

# Conceptual Model to Enhance Creativity of the Batik Industry

Arfan Bakhtiar<sup>1</sup>, Aries Susanty<sup>2</sup>, Sriyanto<sup>3</sup>, Okki Putri Handayani<sup>4</sup>

<sup>1,2,3,4</sup>Program Studi Teknik Industri, Universitas Diponegoro  
Jalan Prof. Sudarto, SH., Semarang, Indonesia

<sup>1</sup>arfbakh@yahoo.com

<sup>4</sup>keth\_galz69@yahoo.com

**Abstract** - Creative industry are defined as industry derived from the use utilization of creativity, skills and individual talents of individual to create wealth and generate employment by producing and exploiting individual creativity. Creative industry's contribution to National GDP is equal to 7.8% at 2002-2008<sup>[23]</sup>. Batik industry is one of the creative industry are included in the crafts sector. The purpose of this research is to develop a conceptual model to enhance creativity batik industry. This conceptual model was built based on four aspect, namely Press, Person, Process, and Product (4P). Press or creative organizational climate will stimulate the development of creative human resources (person) and creative process (process). The interaction between the creative process (process) with the creative human resources will produce a creative product (product). Creative products is the real object that can represent creativity.

**Keywords** – creativity, 4P of creativity, batik industry, creative industry

## I. INTRODUCTION

The Indonesian economy has not always rely on natural products, such as the commodity of oil, gas, minerals and other natural products. Indonesia also must develop and retain industries in non-oil sectors such as industry and manufacturing, commerce, tourism, and of course the creative industry. Creative industry's contribution to National GDP 2002-2008 is equal to 7.8%<sup>[22]</sup>

Creative industry as those industries which have their origin in individual creativity, skill and talent, to create new products and which have a potential for wealth and job creation through the generation and exploitation of intellectual property and content. The fourteen sectors of creative industry are advertising, architectures, art markets, crafts, design, fashion, film, video and photography, interactive games, music, performing arts, publishing and printing, computer services, radio and television<sup>[10]</sup>. Batik Industry is one type of creative industry from crafting.

Based on the fourteen sectors of creative industry, the craft is second creative industry sector after fashion which

contributes 33.70464 million during 2002 to 2006 or amounted to 24.09% after fashion for 46.3%<sup>[22]</sup>. Industries do not only compete in the global market by prices or quality products, but also based on innovation, creativity and imagination. Creativity is a key in the creative industry. Therefore, it is important to know the factors that influencing the improvement of creativity from internal side of organization, i.e organizational climates, human resources, and process and their impact to produce the creative products.

## II. LITERATURE REVIEW

Industry is the economic activity that processes raw materials, intermediate goods, and or finished goods into goods with higher value to its use (added value), including the activities of design engineering and industrial engineering<sup>[18]</sup>.

### A. Batik Industry

Riyanto et al explained that batik is a work of art on cloth, stained with hurdles, which is use wax as the color barrier. Based on that definition, it can be concluded that the difference between batik and textiles, lies in the manufacturing process<sup>[1]</sup>. There are some equipment that should be use in making batik, i.e *canting*, *wajan*, *anglo*, *gawangan*, *bandul*, *taplak*, and *saringan*. Raw materials in batik are fabric, wax, and dyes<sup>[24]</sup>. According to Murtihadi and Mukminatun in 1979, the process of making batik can divided into two, namely *batik tulis* and *batik cap*<sup>[1]</sup>. The steps of making batik on the mori must be done step by step. Each step can be done by different person but a piece of mori cannot be done by different person in the same time. Those steps of making batik are *nglowong*, *ngiseni*, *ngengreng*, *nerusi*, *nembok*, *mbliriki*, *mbabar* (*medel*, *mbironi*, *nyoga*), *nglorod*.<sup>[20]</sup> There are batik industries in the various sub-province and town in Java, especially Central Java, i.e. Pekalongan, Solo, Yogyakarta and Lasem. Batik industry in those cities usually a member of one group that is known as batik industry centres.

## B. Creativity

According to Olsen, creativity is the ability to create or be creative<sup>[7]</sup>. A more complete definition about creativity is given by Campbell. According to Campbell, creativity is an activity that produces something that is new, unprecedented (innovative) and useful (in terms of more practical, more ease, or give a better results)<sup>[3]</sup>. Creativity is related to but distinct from the intelligence, innovation, imagination, and insight<sup>[14]</sup>. Rhodes in 1961 explains that creativity as a whole entity, consists of four sections, i.e: (i) understanding the nature, characteristics or attributes of creative people; (ii) describes the stages of thinking used in the creative process; (iii) results of identification and quality of creative products; and (iv) the situation in the context of the press creative (or environment)<sup>[15]</sup>. In line with Rhodes, Torrance in the year 1993 argues that creativity requires an interactive relationship between "Person, Press, Process and Product" (4 Ps)<sup>[16]</sup>.

Torrance in 1979 and MacKinnon in 1978 also argued that creativity could not be seen as one-dimensional. Creativity does not only have one dimension, and is not only a result of what is present within an individual. Creativity is influenced by a multiply of variables such as settings, other people, time, and domain-specific knowledge (Torrance in 1979; MacKinnon in 1978; Treffinger in 1991; Harrington in 1990)<sup>[19]</sup>.

## III. RESEARCH METHODOLOGY

Research methodology of this study begin from define the problem, theme, literature review, purpose and output, and ending in the conceptual model of creativity. Objects of this research are batik industries in Solo, Pekalongan, Jogja, Lasem. The research methodology of this study as seen in the Fig. 1

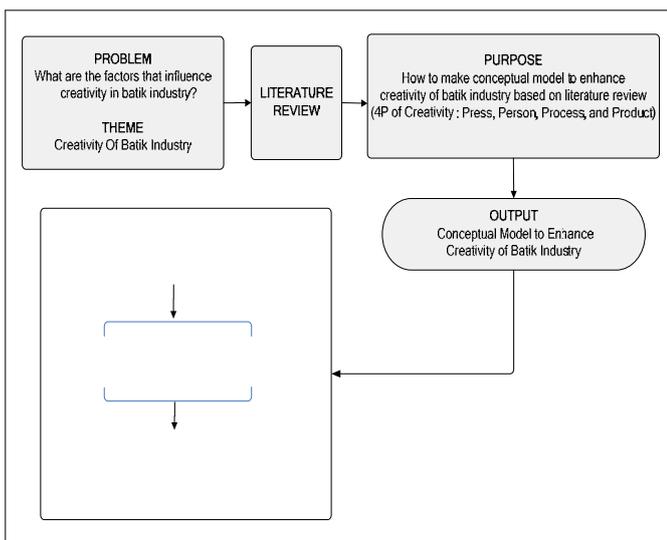


Fig 1. Research Methodology

## IV. CONCEPTUAL MODEL

Making the conceptual model to enhance creativity in batik industry is conducted by compiling an axiomatic theory research, which is useful to explain social phenomena or natural phenomena which became the centre of attention. Theory is a set of assumptions, concept, construct, definitions, and propositions which can explain a social phenomenon in a systematic way to formulate the relationship between concepts. Based on some previous empirical study, this research tries to make some propositions about creativity in batik industry.

1. Proposition 1: There are significant relationship between personal creative and organizational climate on innovative behaviour, and the results of creative thinking will bring up the ideas or the best ideas, which finally find or create a new product (novel) from an existing<sup>[11]</sup>.
2. Proposition 2: There are number of factors that affect creativity, namely the action of supervisor, organizational culture, and personality of employees<sup>[13]</sup>.
3. Proposition 3: organizational climates positively correlated with probability of a worker to be creative. Beside organizational climates, there are some factors that increase the opportunity of the worker to creative, namely teamwork, motivation, and interest of the employees<sup>[7]</sup>.
4. Proposition 4: There are number of factors that affect creativity in batik industries, namely human creative, creative work, creative organization, creativity in the use of environmental resources, and innovation<sup>[2]</sup>.
5. Proposition 5: Skilled craftsmen is the important factor in enhancing creativity in batik industry<sup>[4]</sup>.

Then, according to five propositions above, the hypothesis of this research can be arranged as follows:

1. Hypothesis 1: creative organizational climate has a positive effect to produce a creative human resources and the creative process<sup>[2,11,13,15,16]</sup>.
2. Hypothesis 2 : creative human resources has positive effect to produce creative product<sup>[2,4,7,11,13,15,16]</sup>.
3. Hypothesis 3: creative process has positive effect to produce creative product<sup>[2,11,15,16]</sup>.

The merger of the three hypotheses above will built a conceptual model, as seen in the Fig. 2.

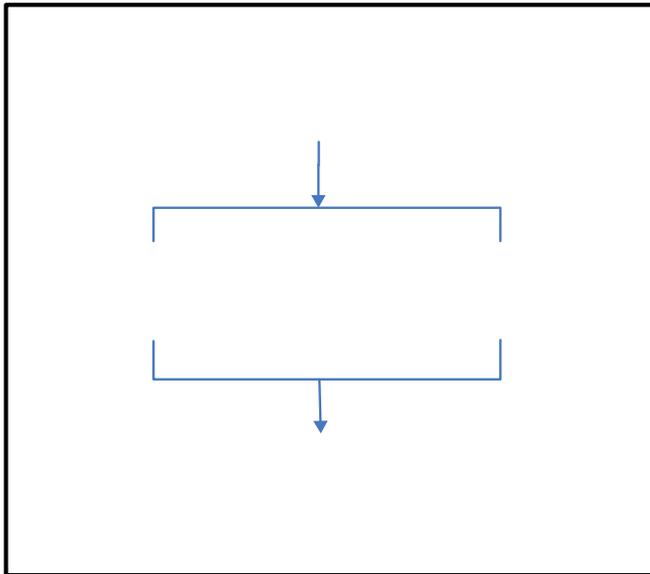


Fig 2. Conceptual Model to Enhance Creativity of Batik Industry

## V. VARIABLES IDENTIFICATION

Variables identified from the basic theory research, which was then adjusted to the conditions or empirical evidence in the field. Definitions of creativity depend on the terms of emphasis, creativity can be defined into four dimensions as the Four P's Creativity, namely the dimensions of Person, Process, and Product Press as follows<sup>[23]</sup>.

### 1. Creative Organizational climates (Press)

Press refers to the environment of organization where the person is in, or the product is produced, or the process occurs. It is concerned with the climates and everything that affects the climates where creativity takes place. This is where creativity and creative behaviour can flourish or be fatally hindered<sup>[15]</sup>. Ten dimensions of the creative climate by Ekvall in 1996<sup>[6]</sup> are

- Challenge (how emotionally involved, and committed are employees to the work).
- Freedom (how free employees are to decide how to do their job).
- Idea time (the amount of time employees have to elaborate ideas).
- Trust and openness (do employees feel safe speaking their minds and offering different points of view).
- Dynamism (the eventfulness of life in the organization).
- Playfulness (how relaxed is the workplace).
- Debates (to what degree do people engage in lively debates about the issues)
- Conflicts (to what degree do people engage in interpersonal conflicts).
- Risk-taking (the promptness of response to emerging opportunities and fear of failure).

- Idea support (are there resources to give new ideas a try). Hudson in 1966, Schaefer and Anastasi in 1968 and Simonton in 1984, states that scientific creativity may receive more benefit from preparatory activities, such as education and training, compared to artistic creativity<sup>[4]</sup>.

So, the creative organizational climate is organizational environment in which employees perceive these condition when perform their work: challenge, freedom, describes the ideas of time, trust and openness, of dynamism, relaxed and humorous, debate, conflict, risk taking, and provide support for the idea.

### 2. Creative Human Resources (Person)

Guilford in 1950 examined that creativity refers to the abilities that are characteristics of creative peoples. Hulbeck in 1945 examined that creative action is an imposing of one's own whole personality on the environment in an unique and characteristic way<sup>[23]</sup>. Creative human resources is the creative individuals who have traits as follows:

- Having motivation to be creative. Kreitner and Kinicki in 2005 states that people who have high creativity is usually the people who are highly motivated to use a lot of time to develop explicit and implicit knowledge about their areas of interest or about their positions<sup>[7]</sup>. Munandar in 1999 states that the tenacious and full of creative energy is a personal trait. Kaufman in 2003 argued that creative peoples have some positive characteristics, like open, motivation or never satisfied with present conditions.
- Having characteristics for creating, such as: an open, curious, challenged plurality, dare to take the risk, high imagination, have an interest in<sup>[7]</sup>. Munandar in 1999 also describe the personal characteristics of creative have the initiative, set up, confidence, courage and confidence in the establishment. West in 2002 argued that reflexivity is also the character of creative personalities.

Researchers have shown that there are certain personality traits associated with creative peoples (e.g., Hayes in the 1990; Runco, Nemiro, and Walberg in 1998; Stein in 1974). One such list of traits was comprised by technology educators DeVore, Horton, and Lawson in 1989 and its summarized that creative people have: (i)ability to change undesirable habits into desirable ones; (ii) a positive curiosity of the unknown; (iii) a positive attitude towards new experiences; (iv) ability to take negative criticism and turn it into constructive action; (v) ability to take risks fully knowing that his or her ideas may be attacked by others; (vi) a good sense of humour; (vii) ability to make complex relationships between unrelated items; (viii) motivation to solve problems on their own; (ix) high self-esteem and self-confidence in their abilities; and (x) ability to focus their

full attention on a particular problem for an appropriate<sup>[12]</sup>.

Creative human resource is the creative individual who have motivation and character to be creative. Spirit and tenacity are the traits of people who have the motivation to be creative. People who have the character to be creative are those who have curiosity, independent, confident, open, daring to take risks, reflexive, flexible, challenged with the plurality, interest and humorous

### 3. *Creative Process (Process)*

Munandar in 1977 examined that creativity is a process that manifest in self in fluency, in flexibility as well in originality of thinking<sup>[23]</sup>. Wallas in 1926 summarized creativity process in four steps:

- Preparation – identification an issue or problem, based on observation and study<sup>[5]</sup>; This is the first stage in which an individual identifies then investigates a problem from many different angles<sup>[12]</sup>.
- Incubation – involves the unconscious processing of information<sup>[14]</sup>. At this stage the individual stops all conscious work related to the problem<sup>[5]</sup>.
- Illumination – the moment when a new solution or concept is finally emerging<sup>[5,12]</sup>.
- Verification – this is the last stage at which time the solution is tested<sup>[12]</sup>; checking out the applicability and appropriateness of the solution for the originally observed problem<sup>[5]</sup>.

The creative process focuses on how creativity happen; a process that occurs in the human brain in discovering and developing a new, more innovative ideas and varied idea (divergent thinking). The creative process has four stages, namely preparation, incubation, illumination, verification.

### 4. *Creative Products (Product)*

Baron in 1976 examined that creativity is the ability to bring something new into existence<sup>[23]</sup>. Besemer and O'Quin in 1993 believe that the creative products is unique in that it combines both of the creative person and process into a tangible object representing the "true" measure of a person's creative ability<sup>[12]</sup>. Basemer dan Treffinger in 1981 explained creative products have three dimensions :

- The novelty dimension: this dimension defines the extent of newness a product possesses in terms of the number of new processes, new techniques, new materials, and new concepts. It also includes the influence the product has on future creative products. There are some element of novelty dimension: (i) germinal (the product is likely to suggest additional future creative products); (ii) original (the product is unusual or infrequently seen in a universe of products made by people with similar experience and training); and (iii) transformational (the product is so

revolutionary that it forces a shift in the way that reality is perceived by users, listeners or viewers).

- The resolution dimension: This dimension defines the degree to which the product fits or meets the needs of the problematic situation. There are some element of resolution dimension: (i) adequate (the product answers enough of the needs of the problematic situation); (ii) appropriate (the solution fits or applies to the problematic situation); (iii) logical (the product or solution follows accepted and understood rules for the discipline); (iv) useful: the product has a clear and practical application); (v) valuable (the product is judged worthy by users, listeners, or viewers because it fills a financial, physical, social or psychological need).
- Elaboration and synthesis dimension: this dimension defines the degree to which the product combines unlike elements into a refined, developed, coherent whole, statement or unit. There are some elements of elaboration and synthesis dimension: (i) attractive (the product commands the attention of viewer, listener or user); (ii) complex (the product or solution contains many elements at one or more levels); (iii) elegant (the solution is expressed in a refined, understated way); (iv) expressive (the product is presented in a communicative, understandable manner); (v) organic (the product has a sense of wholeness or completeness about it); and (vi) well-crafted (the product has been worked and reworked with care to develop it to its).

Based on the above explanation, Creative Product is a product that has the features, namely new, resolution, elaboration and synthesis.

In detail, some dimension and indicator of creative organizational climate, creative human resources, creative process and creative product can be seen in Table I until Table IV.

TABLE I  
CREATIVE ORGANIZATIONAL CLIMATE INDICATORS

Construct	Dimension	Element
Creative Organizational Climate is the organizational environment in which employees perceive these condition when perform their work: challenge, freedom, describes the ideas of time, trust and openness, of dynamism, relaxed and humorous, debate, conflict, risk taking, and provide support for the idea.	Freedom is the freedom of employees to decide how to do their job	Freedom
	Trust and openness is a sense of security in the opinion and express opinions	Trust
		Open
	Relaxed level of seriousness and humour is the organizational climate at the time of employment. This can be seen from environments that are not stiff when working, humorous, good communication, and friendly	Not rigid in their work
		Humorous
		Communication
	Support for the idea will be given to employees in the form of company support for innovation, provide training and appreciate to employees.	Support for innovation and warmth
		Appreciation
		Training
	The challenge is the participation, commitment and responsibility to company employees.	Participation
		Commitment
		Responsibility
	Dynamism is the life in the organization who can showed from the level of cooperation.	Cooperation
The debate is the involvement of employees in an exchange of ideas.	Exchange ideas	
When describing the idea is the amount of time required to elaborate ideas	Time	
Conflict is a problem that occurs in the company	Conflict	
Company dare to take risks fully	Risk-taking	

TABEL III  
CREATIVE HUMAN RESOURCE INDICATOR

Construct	Dimension	Element
Creative human resource is the creative individuals who have the motivation and character to be creative.	The motivation for creating one can be seen from the person's spirit and perseverance.	Spirit
		Diligent
	Character to be creative a person can be seen from: curiosity, self-reliant or independent, confident, open, daring to take risks, reflexive, flexible, challenged with the plurality, and humorist who has an interest owned by that person.	Curiosity
		Independent
		Confident
		Open
		Dare to take risks
		Reflexive
		Flexible
		Challenged plurality
		Humorous
		Imaginative
Interest		

TABEL IIIII  
CREATIVE PROCESS INDICATOR

Construct	Dimension	Element
Creative Process focuses on how creativity happens. The creative process is a process that occurs in the human brain in discovering and developing a new, more innovative and varied idea. There are four stages in creative process, namely preparation, incubation, illumination, and verification	Preparation of information gathering, date, and materials to solve problems..	Find issues
		Data collection
	Incubation is a phase of matter under the brooding nature of pre realize	Recognizing the problem solving process
	Illumination is the stage of the emergence of ideas or solving problems.	Appears inspiration / ideas
Verification is the evaluation stage of the emergence of the idea of critical activities		Evaluate ideas critically

TABEL IVV  
CREATIVE PRODUCT INDICATOR

Construct	Dimension	Element
Creative Product is a product that has the features: new, resolution, elaboration and synthesis	New. The new product has the characteristic: germinal, original, transformational	Original
		Germinal
		Transformational
	Resolution defines the extent to which such products can meet the requirement, so that the product should be adequate, suitable or match, useful, valuable and logical.	Adequate
		Match
		Logical
		Useful
		Valuable
	Elaboration and synthesis define the extent to which these products can combine various elements, so that these products should be: interesting, complex, elegant, expressive, complete and properly processed or well-crafted.	Interesting
		Complex
		Elegant
		Expressive
		Complete
		Well-crafted

## VI. CONCLUSIONS

Creativity is a key element in the creative industry. Increased creativity batik industries involves four aspects, namely creative organizational climates, creative human resources, the creative process and creative products as a measure of creativity.

1. Creative organizational climate is organizational environment in which employees perceive these condition when perform their work: challenge, freedom, describes the ideas of time, trust and openness, of dynamism, relaxed and humorous, debate, conflict, risk taking, and provide support for the idea.
2. Creative human resource is the creative individuals who have motivation and character to be creative. Spirit and tenacity are the traits of people who have the motivation to be creative. There are some character of creative people, i.e: curiosity, self-reliant, confident, open, daring to take risks, reflexive, flexible, challenged with the plurality, have an interest and humorous.
3. The creative process focuses on how creativity occurs; a process that happens in the human brain in discovering and developing a new innovative and varied idea (divergence think). The creative process has four stages, i.e: preparation, incubation, illumination, verification.
4. Creative product is a product that has certain features, i.e: new, resolution, elaboration and synthesis.

Creative organizational climates (press) will stimulate the creative human resources (person). The interaction between the creative process (process) with the creative human resources will produce a creative products (product). Creative product is the real object that can represent the level of creativity.

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