bags of Mindi Wood up-cycled design innovation workshop program. Superior export products with high competitiveness in the global market have supported the achievement of design innovations with various explorations (ideas, forms, techniques, media, and aesthetics). Supported by the mastery of digital technology, creative and marketing resources can strengthen these e-commerce efforts based on marketing communication. Integrating e-commerce and corporate branding into partner initiatives for future business progress becomes the next step. The Creative team at the CV Workshop location explored material specifics with their features and Fashion Bags of Mindi Wood treatment. The RUAYA Group, in collaboration with the Research Team and two Fine Arts Study Program students, closely examined the primary raw materials and opportunities for the creative process. They have developed several advanced treatment procedures for the manufacture of the primary raw material of teak root for the up-cycled Fashion Bags of Mindi Wood process into aesthetic items.



Figure 3. Identify the best material for petrified teak roots.

The up-cycled Fashion Bags of Mindi Wood observations focused on the research method and assisted the design innovation process based on a Form-Follows-Function technique for generating exceptional art items as export products. The CV Mitra creative team envisioned the up-cycling process using Fashion Bags of Mindi Wood root waste material. CV RUAYA used problem-solving techniques based on in-depth research of up-cycled Fashion Bags of Mindi Wood. Identification of teak waste material characteristics, technological processing potential, exploration, and the process of up-cycling teak waste material into usable works were accomplished with an emphasis on aesthetics.

These principles can be fundamental to further investigate the collection of visual data in the form of design development facts, exploration of references, and global design trends, as well as the analysis of primary and secondary data as a basis for formulating the up-cycle concept into the process of creating up-cycled Fashion Bags of Mindi Wood-based art products for export. Although the product orientation is profane, its visual presentation can be an attractive feature in an interior picture, and the innovative design reference still relies on a form that follows the function concept. The draft process manages the material test analytical items by describing raw materials and procedures, managing production stages, and packing while the activity is still in the identification stage. It is actually the drafting stages presently and will still be a continued project within the second year of the research budget.

3.4 E-commerce-based Marketing Governance System Improvement Strategy

Testing for production feasibility, design models, and exporting standard Fashion Bags of Mindi Wood materials means supporting legal intellectual property protection. Using procedures and tools that encourage, inspire, and inform designers, graphic artists, and craftspeople about the importance of filing their innovative design products with the Directorate General of Intellectual Property Rights (IPR). Historically, high-tech expertise has been pertinent to creative design goods, but this association quickly fades as innovation enters the dialogue and practical application of MSMEs, especially small and medium-sized businesses.

The main subjects of observation of up-cycled Fashion Bags of Mindi Wood in the research process are aimed at aiding the design innovation process based on Form-Follows-Function in a series of procedures for developing art products superior to current export products. The CV Mitra creative team endorses the process of generating up-cycle products based on Fashion Bags of Mindi Wood root waste material. CV RUAYA took steps in problem-solving through in-depth studies of up-cycled Fashion Bags of Mindi Wood. The first step was to identify teak waste features, technological processing potential, exploration, and the process of up-cycling teak waste material into functional works that value aesthetic aspects. Then, the deepening primary and secondary data were further analyzed as a basis for formulating the up-cycled concept into the process of creating Fashion Bags of Mindi Wood-based art products for export. In the next step, visual data can be a collection of design development facts confirming the findings from



an exploration of references and global design trends. Even though its visual presentation might be an attractive element in an interior image, a product responds to the value of function because of its profane orientation—a Form-Follows-Function approach that uses innovative design references. The development of innovative up-cycled products currently focuses primarily on design innovations for superior export products, as well as corporation groundbreaking events and outsourcing interplay of up-cycled Fashion Bags of Mindi Woods, which provide new possibilities for the expansion of creative and digital MSMEs by encouraging improved production and efficiency. The government's efforts, along with those of researchers and volunteers from the community, are crucial to influencing the program's success. By implementing design innovations solely as a form of creativity and using aesthetically pleasing innovations with a profane function, various programs strive to enhance the quality of personnel. In addition, they are using an e-commerce-based marketing strategy to build an online interactive management system, advertising, and tax filing feedback process. Furthermore, there are recent developments in PIXEL linkages from the WEB to the business IG with modern interconnections that strengthen e-commerce.



Figure 4. Fashion Bag Product 'Ruaya'

With the integration of advanced human resources and the CV Marketing Team, the e-commerce strategy needs some improvements. Through numerous digital marketing platforms (Website, IG, IG Bisnis, FB, and FB Marketplace) and a compelling, beautiful, and new presentation, the RUAYA Group has refreshed the visual content of its top product, up-cycled Fashion Bags of Mindi Wood. All accounts and digital platforms are adequately maintained and in an integrated way capable of generating a branding impact for firms with innovative items, resulting in a fresher display. Indeed, during the Covid-19 pandemic (Ostergard, 2020), which paralyzed the creative industry company and all economic sectors for over two years, CV. RUAYA Group had reasonably good Loyal Customers with contracts and invoices in numerous countries (America, Taiwan, Germany, and Australia). However, even though the order capacity is adequate, they



could only send 24-27 regular containers each year during the COVID-19 pandemic; however, delivery is currently limited to 24 containers per month.

Meanwhile, due to the COVID-19 pandemic, export turnover fell by 25-35% to roughly 24 billion dollars per year. Yet, absorption is approximately 300-500 million each year, boosted by retail sales through digital platforms and subscriptions from local and domestic consumers, with manufacturing costs and fixed company operating costs reaching around 100-120 million per month. During this challenging time, there were many up- start domestic and local retailers and resellers. Domestic and local sales services are enough to assist business movements in covering most manufacturing expenditures and other expenses. Because China's economy has improved in recent years, many Taiwanese importers have continued to place orders, even if the products are customized, and they frequently request Buddha series products made of terrazzo materials. Fortunately, CV RUAYA has a 40% permanent workforce and a 60% part-time or daily freelancing workforce, with some projects using a wholesale model. As a result, even while demand for their products declines, the risk of financing manufacturing costs remains high.

This research activity involved six students from the Fine Arts Education Study Program, two Masters of Management students at Universitas Sarjanawiyata Tamansiswa, Yogyakarta, and one student in International Communication Studies, Faculty of Social and Political Sciences to increase the synergy between universities and society, as well as the Industrial World, in line with the Independent Learning of the Independent Campus Program (MBKM) to fulfill the Main Competency Indicators (IKU). The acknowledgements of this research activity are related to several MBKM courses, including Art-edupreneurship, Creative Industry Practices, HR Development, Marketing Management, Digital Marketing, and Multimedia Presentation Techniques. The outcomes include increased awareness of intellectual property rights (IPR), publication of scientific articles in reputable international and national journals, and the development of marketable prototypes for upcycled Fashion Bags made from Mindi Wood waste.

4.0 Conclusion

The strategic approach and structure of bolstering form and artistic investigation across design and production as the viability of IPR product lines can claim to support the ability of the up-cycled products to compete on the international market by enhancing the knowledge and understanding of current technologies to produce value through synergistic innovation. Furthermore, the innovative approach better protects the prototype's IPR or exceptional exported goods of carved wood. CV RUAYA, a participant in the Fashion Bags of Mindi Wood industry who is committed to creating decorative and valuable objects to enhance interior design, is aware that there are still many studies, explorations, and discoveries of shapes, procedures, and aesthetic appeal, and possibilities for the production of highly competitive plank goods needing further innovations. However, superior creativity can generate distinctive, innovative products with the potential for marketing, high competitiveness, and broad marketing reach through mentorship programs and by strengthening the credentials of creative human resources.



The strategy of aiding the design innovation process aims to realize the Form-Follows-Function principle in a series of steps for developing outstanding art items for export. Synergy with the CV Mitra creative team is generating upcycled items from Fashion Bags made from Mindi Wood waste material. CV RUAYA, through the steps of the problem identification process, is a consequence of in-depth observations of upcycling Fashion Bags made from Mindi Wood. The process successfully identified teak waste features, technological processing potential, and exploration, and transformed teak waste into practical works that value aesthetic aspects through an upcycled process. Because the product's orientation is profane, the innovative design reference nevertheless relies on the Form-Follows-Function principle. Even if its visual presentation can be an attractive element in an interior image, a product is judged by the value of its function and can gain greater aesthetic value in the process.

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References

- Ayatrohaedi, A. (1986). *Kepribadian Budaya Bangsa Bangsa: Local Genius*. Jakarta: PT Dunia Pustaka Jaya.
- Beckerman-Rodau, A. (2010). The Problem with Intellectual Property Rights: Subject Matter Expansion. *Yale Journal of Law and Technology*, 13(35), 36–89.
- Besemer, S. P. (1998). Creative Product Analysis Matrix: Testing the Model Structure and a Comparison Among Products-- Three Novel Chairs. *Creativity Research Journal*, 11(4), 333–346. https://doi.org/10.1207/s15326934crj1104_7
- Besemer, S. P., & O'Quin, K. (1999). Confirming the Three-Factor Creative Product Analysis Matrix Model in an American Sample. *Creativity Research Journal*, 12(4), 287–296. https://doi.org/10.1207/s15326934crj1204_6
- Biggs, M., & Buchler, D. (2008). Eight criteria for practice-based research in the creative and cultural industries. *Art, Design & Communication in Higher Education*, 7(1), 5–18. https://doi.org/10.1386/adch.7.1.5_1
- Bostad, F. (2004). Dialogue in Electronic Public Space: the Semiotics of Time, Space and the Internet. In F. Bostad, C. Brandist,



- L. S. Evensen, & H. C. Faber (Eds.), *Bakhtinian Perspectives on Language and Culture Meaning in Language, Art and New Media* (pp. 167–182). London: Palgrave Macmillan UK. <https://doi.org/10.1057/9780230005679>
- Daud, S. H., Zin, M. binti M., & Yusof, M. Z. (2019). Cooperative Learning in Event Management: A Case Study of Adventure of Beauty & Amp; the Beast. *International Journal of Creative Industries*, 1(1), 01–14. <https://doi.org/10.35631/ijcrei.11001>
- Dixon-Hardy, D. W., & Curran, B. A. (2009). Types of packaging waste from secondary sources (supermarkets) – The situation in the UK. *Waste Management*, 29(3), 1198–1207. <https://doi.org/10.1016/j.wasman.2008.06.045>
- Dougherty, M. (2009). Psyche and the Arts: Jungian Approaches to Music, Architecture, Literature, Painting and Film edited by Rowland, Susan. *Journal of Analytical Psychology*, 54(4), 538–540. https://doi.org/10.1111/j.1468-5922.2009.01801_4.x
- Feldman, E. B. (1967). *Art as Image and Idea*. New Jersey: Prentice Hall Inc.
- Graburn, N. H. H. (1977). *Ethnic and Tourist Arts: Cultural Expressions from the Fourth World*. Berkeley: University of California Press.
- Gustami, S. P. (2007). *Butir-butir Mutiara Estetika Timur: Ide Dasar Penciptaan Seni Kriya Indonesia*. Yogyakarta: Prasista.
- Hidayat, A. R. T., & Asmara, A. Y. (2017). Creative industry in supporting economy growth in Indonesia: Perspective of regional innovation system. *IOP Conference Series: Earth and Environmental Science*, 70, 012031. <https://doi.org/10.1088/1755-1315/70/1/012031>
- Hilmiana, H., Soemaryani, I., & Joeliaty, J. (2020). Strategic Partnership Model on Creative Economy Development in Indonesia Based on Local Arts and Culture in Bandung Regency. *International Journal of Creative Industries*, 2(3), 01–14. <https://doi.org/10.35631/IJCREI.23001>
- Howkins, J. (2017). *The Creative Economy: How People Make Money from Ideas* (Second Edi). London: Penguin Press. Iswantara, N. (2017). *Kreativitas: Sejarah, Teori dan Perkembangan*. Yogyakarta: Gigh Pustaka Mandiri.
- Malik, U. (2013). Alternatif Pemanfaatan Limbah Industri Pengolahan Kayu Sebagai Arang Briket. *Jurnal APTEK*, 5(1), 63–70. <https://doi.org/10.30606/aptk.v5i1.74>
- Obe, S. M., & Malins, J. (2015). Special Issue: Practice-based research in art and design. *International Journal of Education Through Art*, 11(3), 339–342. https://doi.org/10.1386/eta.11.3.339_2
- Ostergard, R. L. (2020). The West Africa Ebola outbreak (2014-2016): a Health Intelligence failure? *Intelligence and National Security*, 35(4), 477–492. <https://doi.org/10.1080/02684527.2020.1750136>



- Piliang, Y. A. (2019). *Medan Kreativitas : Memahami Dunia Gagasan*. Yogyakarta: Cantrik Pustaka.
- Prabowo, S. (2002). *Kerajinan Kayu*. Surabaya: Unesa University Press.
- Primayanti, L. P. I., & Putra, S. F. (2020). Seapower and Asymmetric Warfare in Indonesia. *Jurnal Pertahanan: Media Informasi Tentang Kajian & Strategi Pertahanan Yang Mengedepankan Identity, Nasionalism & Integrity*, 6(1), 94. <https://doi.org/10.33172/jp.v6i1.620>
- Primayanti, N. (2020). Implementation Form Follows Function Theory in Product Design. In *Proceeding International Conference 2020: Reposition of The Art and Cultural Heritage After Pandemic Era* (pp. 112–115). Bandung: Sunan Ambu Press Lembaga Penelitian dan Pengabdian Kepada Masyarakat (LPPM) Institut Seni Budaya Indonesia (ISBI).
- Rademaker, L. L., & Polush, E. Y. (2022). *Evaluation and Action Research an Integrated Framework to Promote Data Literacy and Ethical Practices*. Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780197620823.001.0001>
- Retantoko, C., & Sulbi, S. (2016). Pemanfaatan Limbah Kayu Jati Dalam Pembuatan Karya Seni Kriya Kayu Berbentuk Naga Eropa. *Jurnal Pendidikan Seni Rupa*, 4(3), 374–380.
- Rowland, S. (2008). *Psyche and the Arts: Jungian Approaches to Music, Architecture, Literature, Film and Painting*. New York: Routledge.
- Sabana, S. (2020). *Kreativitas dan Eksplorasi Desain dan Warna pada Batik*. Jakarta: Asosiasi Perajin dan Pengusaha Batik Indonesia.
- Sayre, H. M. (2016). *A World of Art* (8th ed.). New Jersey: Prentice Hall Inc.
- Soepratno, S. (2004). *Mengenal Budaya Bangsa Indonesia: Ornamen Ukir Kayu Tradisional Jawa*. Semarang: Effhar & Dahara Prize.
- Sullivan, L. H. (2010). The Tall Office Building Artistically Considered (Excerpt). Retrieved from <https://www.giarts.org/article/tall-office-building-artistically-considered-excerpt>
- Susanto, M. R. (2015). Peran Strategis Sertifikasi HKI Pada Produk Industri Kreatif Dalam Menyongsong MEA 2015. In *Proseding Seminar Nasional 'Peluang, Tantangan, dan Strategi Menyongsong MEA* (pp. 1–11). Yogyakarta: LP2M UST Yogyakarta.
- Zahry, S. M., Khoo, S. L., & Badarulzaman, N. (2017). Arts, Antiques, and Craft Businesses Locational Choice: The Case of George Town, Penang. *International Journal of Cultural and Creative Industries*, 4(2), 38–51.

