

ASERS

Journal of Environmental Management and Tourism

Quarterly

Volume XII

Issue 7(55)

Winter 2021

ISSN 2068 – 7729

Journal DOI

<https://doi.org/10.14505/jemt>

ASERS
Publishing



Editor in Chief

Ramona PÎRVU

University of Craiova, Romania

Editorial Advisory Board

Omran Abdelnaser

University Sains Malaysia, Malaysia

Huong Ha

University of Newcastle, Singapore,
Australia

Harjeet Kaur

HELP University College, Malaysia

Janusz Grabara

Czestochowa University of Technology,
Poland

Vicky Katsoni

Techonological Educational Institute of
Athens, Greece

Sebastian Kot

Czestochowa University of Technology,
The Institute of Logistics and International
Management, Poland

Nodar Lekishvili

Tbilisi State University, Georgia

Andreea Marin-Pantelescu

Academy of Economic Studies Bucharest,
Romania

Piotr Misztal

The Jan Kochanowski University in
Kielce, Faculty of Management and
Administration, Poland

Agnieszka Mrozik

Faculty of Biology and Environmental
protection, University of Silesia, Katowice,
Poland

Chuen-Chee Pek

Nottingham University Business School,
Malaysia

Roberta De Santis

LUISS University, Italy

Fabio Gaetano Santeramo

University of Foggia, Italy

Dan Selişteanu

University of Craiova, Romania

Laura Ungureanu

Spiru Haret University, Romania

Table of Contents:

1	The Effects of Lockdowns on the Air Pollutants' Concentration. Case Study of Nitra, Slovakia Kristína BACULÁKOVÁ, Ľubica HRAKAL'OVÁ, Rudolf KUCHARČÍK	1747
2	Forecast of Organic Diversification of Agriculture in a Global Perspective Vladimir V. GRIGORUK, Chulpan U. AKIMBEKOVA, Altynsary D. UMBITALIEV	1754
3	Green Investment Model for Smallholder Oil Palm Plantation in Bengkalis Riau Mashuri MASHURI, Zulkarnain ZULKARNAIN, Zulfadil ZULFADIL, Suwondo SUWONDO	1766
4	Major Ambient Air Pollutants and Toxicity Exposure on Human Health and Their Respiratory System: A Review Gourav Kumar SINGH, Swapnil RAI, Nimisha JADON	1774
5	Environment and Economic Benefits through the Preference for More Open Commercial Policy Kanokwan CHANCHAROENCHAI, Wuthiya SARAI THONG	1788
6	Influence of the Demographic Regions on the Environment: Features and Development Trends Dametken TUREKULOVA, Lyazzat MUKHAMBETOVA, Berik BEISENGALIYEV, Kulman ORAZBAYEVA, Rimma SATKANOVA, Zhanna NURGALIYEVA	1796
7	South Batak Tradition for the Settlement of Environmental Disputes: A <i>Tumbaga Holing Letter Model</i> Anwar Sadat HARAHAP, Hardi MULYONO, Ahmad laut HASIBUAN, Taufik SIREGAR	1811
8	Regulation of Waste Management and Elimination of Accumulated Damage in the Countries of the Eurasian Economic Union Eleonora S. NAVASARDOVA, Andrey N. ZAHARIN, Kira V. KOLESNIKOVA, Roman V. NUTRIKHIN, Vladimir A. SHINKAREV	1826
9	Conceptual Bases of Business Activities' Management Grounded On Sustainable Development and Energy Self-Sufficiency of United Territorial Communities in the Context of the European Green Deal Implementation in Ukraine Ilona YASNOLOB, Stanislav BOIKO, Oleg GORB, Oleksandr POMAZ, Oleksii ZORIA, Svitlana PYSARENKO, Alla RUDYCH, Tetiana DIADYK, Viktoriia DANYLENKO, Yuliia KOZACHENKO	1838
10	The Legislative Shortcomings Aspects in the Jordanian Environmental Law. Comparison with International Law Omar EMAR, Hamzeh ABU ISSA	1850
11	Analysis of the Development of Innovative Entrepreneurship for the Assess Their Competitiveness and Environmental Impact Factors Julia VIKULENKO, Anargul BELGIBAYEVA, Oxana DENISSOVA, Gulzhan ABAUOVA, Aigul TULEMETOVA, Rysty SADYKOVA	1861
12	Criminal Liability of Holding Company in Environmental Crime in Indonesia Abdul Aziz ALSA, F.X. Adji SAMEKTO, PUJIYONO	1875
13	Institutional Environment for the "Green" Economy Development in Khanty-Mansi Autonomous Okrug–Yugra V. F. ISLAMUTDINOV, I. D. LEBEDEVA, E. M. BURUNDUKOVA, V. V. KOROSTELEVA, E. N. RAZDROKOV	1882

Editor in Chief

Ramona PÎRVU

University of Craiova, Romania

Editorial Advisory Board

Omran Abdelnaser

University Sains Malaysia, Malaysia

Huong Ha

University of Newcastle, Singapore,
Australia

Harjeet Kaur

HELP University College, Malaysia

Janusz Grabara

Czestochowa University of Technology,
Poland

Vicky Katsoni

Technological Educational Institute of
Athens, Greece

Sebastian Kot

Czestochowa University of Technology,
The Institute of Logistics and International
Management, Poland

Nodar Lekishvili

Tbilisi State University, Georgia

Andreea Marin-Pantelescu

Academy of Economic Studies Bucharest,
Romania

Piotr Misztal

The Jan Kochanowski University in
Kielce, Faculty of Management and
Administration, Poland

Agnieszka Mrozik

Faculty of Biology and Environmental
protection, University of Silesia, Katowice,
Poland

Chuen-Chee Pek

Nottingham University Business School,
Malaysia

Roberta De Santis

LUISS University, Italy

Fabio Gaetano Santeramo

University of Foggia, Italy

Dan Selişteanu

University of Craiova, Romania

Laura Ungureanu

Spiru Haret University, Romania

- 14 **Protected Forest Function Change Policy for Food Estate Land in Subang Indonesia** 1893
Iga Gangga Santi DEWI, Ana SILVIANA, Nur ADHIM, Mira NOVANA
- 15 **Improvement of Land Relations in the Context of Sustainable Development of Rural Areas in Ukraine** 1899
Svitlana SHARAPOVA, Tetiana LISOVA, Viktoriya BREDIKHINA, Olexii LIALIUK
- 16 **Green Brand Perceived Value: A Driver for Attitude toward Green Brand Extension** 1906
Elisabeth Rotua SIMAMORA, Farida INDRIANI, Budi SETIAWAN
- 17 **Management of the Company's Investment Projects in Anti-Crisis Management and Their Impact on the Environment** 1914
Nursulu ALASHBAIEVA, Dametken TUREKULOVA, Asemgul KAPENOVA,
Aliya ZHUNUSOVA, Raikhan SUTBAYEVA
- 18 **The Standardization Transformation of Industry Oriented Batik to Accelerate Competitiveness 4.0 and National Independence in Clothing Sector during New Normal** 1930
Muslichah Erma WIDIANA
- 19 **Environmental and Legal Regulation of Digitalization of Environmental Protection** 1941
Dauren BEKEZHANOV, Gulnura KOPBASSAROVA, Aktoty RZABAY,
Zhaukhar KOZHANTAYEVA, Indira NESSIPBAYEVA, Kanat AKTYMBAYEV
- 20 **Economic Model of Groundwater Damage Control in Semarang City: Prisoner's Dilemma Game** 1951
Bambang SISWANTO, FX SUGIYANTO, Akhmad Syakir KURNIA
- 21 **To The Study of the Structure of the Krasnodar Territory Contemporary Steppe Landscapes** 1961
Sergey B. KRIVOROTOV, Eduard Yu. NAGALEVSKY, Tatiana A. VOLKOVA,
Ekaterina V. GOLUBYATNIKOVA
- 22 **Preserving Traditional Village as a Symbol of Devotion to Nature** 1966
Bening Fathima Rabbaniya AMATILLAH, Yuliani Dwi LESTARI
- 23 **Analysis of the Influence of Ecology on Human Resources Management in the Healthcare System** 1980
Zhanar BAIGIREYEVA, Berik BEISENGALIYEV, Dmitry KICHA,
Shakizada NIYAZBEKOVA, Leila MAISIGOVA
- 24 **Sustainable Development of the Coastal Environment through Participatory Mapping of Abrasion-Prone Areas** 1997
Nur HAMID, Dewi Liesnoor SETYOWATI, JUHADI, Agustinus Sugeng PRIYANTO,
SUSWANTI, Muh. Arif ROYYANI, Elvara Norma AROYANDINI
- 25 **Mechanisms for Managing the Circular Economy in Subsoil Use** 2011
Lyudmila MOCHALOVA, Olga SOKOLOVA, Olga EREMEEVA
- 26 **Environmental Project Management in the Hospitality Industry in Russia** 2019
Andrey KOVALTCHUK, Konstantin A. MILORADOV, Elena Y. NIKOLSKAYA,
Marina GUNARE

Call for Papers Spring 2022 Issues Journal of Environmental Management and Tourism

Journal of Environmental Management and Tourism is an interdisciplinary research journal, aimed to publish articles and original research papers that should contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences.

Journal will publish original research and seeks to cover a wide range of topics regarding environmental management and engineering, environmental management and health, environmental chemistry, environmental protection technologies (water, air, soil), pollution reduction at source and waste minimization, energy and environment, modeling, simulation and optimization for environmental protection; environmental biotechnology, environmental education and sustainable development, environmental strategies and policies, etc. This topic may include the fields indicated above, but are not limited to these.

Authors are encouraged to submit high quality, original works that discuss the latest developments in environmental management research and application with the certain scope to share experiences and research findings and to stimulate more ideas and useful insights regarding current best-practices and future directions in environmental management.

Journal of Environmental Management and Tourism is indexed in SCOPUS, RePEC, CEEOL, ProQuest, EBSCO and Cabell Directory databases.

All the papers will be first considered by the Editors for general relevance, originality and significance. If accepted for review, papers will then be subject to double blind peer review.

Deadline for submission:	15 th February 2022
Expected publication date:	March 2022
Website:	https://journals.aserspublishing.eu/jemt
E-mail:	jemt@aserspublishing.eu

To prepare your paper for submission, please see full author guidelines in the following file: [JEMT Full Paper Template.docx](#), then send it via email at jemt@aserspublishing.eu.



DOI: [https://doi.org/10.14505/jemt.12.7\(55\).18](https://doi.org/10.14505/jemt.12.7(55).18)

The Standardization Transformation of Industry Oriented Batik to Accelerate Competitiveness 4.0 and National Independence in Clothing Sector during New Normal

Muslichah Erma WIDIANA
Bhayangkara University Surabaya, Indonesia
erma@ubhara.ac.id

Suggested Citation:

Widiana, M.E. (2021). The Standardization Transformation of Industry Oriented Batik to Accelerate Competitiveness 4.0 and National Independence in Clothing Sector during New Normal. *Journal of Environmental Management and Tourism*, (Volume XII, Winter), 7(55): 1930 - 1940. DOI: [10.14505/jemt.v12.7\(55\).18](https://doi.org/10.14505/jemt.v12.7(55).18)

Article's History:

Received 20th of August 2021; Received in revised form 26th of September 2021; Accepted 22nd of October 2021; Published 30th of November 2021. Copyright © 2021 by ASERS® Publishing. All rights reserved.

Abstract :

COVID-9 pandemic has occurred around the world including Indonesia. All Indonesian people fought COVID-19 with a lockdown. It was a regional quarantine policy by means of Large-Scale Social Restrictions and Enforcement of Restrictions on Community Activities. This limitation due to the COVID-19 pandemic causes the slowdown of economy of Indonesia and other countries around the world. This economic slowdown is comprehensive in all fields, including the batik business sector. At present, the Indonesian government is trying to implement a new normal policy. Thus, the economic impact caused by the pandemic does not cause a prolonged crisis. This research aimed to find a business strategy in the transformation of industry-oriented batik standardization to accelerate competitiveness 4.0 and national independence in the new-normal period of clothing sector. The method used to overcome the above problems was descriptive qualitative method. Data was collected through literature review, in-depth observation, and direct practice. Research results: business strategies that could be carried out in the transformation of batik standardization in welcoming the new normal era were: 1. Creating innovation 2. Development/recognition of existing products such as printing batik, *jumputan* batik or tie dye batik, and *Eco print* batik 3. Creating a new economic market by implementing the Blue Ocean strategy. 4 Paying attention to opportunities during the new normal 5. Developing a strategic marketing plan 6. Maintaining good communication with customers by utilizing social media, and 6. Promotion and marketing on line. This research is expected to be useful for readers, researchers, and the batik industry in responding to the new normal conditions after 1 (one) year of being hit by the COVID-19 pandemic.

Keywords: transformation; batik standardization; competitiveness; clothing; new normal

JEL Classification: L15; M37; Q56; Z11.

Introduction

This research aims to find a business strategy in the transformation of industry-oriented batik standardization to accelerate competitiveness 4.0 and national independence in clothing sector during new normal. This is motivated by the COVID-19 pandemic in 2020 that has hit the world including the Indonesian territory since the beginning of March 2020. It caused a prolonged economic crisis in all fields. The Indonesian minister of economic Sri Mulyani, that since the beginning of March 2020, the pandemic has had a bad impact on the economy. In the second quarter of 2020, the economy immediately contracted to minus 5.32% (Sri 2020). This condition has not yet known about how long it will last.

The new normal condition that is often referred to as the new normal phase creates uncertainty in all fields, especially in the business sector (Rio 2020). Entrepreneurs are confused and worried. they are busy predicting what will happen in the future, without having a definite clue about what changes will occur in every line of life, especially in the batik industry. In the end, small and medium entrepreneurs (UKM) must consider to have a business strategy in the new normal era. This is the main problem in this research.

1. Literature Review

All Indonesian people were fighting against the COVID-19 pandemic by modifying a regional quarantine policy (lockdown) into large-scale social restrictions commonly known as PSBB (Muhyiddin 2020). A pandemic is an epidemic (disease case) that has spread to various countries (Komite Penanganan COVID-19 dan pemulihan ekonomi nasional. 2020). The COVID-19 pandemic case is caused by the corona virus (<https://covid19.go.id/>). Furthermore, Indonesian government has decided on a stipulation, such as a new policy related to COVID-19 control with the term Enforcement of Restrictions on Community Activities, abbreviated as PPKM (Enforcement of restrictions on community activities). PPKM started on January 11 to January 25, 2021. The Indonesian Minister of Home Affairs Tito Karnavian explained that the government uses the term PPKM because the restrictions throughout the islands of Bali and Java are not implemented massively. Furthermore, the Minister of Home Affairs explained that the use of the term PSBB (Large-Scale Social Restrictions) can create the meaning of massive restrictions in the Bali and Java regions. Meanwhile, PPKM only applied in areas that meet the criteria (Rio 2020).

Either PSBB or PPKM, it is a limitation of human movement in communication, direct/face-to-face networking, the marketing process, and also the production process. This can lead to a decline in the Indonesian economy and even the global economy (Muhyiddin 2020). During the pandemic, the economy of Indonesia and the world has had a slowdown. The government predicts that the Indonesian economy would grow low in 2020, even negatively. Therefore, the Government is trying to implement a new normal policy so that the economic impact of the COVID-19 pandemic does not cause a prolonged crisis (Komite Penanganan COVID-19 dan pemulihan ekonomi nasional. 2020).

Ahmad Rosidi (2020) explained that the implementation of the new normal has been regulated by the Minister of Health of the Republic of Indonesia, Number HK.01.07/MENKES/ 328/2020 concerning Guidelines for the Prevention and Control of COVID-19. This Decree regulates the procedures for working in offices and industries to support business continuity, including the production and marketing processes in a pandemic situation.

Furthermore, Ahmad Rosidi (2020) explained that in facing the new normal, the Government implements several phases. Phase 1 on June 1, 2020: industry and services might operate according to health protocols. Malls were not allowed except for mask selling shops and health facilities. Phase 2 on June 8, 2020: Markets, shops and malls might operate, but they had to carry out health protocols. Phase 3 on June 15, 2020: The mall might operate but remained in phase 2. During the evaluation period of opening spas, salons, and others but still running health protocols. Schools began to open but with a shift system. Phase 4 would be held on July 6, 2020: economic activities have begun to operate, such as the opening of restaurants, bars, cafes, and others which are opened gradually while still implementing the COVID-19 health protocol. Religious activities were allowed, but the number of worshipers was limited. Phase 5 on 20-27 July 2020: there was valuation of 4 phases and opening of large-scale socio-economic activities. Several phases were carried out with the hope that by the end of July/early August 2020, all economic activities would have been operating normally. The implementation of the above phases, they are related to Government Regulation Number 21 of 2020 which regulates Large-Scale Social Restrictions (PSBB). It has not regulated the application of the new normal. Various attempts have been made, but the current pandemic situation hitting Indonesia/the world is unknown when to end.

Before the COVID-19 pandemic occurred, Indonesian batik industry had tremendous development. Since batik was recognized by UNESCO on October 2, 2009, batik has an intangible heritage belonging to Indonesia. Then batik developed throughout the world. Batik no longer belongs to the Indonesian nation; batik belongs to the world (Bramantijo and Karsam 2017). The Indonesian nation, especially the batik UKM (small and medium enterprises) entrepreneurs were worried about the development of batik at that time. In 2015, the implementation of the Asian free market caused the threat of Indonesian batik production to experience obstacles/competition with foreign batik products (Astuti and Hastuti 2019). Thus, one of the efforts to overcome this problem is to make the standardization of Indonesian batik (Badan Standardisasi Nasional. 2014).

Standard comes from the basic word standard, such as from the word standardization in Indonesian to become standardization (Bramantijo and Karsam. 2017). Imam Fahrudin (2018) explained that the word standardization is an attempt to determine the size that must be followed in producing the product. Standardization can be defined as the process of making standards.

In 2019-2020, a study entitled Batik Standardizations as Batik Artisan Empowerment Model for Marketing Process (Widiana, Karsam and Hidayati. 2020). In this study, a strategy for standardizing Indonesian batik was explained in order to be able to compete with foreign-made batik with:

1. Organization/Association/ Group Formation

2. Preparation of Standard Operating Procedures (SOP)
3. Licensing or Legality (Trademark and SIUP)
4. Quality assurance
5. Identification/labeling
6. Socialization and promotion
7. Supervision of government, employers/private organizations.

Meanwhile, SNI (Indonesian National Standard) for Indonesian batik as batik made in Indonesia (Batik mark) has been predetermined, such as: handwritten batik, Hand Stamped batik, and combined batik by Karsam (2014). The following is the batik-mark label.

Figure 1. batik-mark label of Handwritten batik



Source: Karsam 2019

Figure 2. Batik-mark label of Hand Stamped batik



Source: Karsam 2019

Figure 3. batik mark label of Combined batik



Source: Karsam 2019

Batik standardization above was a process/effort in order to preserve and develop Indonesian batik before the COVID-19 pandemic. After the COVID-19 pandemic, the production and marketing processes of batik had a problem/decline. Therefore, a new effort is needed in developing batik in the new normal era (Bramantijo, Karsam and Mahjudin 2018).

In facing the new normal era, there is a need for industrial-oriented batik standardization transformation. Transformation in Indonesian Dictionary (KBBi 2021) means changes in appearance (shape, nature, function, etc.) or changes in grammatical structures to other grammatical structures by adding, subtracting, or rearranging the elements. Thus, in facing the new normal era, it is necessary to be a change in the batik sector, both in the batik business process or the batik product process, including SNI batik.

Described by the Ministry of Industry (Keputusan Menteri Perindustrian. 2020) proposes the existence of an Indonesian National Standard (SNI) batik in three categories. This is necessary to make batik continues to grow. Director General of Small and Medium Industry (IKM) of the Ministry of Industry, Euis Saedah explained three categories of batik that need to be standardized. There are cultural batik, creative batik and industrial batik. "I have submitted the proposal to the SNI Design Team at the Center for Handicrafts and Batik," said Euis after opening the exhibition of the National Craft Council (Dekranas), Tuesday (22/11). This was also conveyed in the Surabaya Post Online, Wednesday, November 23, 2011 (Surabaya Post On line 2011). Three categories of SNI Batik Standards were made.

Cultural batik is batik that the process uses standards such as palace batik that has been passed down from generation to generation for hundreds of years. It is made using canting with wax, dyes, and basic motifs that refer to certain rules. Ministry of National Education conducts cultural batik development. Industrial batik is mass-produced batik. It requires a lot of labor. This industrial batik allows it to be made with printing techniques. The guidance is conducted by the Ministry of Industry. Meanwhile, creative batik media or materials used do not have to be cloth. It can use ceramics, wood, leather and so on. The guidance can be carried out by the Ministry of

Tourism and Creative Industries. Furthermore, Euis explained that SNI for batik so far only explained that SNI for batik in general using limited indicators such as color fastness, tensile test, and safety for its users (Surabaya Post Online 2011).

So far, batik entrepreneurs still do not have the same understanding. There are groups who think that if batik is made not according to the rules, then the result can't be called batik. For example, making motifs must use canting, while many also use brushes. The conclusion is "All batik that develops in Indonesia must be recognized. Hence, it needs to be three different SNI categories," he said.

Responding to the suggestion from Euis Saedah, Vita Gamawan Fauzi as Deputy Chair of the National Craft Council (Dekranas) (<https://dekranas.id>), explained that the proposal was quite good. Batik must continue to innovate because this has become a market demand (Safitri, Sarwono and Handayani 2015). If it cannot meet market demands, then batik can be abandoned by society. "As long as it is still produced domestically, various types of batik must be recognized. Do not let foreign products take advantage of it".

2. Methodology

The research method used in this research was normative research. It is library research by examining library materials related to the object under study. Besides, this research included two fields, namely the arts and marketing. Rohidi and Rohendi (2011) explained that visual, auditory, and kinetic are art data. Art data can be a combination of visual and audio data or all three. The data obtained are intra-aesthetic data that are explained as descriptive facts. Meanwhile, marketing data can be presented in both quantitative and qualitative forms.

This research used a qualitative descriptive method by obtaining data by direct practice, observation, literature review, and in-depth field observations. Reports were submitted in descriptive form. Researchers acted as subjects and objects of research. Researchers were marketing actors and batik craftsmen. To find out about marketing problems, it was conducted direct practice methods, both offline and online marketing, including product sales, motif development, technical development, and fabric function development.

3. Result and Discussion

After a year being hit by COVID-19 pandemic. The time was very confusing or worrying about the pattern of human life in the universe. To carry on human life, it is not only limited to living, but also supports each other. Limitation of movement, maintaining distance from each other, communication and so on make humans keep asking about when this condition will pass. The hope of entrepreneurs is a return to times like the time before the pandemic, as well as a new era that is often referred to as the new normal (Santoso 2020).

The new normal, that is popularly called the new normal phase, creates uncertainty, doubt, and panic, especially in the business sector. Entrepreneurs interpret what will happen in the future, without any definite guidance or guidance, what changes will appear in every line of life. The unclear about when this new normal occurs requires small and medium entrepreneurs (UKM) to continue to be creative in developing business strategies (Kartono 2020).

To welcome the new normal, several things must be conducted in the transformation of industry-oriented batik standardization to accelerate competitiveness 4.0 and national independence in clothing sector, namely:

3.1 Creating Innovations

When new normal begins, competition is absolutely getting tougher in an unstable market condition (Fadly, Utama and Utama 2020). The purchasing power is still not back to normal. Thus, the asset value will certainly decline. Responding to these conditions, hard work is not enough. The thing that must be conducted is to innovate in an effort to get back to normal. Not innovating, it is difficult to make products that can create new markets.

To create new innovations, one way is to carry out the performance of the research and development division (research and development). Innovation can be in the form of making a quality product but low cost (Santoso 2020). Can also create a simple but effective marketing/sales strategy. Innovation is not limited to just a business strategy but can take the form of a physical product (Wibowo, Karsam, Widiastuti and Siswadi 2019).

In the batik industry, one of the most recent inventions is the emergence of eco-printing batik.

3.2 Development. Recognition of The Products

The development/recognition of existing products can include several things below:

3.2.1 Expansion of the Indonesian National Standard for Batik

In fact, this discussion is still related to creating innovation. It refers to the meaning of innovation more emphasizes things that are new or novelty. Meanwhile, what is meant by development/recognition of an existing product is a product that is meant to have existed but has not yet received recognition. For example, Indonesian National Standard (SNI) batik as batik mark is handwritten batik, hand stamped batik, and combinate batik. Meanwhile, besides the 3 (three) techniques, there are batik is called printing batik, ikat batik, and also Eco print batik (Keputusan Menteri Perindustrian 2020).

As explained above, the Ministry of Industry proposes the existence of the SNI for batik in three categories. This proposal must be based on ideas, one of which is that batik continues to develop. Thus, batik should not be limited by certain rules or standards. For example, batik must be made with canting, the batik motif must have philosophical values so that batik as a legacy of its traditional values is not lost. If this continues to be maintained and does not want to get out of the grip, then it is certain that Indonesian batik products will lose to batik products from abroad.

Karsam (2014) explained in his article entitled *Pelestarian dan Ekspansi Pasar Batik Tulis Gedhog Tuban di Era Globalisasi*, that foreign-produced batik has entered the Tanah Abang market in Jakarta. The price is visually cheap, not inferior to batik made in Indonesia. To be able to keep up with competition, the thing that must be done immediately is to make innovations, especially innovation in production. The same thing was conveyed by Karsam (Karsam 2014) in his article entitled *Batik Tulis Gedhog Tuban: Pelestarian dan Ekspansi Pasar Untuk Menghadapi Masyarakat Ekonomi Asean*. It has been previously explained that the Director General of Small and Medium Industries (IKM) of the Ministry of Industry, Euis Saedah explained three categories of batik that need to be standardized, such as cultural batik, creative batik and industrial batik. "I have submitted the proposal to the SNI Design Team at the Center for Handicrafts and Batik," said Euis after opening the exhibition of the National Craft Council (Dekranas).

With the existence of 3 (three) proposed SNI, batik craftsmen no longer hesitate in developing batik, not only SNI ikat batik, batik printing, Eco print, but also works of art using batik media which is commonly referred to as creative (Irawan, Bayu and Alvin 2020). Here are some types of batik that need to be developed in the new normal era and obtain SNI (Indonesia National Standard).

1) Printing Batik

Sri Puji Astuti and Rani Hastuti (2019) in her article entitled *Identifikasi Persentase Printing, Batik Tulis Dan Batik Cap Di Blok Vip International Batik Center (IBC) Pekalongan*, explained that the existence of printing batik at the present time is in the third place after hand-written batik and stamped batik, with a percentage of 13.75%. This shows that printed batik plays a very important role in batik industry. Furthermore, Sri Puji Astuti and Rani Hastuti explained the results of their research, it showed that those consumers who have taste and understand about batik, as well as budget, prefer hand-written batik. Most consumers of this group are in the VIP IBC Pekalongan Block. Meanwhile, consumers who do not understand about batik, they want low prices and immediately choose printed batik.

Figure 4. Process of printed batik



Source: batikpekalongannahdia.blogspot.com/2017/05/jenis-jenis-batik.html

Angela Oscario (2020) in her research entitled *Simulasi Citra Nasionalis Melalui Fashion: Studi Kasus Batik Printing Dalam Gaya Hidup Post Modern Masyarakat Kota*, explained that Jakarta people have lost their regional identity. Batik printing is actually able to provide an artificial identity. The people of Jakarta have lived in a mirage in the post-modern era. The people of Jakarta are more concerned with surface appearance and style and have melted into one massive consumption. With this condition, batik printing gave their support to appear in a

post-modern style. In fact, this gives support to the existence of batik printing. Based on the results of the above research and on the advice of the ministry of industry, it is fitting for batik printing to get the SNI batik printing.

Figure 5. The example of printed batik



Source: <https://gambar.modebaca.com/2014/03/91-jenis-gambar-batik-printing-terbaik.html>

2) Batik Jumputan atau Ikat Celup

Ika Ayu Safitri, Sarwono, and Sarah Rum Handayani (2015) in their article entitled *Pengaplikasian Ikat Celup Tradisi Jawa Pada Pakaian Kerja Wanita* explained that the dyed Ikat or the community calls it ikat batik, is originally made in the form of a sheet of cloth not used for clothing. The dyed tie in Central Java is in the form of kemben, sindur, and dodot cloth. The tie-dye in Sumatra and Palembang is used as a scarf by women. Now, in its development, the dyed tie is used as clothing with a variety of motifs and colors. At the present time, tie dyed batik or tie-dyed batik is in great demand by the public for clothing and it has the opportunity to be developed. However, according to Ika Ayu Safitri, Sarwono, and Sarah Rum Handayani, tie-dyed bands have not been widely developed into work clothes. These opportunities provide ideas for writers to process tie-dye by exploring interesting visuals in work clothes.

Figure 6. Example of jumput/tie dye batik



Source: <https://masfkr.com/cara-membuat-batik-jumputan/>

Figure 7. Example of the process of pinching/tie-dyeing



Source: <https://br.pinterest.com/pin/429530883188493468/?d=t&mt=login>

Figure 8. Example of the process of pinching/tie-dyeing



Source: <https://lancangkuning.com/post/34340/proses-pembuatan-batik-jumputan.html>

Based on the results of the research above and on the advice of the ministry of industry, it is the same as printed batik, so ikat batik deserves to obtain SNI.

3) Ecoprint Batik

Djanjang Purwo Sedjati and Vincentia Tunjung Sari (2021) in their paper entitled *Mix Teknik Ecoprint Dan Teknik Batik Berbahan Warna Tumbuhan Dalam Penciptaan Karya Seni Tekstil* explained that batik must meet the demands and tastes of today's society for new products that can meet their tastes. It is only the needs for fashion and the needs of interior accessories that continue to grow, but works for the fulfillment of inner satisfaction. Therefore, a new creation is needed to meet the needs of market consumers.

Bayu Irawan and Muhammad Alvin (2020) stated that the technique of dyeing fabrics using natural dyes continues to develop. The new findings are ecodyeing and ecoprinting techniques. Ecoprinting and ecodyeing techniques are the process of transferring shapes and colors to fabrics through direct contact. The trick is to attach plants that have pigment or color content to cotton or natural fibrous fabrics, then steam or boil them in a pan. Types/parts of plants that can be used are leaves, twigs, flowers, seeds, bark, and so on. The work of Eco print or what is often referred to as batik Eco print depends on the creativity of the creator. Apart from choosing what plants contain a lot of color pigments, the composition in composing plants to become motifs must also be considered. Besides, the selection of plant forms also highly determines the results of the work.

Figure 9. The example of Eco print batik process



Source: <https://mediacenter.temanggungkab.go.id/berita/detail/eco-print-cukup-manfaatkan-daun-untuk-cetak-motif>

Figure 10. The example process of Eco print batik



Source: <https://www.balifinecraft.com/handicraft/ecoprint/kain-ecoprint-katun-dobby-tingi-31-detail>

3.2.2 The Use of Technology in the Production Process

Besides the copyright recognition of the 3 (three) works mentioned above, innovation in the batik process can be carried out by using technology that can accelerate production, for example making a cloth roller machine, as has been done by Nugroho Mardi Wibowo, Karsam, Yuyun Widiastuti, and Siswadi (2019) in the Regional Leading Product Development Program (PPPUD year 1) written in an article entitled *Pemberdayaan Ukm Batik Melalui Pengembangan Desain Motif Berbasis Kearifan Lokal: Upaya Membangun Brand Image Batik Jombang*. Furthermore, at PPPUD year 2, Nugroho Mardi Wibowo, Karsam, Yuyun Widiastuti, and Siswadi also made a batik oven room. This oven room functions to give color during the rainy season. Therefore, even when it rains, the production process continues. The work of Nugroho and his friends is written in an article entitled *Penciptaan Keunggulan Bersaing Ukm Batik Melalui Penerapan Teknologi Pengering Batik Dan Digital Marketing*.

In addition to creating new innovations, it is also possible to develop or bring back batik techniques that were once developed and then lost to time. An example is the *cocohan* technique batik. This *cocohan* technique in making batik was popular about 100 (one hundred) years ago in Kerek District, Tuban Regency. The *cocohan* technique tends to be applied to the Gedhog Tuban batik. This is because Gedhog batik uses handmade coarse cloth. This *cocohan* batik has not developed in Tuban for years. Then in 2017-2018 research and development of Gedhog batik with the *cocohan* technique were carried out by making a new canting, called canting *cocohan* (Bramantijo, Hidayat and Karsam. 2017). From the results of this research, the Gedhog batik technique of *Cocohan* has experienced tremendous development, even one of Mrs. Sarti's works has been exhibited in

Jakarta and the works were used by Indonesia's top fashion designer, Samuel Wattimena in the Indonesian Idol event (<https://prosiding-pkmcsr.org/index.php/pkmcsr/article/view/759>).

Besides bringing back the techniques that ever existed and then lost to the times, what can be conducted is to use local treasures to support the batik that has been produced, such as by making the packaging (packaging). For example, with the development of the Gedhog batik, the cocohan technique, it can be supported by making Gedhog batik packages using palm leaves. Palm leaves or siwalan leaves come from the palm tree as the main ingredient for Toak drinks. Toak is a typical Tuban drink. By using palm leaves as the packaging material for Gedhog Tuban batik, Gedhog Tuban batik has its own character and it is able to develop properly.

Bramantijo, M. Junaidi Hidayat, and Karsam (2017) have conducted research in the form of community service with his article entitled The Image Product of The Locality and Product Branding Towards Tuban Gedhog Handmade Batik Through Packaging. It was explained that using palm leaves as a material for packaging/package can increase customer attractiveness to Tuban Gedhog batik products.

3.2.3 Development. Utilization of Batik Fabric as a Wear Object

In general, this section is also included from innovation. However, in detail, it can be explained that even batik cloth is generally in the form of a long fabric or functions for clothes, pants or daily clothes. Sometimes batik fabric is used for umbrellas, sandals and others. Furthermore, during the COVID-19 pandemic, batik fabric was used for masks.

Making masks from batik fabric is an example of innovation adapted to current phenomena/conditions. Such things are expected. Thus, batik continues to develop. Bramantijo, Karsam, and Totok (2017) has made an innovation, namely utilizing the wasted gedhog woven cloth as a tote bag material. The results of this innovation are able to utilize and increase the economic value of the gedhog woven fabric.

Apart from the above mentioned, the making of fabric from batik cloth can be developed by combining plain cloth with batik fabric Or a combination of a set of clothes ranging from shoes, pants/skirts, clothes, veils, bags, and so on using one batik motif.

3.3 Establishing a New Economic Market by Implementing the Blue Ocean Strategy

Salim Kartono (2020) in his book entitled 'Crisis to Win Revolution', in the Entrepreneur Journal explained that: the absolute thing in business is to create an economic market. No matter how good the goods are produced, it is meaningless if they do not have a market. Therefore, it is mandatory to create a market that can provide profit. The strategy is to create innovation, see business opportunities, implement blue ocean strategies, namely creating new markets, planning business product marketing.

This Blue Ocean Strategy concept was published in the Harvard Business Review in October 2004 by W. Chan Kim and Renee Mauborgne. W. Chan Kim and Renee Mauborgne explained that instead of engaging in intense competition and trying to influence/steal consumers from competitors, entrepreneurs are better off creating new markets that cannot be compared with competitors.

Competing in a market that is already full is difficult to create a company that thrives on a long-term basis in a sustainable manner. The real opportunity is to create your own new and unique market.

In blue ocean concept, demand is created, not contested. Then, opportunities will emerge that can increase profits even in difficult situations. Therefore, this strategy focuses on everything that is innovative and cost efficient simultaneously and sustainably.

3.4 Considering to the Opportunities at New Normal

The purchasing power during the new normal may still be shrinking. Uncertain situations make people careful in conducting things at the new normal. People are selective and picky in shopping. People will keep their funds for fear of tightening liquidity on the financial markets. This can have an impact on entrepreneurs or SMEs being able to bite their fingers because demand does not come smoothly. Therefore, entrepreneurs must be smart in responding to opportunities when the new normal arrives.

The strategy that must be conducted in seeing new opportunities at the new normal is by observing the changing needs of the community in various fields, then diverting/ arranging new strategies according to the opportunities that arise. One thing that must be considered is that opportunities can arise from various other business fields. Opportunities do not always come from the fields we are currently working on.

Current conditions force entrepreneurs to think critically, work hard, get out of their comfort zone. You have to think outside the box if during this transitional period your business wants to survive.

3.5 Developing a Marketing Plan Strategy

In the new normal era, in the business world, marketing strategy is a new challenge. Entrepreneurs/business actors wait for each other to do business because of their doubts in facing an uncertain economic situation. entrepreneurs are required to move more aggressively so as not to lose momentum in looking for marketing opportunities during the transition period to the new normal (Santoso 2020).

To be able to seize opportunities in marketing in the new normal, a marketing plan is needed. In arranging the right marketing there are several factors that must be considered, namely: product value, consumer research, and doing good marketing. In addition to preparing a product portfolio, trying to get distributor support, affordable prices according to market segmentation (Santoso 2020). To conduct a marketing plan requires accurate calculations and support by online accounting software.

3.6 Maintaining Good Communication with Customers by Utilizing Social Media

An important thing for entrepreneurs to maintain communication is to understand what is needed by each customer. In this era, communication is getting easier, because of the support of sophisticated technology and the internet is able to communicate quickly without having to meet face to face or meet in person.

Therefore, MSME players must be able to take advantage of existing applications or software. There are so many applications today that can be used to maintain and establish communication for example a messenger application (WhatsApp). This application is equipped with video call technology. By utilizing this technology, we can maintain good communication between our customers and us. This application is often referred to as social media (social media).

In today's era, social media has become an effective medium or medium to market products/services. Affordable costs for all businessmen with a very wide range. Products can be marketed on target, yet the marketed content must be interesting.

3.7 Online Promotion and Online Marketing

An effort that can be conducted to increase the marketing of batik cloth in the new normal era in order to be competitive is through online promotion and marketing. Promotion in marketing must be conducted in any condition, especially during the COVID-19 pandemic. During this time, effective promotion is presented using digital. Hawangga Dhiyaul Fadly and Utama (2020) explained that Promotion must be conducted digitally. Online marketing, including promotion, can be done using applications such as Instagram, web, Facebook, WhatsApp, and line.

From the observations, it can be explained that at present, many modern markets and malls are experiencing losses due to the pandemic and rampant online sales. Denny Santoso, Founder and CEO of Tribelio.com in liputan6.com (<https://prosiding-pkmcsr.org/index.php/pkmcsr/article/view/759>) explained that during a pandemic, business is prioritized for online/digital sales. This requires a marketing strategy in order to attract customers. Either in offline or online marketing, Segmentation, Targeting, and Positioning (STP) must be considered. In marketing/sales offline, customers can choose and even try directly the items to be purchased. Meanwhile, in online marketing/sales it is better if an animated application is made. Thus, consumers can try on clothes or items to be purchased through the application. The application can be shaped like a game.

Conclusion

The conclusion of this research are as follow:

From the result of the research, it can be drawn the conclusion that to welcome the new normal era, several things must be conducted in the transformation of industry-oriented batik standardization to accelerate competitiveness 4.0 and national independence in clothing aspect, as follow:

1. Creating Innovation

The innovation created can include the results of the product as well as innovations in marketing.

2. Development/recognition of the products

a. The Expansion of SNI batik

At this time, SNI batik is as Indonesian batik mark. There are only 3 types, such as: hand written batik, hand stamped batik, and combined batik. Then, SNI batik can be developed to:

1) Printing Batik

2) Jumputan or Tie Dye Batik

3) Eco print Batik

b. The use of technology in the production process

- c. Development / utilization of batik cloth as a wear object
3. Creating a new market economy by implementing the Blue Ocean Strategy
4. Paying attention to opportunities when new normal
5. Developing a marketing plan strategy
6. Maintaining good communication with customers by utilizing social media
7. Online promotion and online marketing

Suggestions

1. Batik craftsmen or entrepreneurs are expected to immediately rise up to welcome the new normal era by thinking about what steps should be taken during the new normal today..

2. In the current/ new normal era, the ability to master technology is needed. In general, batik craftsmen are Indonesians who live in rural areas. They generally are lack knowledge and skills about technology. Therefore, it is suggested that they should learn about technology or cooperate with partners who are engaged in batik and who understand technology, such as academics. Without technology, batik production process becomes sluggish, including without marketing technology, batik can be left behind and even go bankrupt.

3. Readers or researchers who read this article are welcome to continue or develop this paper. Thus, batik in Indonesia is not inferior to batik made in foreign countries.

Acknowledgements

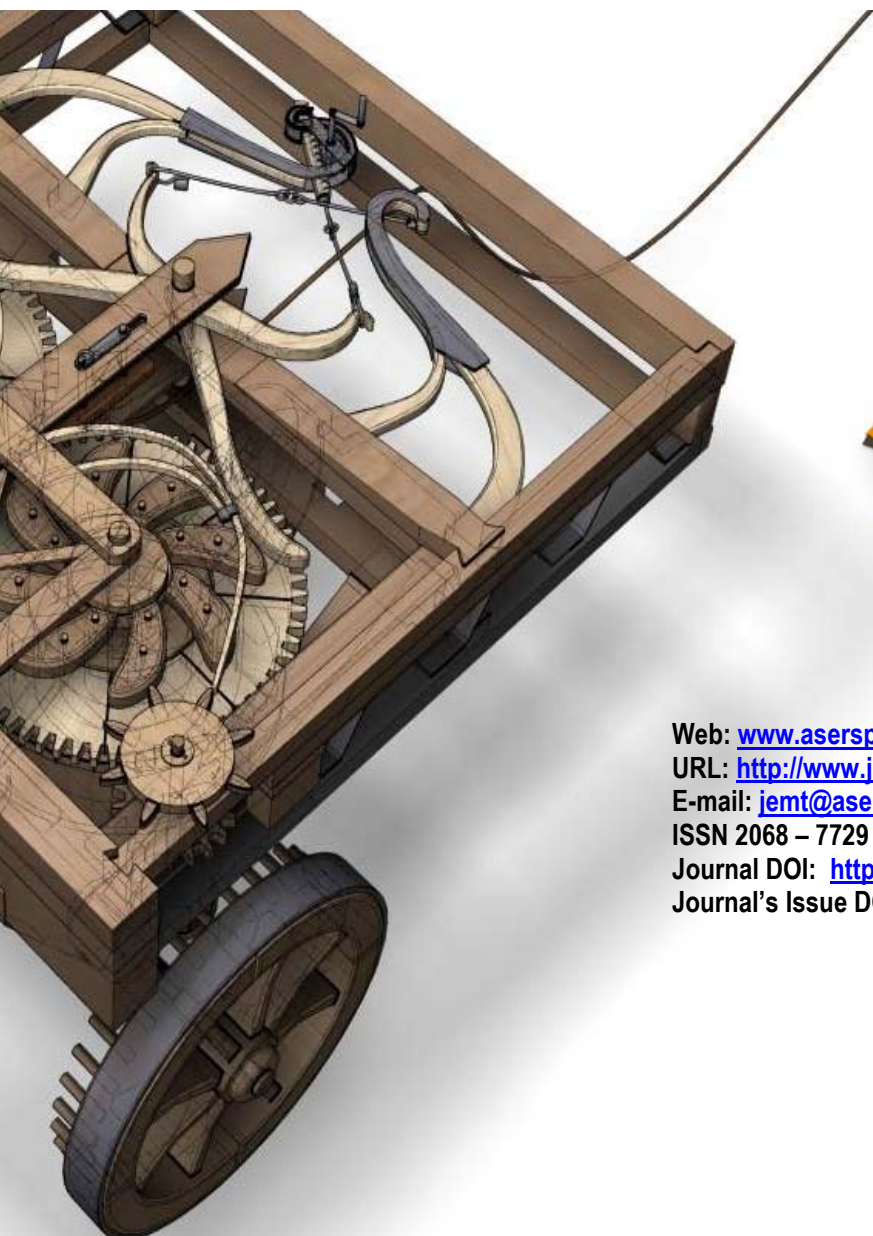
Thanks to the Directorate General of Higher Education regarding the research funding and community service in 2021 no. 238/E4.1/AK.04.PT/2021.

Reference

- [1] Astuti, Sri Puji, and Hastuti, R. 2019. "Identifikasi Persentase Printing, Batik Tulis Dan Batik Cap Di Blok Vip International Batik Center (IBC) Pekalongan." *Pekalongankota.Go.Id.* (in Indonesian)
- [2] Badan Standardisasi Nasional. 2014. "Pengantar Standardisasi (Ed-2)." Jakarta (in Indonesian)
- [3] Bramantijo, Karsam, and Totok, P. 2017. Tote Bag Berbahan Tenun Gedhog Sebagai Produk Penunjang Bagi UKM Tenun Dan Batik Gedhog Tuban. *Batoboh: Jurnal Pengabdian Pada Masyarakat* 2 (2 Oktober). Available at: <https://journal.isi-padangpanjang.ac.id> (in Indonesian)
- [4] Bramantijo, M. Junaidi Hidayat, and Karsam. 2017. "The Image Product of The Locality and Product Branding Towards Tuban Gedhog Handmade Batik Trough Packaging." In *6th International Seminar On Nusantara Heritage*. Denpasar Bali: Insitut Seni Indonesia Bali.
- [5] Bramantijo, M. Junaidi Hidayat, Karsam, and Mahjudin. 2018. Pengembangan Desain Motif Cocohan Dan Desain Kemasan Pada Batik Gedhog Tuban Sebagai Upaya Revitalisasi Dan Meningkatkan Daya Saing Produk Ukm." (in Indonesian)
- [6] Fadly, Hawangga Dhiyaul Utama, Utama. 2020. Membangun Pemasaran Online Dan Digital Branding Ditengah Pandemi Covid-19. *Jurnal Ecoment Global UGM. Kajian Bisnis Dan Manajemen* 5 (2). (in Indonesian)
- [7] Fahrudin, Iman. 2018. Mengenal Pengertian Standardisasi, Tujuan Serta Manfaatnya. www.Caraprofeser.Com. <https://www.caraprofeser.com/mengenal-pengertian-standarisasi/> (in Indonesian)
- [8] Irawan, Bayu, and Muhammad Alvin. 2020. Teknik Pewarnaan Alam Eco Print Daun Ubi Dengan Penggunaan Fiksator Kapur, Tawas Dan Tunjung. *Jurnal.Pekalongan Kota.Go.Id. Program Studi Teknik Batik, Politeknik Pusmanu Pekalongan.* (in Indonesian)
- [9] Karsam. 2014. Pelestarian Dan Ekspansi Pasar Batik Tulis Gedhog Tuban Di Era Globalisasi. *Jurnal Budaya Nusantara Budaya Adiluhung*, 1 (1): 41–53 (in Indonesian)
- [10] Kartono, Salim. 2020. Strategi Bisnis Yang Harus Dilakukan UKM Saat New Normal. *Jurnal Entrepreneur. Jurnal Entrepreneur*. Available at: <https://www.jurnal.id/id/blog/strategi-bisnis-yang-harus-dilakukan-ukm-saat-new-normal/> (in Indonesian)
- [11] Muhyiddin. 2020. New Normal Dan Perencanaan Pembangunan Di Indonesia. The Indonesian Journal of Development Planning. *Journal of Development Planning*, 4 (2). (in Indonesian)

- [12] Mulyani, Sri. 2020. Dampak PSBB: Luar Biasa Serius. Cnbcindonesia.Com. 2020. <https://www.cnbcindonesia.com/> (in Indonesian)
- [13] Nara, Rosmadi Maskoro Lucky. 2021. Penerapan Strategi Bisnis Di Masa Pandemi Covid-19. *Jurnal IKRA-ITH Ekonomika* 4 (1). journals.upi-yai.ac.id (in Indonesian)
- [14] Oscario, A.. 2020. Simulasi Citra Nasionalis Melalui Fashion: Studi Kasus Batik Printing Dalam Gaya Hidup Post Modern Masyarakat Kota. BINUS University. research-dashboard.binus.ac.id. (in Indonesian)
- [15] Rio. A. 2020. "Pemerintah Pakai Istilah PPKM Bukan PSBB, Ini Alasan Mendagri." www.tagar.id (in Indonesian)
- [16] Rohidi, and Tjetjep Rohendi. 2011. *Metodologi Penelitian Seni*. Semarang: Cipta Prima Nusantara.
- [17] Rosidi, A. 2020. Penerapan New Normal (Kenormalan Baru) Dalam Penanganan Covid-19 Sebagai Pandemi Dalam Hukum Positif. *Journal Ilmiah Rinjani* 8 (2). (in Indonesian)
- [18] Safitri, Ika Ayu, Sarwono, and Saram Rum Handayani. 2015. Pengaplikasian Ikat Celup Tradisi Jawa Pada Pakaian Kerja Wanita. *Jurnal Ilmiah Tekstil* 11 (1). (in Indonesian)
- [19] Santoso, D. 2020. Strategi Pemasaran Penting Demi Gaet Pelanggan Di Masa Pandemi. *Liputan6.Com*. 2020. <https://www.liputan6.com/bisnis/read/4411052/strategi-pemasaran-penting-demi-gaet-pelanggan-di-masa-pandemi> (in Indonesian)
- [20] Sedjati, Djandjang Purwo, and Vincentia Tunjung Sari. 2021. Mix Teknik Ecoprint Dan Teknik Batik Berbahan Warna Tumbuhan Dalam Penciptaan Karya Seni Tekstil. *Digilib.ISi.Ac.Id*. (in Indonesian)
- [21] Wibowo, Nugroho Mardi, Karsam, Yuyun Widiastuti, and Siswadi. 2019. Pemberdayaan Ukm Batik Melalui Pengembangan Desain Motif Berbasis Kearifan Lokal: Upaya Membangun Brand Image Batik Jombang. *Jurnal Sinergitas PKM & CSR* 4 (1). <https://ojs.uph.edu/index.php/JSPC/article/view/2094> (in Indonesian)
- [22] Widiana, Muslichah Erma, Karsam, and Kusni Hidayati. 2020. Batik Standadization as Batik Artisan Empowerment Model For Marketing Process. *European Journal of Business and Management*, 12 (27). Available at: <https://iiste.org/Journals/index.php/EJBM/article/view/54221>
- [23] *** 2015. "Batik Tulis Gedhog Tuban: Pelestarian Dan Ekspansi Pasar Untuk Menghadapi Masyarakat Ekonomi Asean." In *Seminar Nasional Pengembangan Budaya Nusantara Berbasis Industri Kreatif Menyambut Era Masyarakat Ekonomi Asean (MEA)*. Surabaya: Universitas PGRI Adi Buana Surabaya. <https://karyailmiah.unipasby.ac.id/category/prosiding-2/page/6/>
- [24] *** 2019. *Batik Dari Masa Keraton Hingga Revolusi Industri 4.0*. Surabaya: CV. Revka Prima Media.
- [25] *** 2020. Penciptaan Keunggulan Bersaing Ukm Batik Melalui Penerapan Teknologi Pengereng Batik Dan Digital Marketing. In *Prosiding PKM-CSR*. <https://prosiding-pkmcsr.org/index.php/pkmcsr/article/view/759>
- [26] <https://dekranas.id>
- [27] KBBI. 2021. "Kamus Besar Bahasa Indonesia." [Kbbi.Web.Id](http://Kbbi.web.id). 2021. www.Kbbi.web.id
- [28] Keputusan Menteri Perindustrian. 2020. "Kemenperin Usulkan SNI 3 Kategori Batik. <https://Kemenperin.Go.Id/Artikel/750/>, <https://kemenperin.go.id/artikel/750/>
- [29] Komite Penanganan COVID-19 dan pemulihan ekonomi nasional. 2020. "Apa Yang Dimaksud Pandemi?" <https://Covid19.Go.Id>. <https://covid19.go.id>
- [30] Surabaya Post Online. 2011. "Standar SNI Batik Dibuat Tiga Kategori." http://www.Surabayapost.Co.Id/?Https://Bsn.Go.Id/Main/Berita/Berita_det/3552/Standar-SNI-Batik-Dibuat-Tiga-Kategori 2011. [http://www.surabayapost.co.id/? https://bsn.go.id/main/berita/berita_det/3552/Standar-SNI-Batik-Dibuat-Tiga-Kategori](http://www.surabayapost.co.id/?https://bsn.go.id/main/berita/berita_det/3552/Standar-SNI-Batik-Dibuat-Tiga-Kategori) (in Indonesian)

ASERS



The logo for ASERS Publishing, featuring the word "ASERS" in a bold, orange, sans-serif font with a stylized fan-like graphic to the left, and the word "Publishing" in a smaller, orange, sans-serif font below it.

Web: www.aserspublishing.eu

URL: <http://www.journals.aserspublishing.eu/jemt>

E-mail: jemt@aserspublishing.eu

ISSN 2068 – 7729

Journal DOI: <https://doi.org/10.14505/jemt>

Journal's Issue DOI: [https://doi.org/10.14505/jemt.v12.7\(55\).00](https://doi.org/10.14505/jemt.v12.7(55).00)