Factors Affecting Small Entrepreneurs’ Intention to Implement Green Production Processes

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1. INTRODUCTION

Recently, environmental issues are become an issue that is hotly discussed and urgent to be resolved. Environmental issues consist of climate change, sustainability issues, and preserving natural resources. One of the environmental pollution issues that has emerged is water pollution due to the batik production process. This pollution is caused by waste resulting from batik dyeing, which is not processed properly by entrepreneurs, so when the waste is thrown into rivers, it is still dangerous for the environment (Kusna, 2021). Water pollution due to the production process of the batik industry is mostly contributed by the printing batik industry, while written batik does not produce as much pollution. However, as more and more batik production is carried out, the industry’s contribution to environmental pollution increases. Therefore, managing batik production waste remains an important thing to pay attention to.

Zabelina et al. (2023) found that green entrepreneurs have characteristics that tend to think more critically about the past, have a long-term perspective, and focus more on future events that may occur. They tend to worry more about the future than entrepreneurs who are not green. Green batik entrepreneurs are those who pay attention to environmental issues, especially managing their production waste so that it does not pollute the environment. In a preliminary survey conducted through interviews with hand-written batik business actors, researchers found constraining factors that were the reason why they had not implemented green behavior in the production process optimally. This factor is the procurement of waste processing infrastructure, which is very expensive for them. Meanwhile, they face price competition with the batik printing industry, which can provide cheaper prices because the batik printing production process is faster and...
cheaper. Apart from that, from the results of the initial interview, there is currently no external push that requires strict implementation of green production processes, either from the customer or the government. Based on this background, this research will focus more on the psychological factors of batik entrepreneurs as determinants of green behavior intention in carrying out the production process.

There is still little research that examines the motivation of entrepreneurs to implement green behavior in carrying out their business processes (Demirel et al., 2019; Zabelina et al., 2023). In Indonesia, there has not been much research on the motivation for green behavior for small and medium entrepreneurs. For large public companies, Ramadhan et al. (2021) showed that the motivation for green behavior in large companies is more motivated by compliance with regulations. Seeing this fact, it is important to carry out research on motivational factors in small entrepreneurs to fill the current research gap (Karsana et al., 2022).

This research aims to explore the psychological factors that influence handwritten batik entrepreneurs in paying attention to managing their production waste. (Zabelina et al., 2023) stated that so far, research on the behavior of green entrepreneurs has paid more attention to external factors that influence their motivation and has not done much exploration of the internal (psychological) factors of these entrepreneurs. We hope that this research will provide benefits for theory and practice. From a theoretical perspective, this research will be an initial finding related to the psychological factors that influence batik entrepreneurs to manage the production process based on green behavior principles. From a practical perspective, the results of this research can become material for developing a model of assistance to batik entrepreneurs with the aim of increasing awareness in managing their production waste.

This research aims to answer the research question, of whether Green Personality, Social Norm, Peer Influence, Subjective Norm, and Perceived Behavior Control can predict Green Behavior Intention in Batik entrepreneurs in carrying out the production process.

2. Theoretical Review

2.1. Regulations on Environmental Management in Indonesia

In Indonesia, environmental management is regulated in Law Number 23 of 1997 which was amended by Law Number 32 of 2009 concerning Environmental Protection and Management. The Law states that environmental protection and management is a systematic and integrated effort carried out to preserve environmental functions and prevent environmental pollution and/or damage, which includes planning, utilization, control, maintenance, supervision, and law enforcement. In Article 22(1) of this Law, it is stated that every business and/or activity that has a significant impact on the environment is required to have an amdal (environmental impact analysis). Law Number 32 of 2009 has been changed to Law Number 11 of 2020 concerning Job Creation (UU Cipta Kerja).

The implementation of this Law is regulated in Government Regulation Number 22 of 2021 concerning the Implementation of Environmental Protection and Management. In Article 4 of PP Number 22 of 2021, it is stated that every business plan and/or activity that has an impact on the environment is required to have an Amdal, UKL-UPL (Environmental Management Efforts and Environmental Monitoring Efforts), and SPPL (Statement of Management and Monitoring Capability Environment). If we look at these regulations, it seems that treatment is not differentiated between large, medium, small, and micro companies, so currently, there is no priority for MSMEs to obtain facilities to ease the application of these regulations. This may result in MSME players feeling it is difficult for them to obtain business permits. Therefore, the government has made a policy of providing assistance to MSMEs in obtaining business permits, including in preparing documents as environmental management requirements.

2.2. Theory of Attitude and Behavior and Theory of Planned Behavior

The theory of attitude and behavior was developed by (Triandis, 1971). A person's behavior is influenced by interest in behaving, while interest is influenced by attitudes, social rules, and habits. (Triandis, 1971) states that human behavior is determined by several factors, namely individual attitudes, guidelines for things to be done (social rules), and habits that are carried out. Human behavior is a very complex concept, so it is not easy to explain it. The theory of attitudes and behavior is in line with the Theory of Planned Behavior (TPB) developed by (Ajzen, 1991), which explains the factors that determine human behavior. This research wants to explore the factors that are suggested to influence the desire of batik business actors to carry out green behavior in the production process. Attitude theory focuses on the role of an individual's attitude toward an issue in shaping intentions and behavior. The variables of Green Personality are very relevant in this context because they can influence individual attitudes toward environmental issues.

The Theory of Planned Behavior includes factors such as Attitude, Social Norms, Subjective Norms, and Perceived Behavior Control. This theory says that behavior is influenced by intention, which is in turn influenced by attitude (positive/negative attitude towards behavior), subjective norms (perceptions of social norms and peer influence), and perceived behavior control (perceptions of individual control over behavior). In the context of green behavior, this factor can influence business actors to have an interest in behaving sustainably (green behavior). Previous research used TPB to explain customer motivations for choosing green hotels (Verma & Chandra, 2018), and buying green products (Yadav & Pathak, 2016).

3. Formulation of Hypothesis

3.1. The Influence of Green Personality (GP) on Green Behavior Intention

Green Personality (GP) refers to individuals who have a high level of environmental awareness. They tend to care about environmental issues, such as climate change,
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sustainability issues, and preserving natural resources. A Green Personality reflects a person’s attitude towards environmental sustainability (Paul et al., 2016) stated that attitude has a strong and positive influence on a person’s intentions. Several studies show that attitude toward the environment influences purchasing behavior for green products or services (Schlegelmilch et al., 1996; Verma & Chandra, 2018; Yadav & Pathak, 2016). Research involving the measurement of individuals’ personality and behavioral intentions towards environmentally friendly production can provide insight into how certain personality characteristics, such as the level of environmental awareness, can influence individuals’ intentions to behave more environmentally friendly. Understanding the relationship between personality and human behavior towards the environment is an exciting area of research in environmental psychology. This research suggests that green personality has a positive influence on green behavior intention. Individuals who have environmental awareness will consider the impact of environmental damage on life. This green personality will then increase the intention to behave in a way that supports environmental friendliness. Based on this analysis, the following hypothesis can be formulated:

H1: Green personality influences an individual’s intention to behave in the green production process.

3.2. The Influence of Social Norms (NSOS) on Green Production Behavior Intention

Social norms are norms or rules that apply in a particular social environment regarding behavior that is considered appropriate or inappropriate for that social group. Social norms can influence Green Behavior Intention by describing environmentally friendly behavior as an expected norm in a particular social environment. If social norms emphasize the importance of green behavior, then individuals will have a stronger intention to follow these norms (Jansson et al., 2010) found that social norms influence consumers’ desire to buy green products (Khare, 2015) states that social factors are a very important factor in predicting consumer behavior in buying green products (Kalafatis et al., 1999) used TPB to understand the influence of social and personal norms and perceived behavioral control on the desire to buy green products (Khare, 2015) states that social influence is a predictor of purchasing green products (Lee, 2008) states that green behavior in purchasing products is determined by social influence, environmental concern, self-image, and perceived environmental responsibility. Among these factors, social influence is the strongest predictor. Entrepreneurs who feel that their social norms require green behavior will also be motivated to behave greenly. Based on this analysis, the following hypothesis can be formulated:

H2: Social Norms influence an individual’s intention to behave in the green production process.

3.3. Peer Influence (PI) Effect on Green Behavior Intention

Peer Influence refers to influence and encouragement that comes from friends or peers. In the context of green behavior, individuals tend to be inspired or influenced by their friends to adopt more environmentally friendly behavior, including in the production process. This hypothesis reflects the belief that friends or peers who demonstrate pro-environmental behavior can motivate individuals to have stronger intentions to do the same. (Khare, 2015) shows the results that peer influence influences individual behavior to purchase green products. An entrepreneur who sees their friends carrying out an environmentally friendly production process will feel motivated to take part in this action. Based on this explanation, this research formulates the following hypothesis:

H3: Peer influence effect on an individual’s intention to behave in the green production process.

3.4. Influence of Subjective Norms (NSUB) on Green Behavior Intention

Subjective norms refer to an individual’s perception of whether important others (e.g., friends, family, coworkers) support or oppose a particular behavior (Ajzen, 1991). Subjective Norm is a concept in the Theory of Planned Behavior. This theory is used to understand individual behavior and their intentions in various contexts. Subjective norms are very relevant for predicting an individual’s desire to behave greenly. In the context of green behavior, subjective norms reflect the extent to which entrepreneurs believe that important people in their lives support sustainable actions in the production process. If entrepreneurs feel that their subjective norms are positive, meaning that people they consider important support green behavior, then this can strengthen their intention to adopt green behavior. Entrepreneurs often look to their business peers, partners, and customers as important reference groups. If this group has positive norms related to sustainable production practices, then this may influence entrepreneurs’ intentions to follow these norms. Subjective norms are an important factor that determines a person’s intentions (Dean et al., 2012). If subjective norms indicate that important individuals in the entrepreneur’s life expect or support sustainable behavior, the entrepreneur may feel social pressure to conform to these expectations. This social pressure may influence their intention to take environmentally friendly actions in the production process. Previous research shows that Subjective Norm is positively related to Green Customer behavior (Verma & Chandra, 2015), but other research shows that the influence of Subjective Norm on Green Consumer Behavior is not significant ((Paul et al., 2016; Taufique & Vaithianathan, 2018). Based on this explanation, this research formulates the following hypothesis:

H4: Subjective norms influence an individual’s intention to behave in the green production process.

3.5. The Influence of Perceived Behavior Control (PBC) on Green Behavior Intention

Perceived Behavior Control (PBC), is one of the key elements in the Theory of Planned Behavior. PBC refers to an individual’s perception of the extent to which they have control over the behavior they will undertake. PBC is a person’s perception of whether a certain behavior is difficult or easy to carry out (Ajzen, 1991; Emekci, 2010).
In the context of Green Intention Behavior, an entrepreneur who feels that they have control or influence over their behavior in carrying out environmentally friendly production processes will have a stronger motivation to implement environmentally friendly business practices. PBC also involves perceptions about how easy or difficult it is for them to carry out environmentally friendly business practices. The higher an individual’s perceived control over green behavior in the production process, the stronger their intention to adopt it. This means that if an entrepreneur feels that they have complete control over the use of environmentally friendly materials, waste management, or energy efficiency in their production, they tend to have a stronger intention to make decisions and implement those green production practices. They will be encouraged to look for ways to improve their production processes, reduce environmental impact, and increase resource efficiency (Emekci, 2019), and (Taufique & Islam, 2021) found that PBC is the variable that has the greatest influence on consumer behavior to buy green, environmentally friendly products. Based on this explanation, this research formulates the following hypothesis:

H3: Perceived Behavior Control influences an individual's intention to behave in the green production process.

### 4. Methods

This is a quantitative research, which analyzes the factors that motivate batik business actors to carry out environmentally friendly production process activities. This type of research is an explanatory causality study. The data collection technique was carried out using a survey method via a questionnaire.

The population of this research is Batik business actors in Sleman Regency, Yogyakarta, Indonesia. Sampling selection was carried out using the convenience sampling method, namely, giving questionnaires to respondents who were willing to fill out the questionnaire. The respondents in this research were 30 batik business actors.

Variables in this research are Green Behavior Intention (GBI), Green Personality (GP), Social Norm (NSOS), Peer Influence (PI), Social Subjective (NSUB), and Perceived Behavior Control (PBC). PBC is a person’s perception of whether a certain behavior is difficult or easy to carry out (Ajzen, 1991), (Emekci, 2019). According to (Ajzen, 1991), behavioral intentions indicate a person’s level of determination and readiness to act so that his behavior can be predicted with precision, while Subjective norms refer to an individual’s perception of whether important others (e.g., friends, family, coworkers) support or oppose a particular behavior; Social norms are norms or rules that apply in a particular social environment, regarding behavior that is considered appropriate or inappropriate for that social group. Green Personality (GP) refers to individuals who have a high level of environmental awareness (Khare, 2015). Peer Influence refers to influence and encouragement that comes from friends or peers (Khare, 2015). In the context of green behavior, individuals tend to be inspired or influenced by their friends to adopt more environmentally friendly behavior.

### 5. Results

#### 5.1. Descriptive Statistics

Table I presents the characteristics of respondents. There were 30 respondents, consisting of 20 respondents or 67 percent were women, and 10% or 33% of respondents were men. The educational level, 22 people are high school graduates, 2 people are Bachelor’s Degree graduates, 4 people are Junior High School (SMP) graduates, and 2 are Elementary School graduates. The length of time they worked, 2 people (6.7%) less than 1 year, 5 people (17%) 1–3 years; and over five years as many as 15 people or 50%. Gender Woman 20 67% Man 10 33% Last education Bachelor’s degree 2 6.7% Senior high school (SMA) 22 73% Junior high school (SMP) 4 13% Elementary school 2 6.7% Length of work (year) <1 2 6.7% 1–3 5 17% 3–5 8 27% >5 15 50% Note: Source: Data analyzed, 2023.

Each variable is measured with a questionnaire instrument in the form of questions. GBI uses 9 questions, PI uses 4 questions, NSOS uses 4 questions, NSUB uses 10 questions, and PBC uses 4 questions.

Variables are measured using a Likert scale with 5 points (5 = Strongly agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1 = strongly disagree). Instrument validity testing was carried out using Pearson Product-moment correlation. Question items are considered valid if the calculated r is greater than r table = 0.361 (df = 28; α = 0.05). Invalid items were not included in the analysis. Reliability testing uses Cronbach Alpha >0.6. The instrument test results show that all research instruments meet the validity and reliability criteria.

Data normality testing was carried out using the one-sample Kolmogorov-Smirnov Test. The results show that the data is not normal, as indicated by Asymp. Sig. (2-tailed) = 0.000 < 0.05. Because the data is not normally distributed, hypothesis testing cannot be done using parametric statistics, such as regression, which requires normally distributed data. Therefore, this research uses non-parametric analysis, namely Kendall’s Tau correlation and Spearman’s rho. This analysis is used to see the relationship between variable GBI and each variable that is hypothesized to influence it, namely GP, NSOS, PI, NSUB, and PBC.

Table II shows the descriptive statistics of the Total items of variables used. Variables include GBI, GP, NSOS, PI, NSUB, PBC. The table shows the mean, minimum, maximum, and Std Deviation values.
Variables are measured using a Likert scale with 5 points (5 = Strongly agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1 = strongly disagree). Instrument validity testing was carried out using Pearson Product-moment correlation. Question items are considered valid if the item is significantly correlated with the total item score, namely the r coefficient value calculated is greater than the r table. The r table in this study is $r = 0.361$ (df = 28; $\alpha = 0.05$). Reliability testing uses Cronbach Alpha $>0.6$. The instrument (Question) is considered reliable if the Cronbach Alpha value is more than 0.6 ($>0.6$). Table III shows the instrument test results. The table shows that all research instruments meet the validity and reliability criteria.

Table III shows the results of the data normality test. Data normality testing was carried out using the One-sample Kolmogorov-Smirnov Test. The results show that the data is not normal, as indicated by Asymp Sign (2-tailed) $= 0.000 < 0.05$. Because the data is not normally distributed, hypothesis testing cannot be done using parametric statistics, such as regression which requires normally distributed data. Therefore, this research uses non-parametric analysis, namely Kendall's Tau correlation, and Spearman's rho. This analysis is used to see the relationship between the Variable of Green Behavioral Intention and each variable that is suggested to influence it, namely NSOS, GP, SUBN, PI, and PBC.

5.2. Hypothesis Test Results

Hypothesis test results are presented in Table IV, indicating the correlation values, Kendall's Tau, and Spearman's rho, between GBI and GP, GBI and NSOS; GBI and PI; GBI and NSUB; GBI and PBC. The hypothesis is supported if the correlation coefficient is significant ($p < 0.05$). From Table IV, it is known that the GP, PI, NSUB, and TPBC variables have a significant correlation coefficient, while the NSOS variable is not significant. Thus, it is concluded that this research supports hypotheses H1, H3, H4, and H5 and rejects H2.

6. Discussion

This research aims to determine the factors that influence the intention to behave green in the production process for Batik entrepreneurs. The research results show that the factors that influence Green Behavioral Intention are Green Personality, Peer influence, Subjective Norm, and Perceived Behavioral Control.

Green Personality is a person's attitude towards green behavior. Someone with a positive attitude toward green behavior has a higher likelihood that they will have the intention to behave in accordance with green behavior. (Paul et al., 2016) stated that attitude has a strong and positive influence on a person's intentions. This research supports (Paul et al., 2016), where statistical results show that Green Personality influences green intention behavior.

The research results show that social norms have no effect on green behavior intention. Social norms are an individual's tendency to behave in accordance with the social norms that exist in the individual's environment. This research fails to support H2. These results are not in accordance with the results of previous research (Khare, 2015; Kalafatis et al., 1999; Park & Sohn, 2012). Social norms are social rules that are generally accepted in a particular group or society. Social norms often reflect social expectations in a broader scope. The existence of Batik entrepreneurs in this research is more oriented at the micro, local, or family scale, so social norms in a broad scope may not be very relevant in encouraging sustainable behavior. This is also reinforced by their educational background, most of whom are high school graduates.

This research supported H3. The batik makers in this study were influenced by their close friends and fellow batik craftsmen. Their community is more homogeneous and local, encouraging peer influence to become a stronger factor in determining their behavior. This is also confirmed by research by (Karsana et al., 2022) that the motivation of batik entrepreneurs to carry out social responsibility is more motivated by a high sense of solidarity among their close colleagues.

This research also shows that subjective norms influence green intention behavior. Subjective norms reflect the extent to which entrepreneurs believe that important people in their lives support sustainable actions in the production process. If entrepreneurs feel that their subjective norms are positive, meaning that people important to them support green behavior, then this can strengthen their intention to adopt sustainable behavior.

Analysis results show that H5 is supported. PBCs influence green intention behavior. The statistical results also show that the effect is the strongest when compared with other variables (correlation coefficient $= 0.471; p = 0.002$). Entrepreneurs who feel that implementing green production practices is easy to do and is under their control are more likely to have the intention to behave greenly in their production processes. This finding is in line with (Emekci, 2019; Taufique & Islam, 2021), who found that PCE is the variable that most strongly influences consumer behavior in purchasing green, environmentally friendly products.

7. Conclusion

This research tries to find determinant factors that can explain the behavior of small entrepreneurs, especially written-Batik entrepreneurs in Sleman Regency. The research results show that their behavior in carrying out
green production is influenced by attitude factors, Subjective Norms, PCB, and Peer influence. The results of this study do not support the hypothesis which states that social norms influence green behavior intention.

Researchers realize that statistically, this research has limitations. The limitations of this research are related to the research sample of only 30 respondents. The limitations of the research data are thought to cause the data quality to not meet the assumption of normality and using only non-parametric statistics. This has consequences for the interpretation of results, so they need to be interpreted carefully when making generalizations. It is hoped that this research can be confirmed by further researchers using more respondents. Despite the existing limitations, this research is expected to have theoretical contributions related to support for TPB theory, as well as practical contributions on how to encourage small entrepreneurs to behave greenly through education so that they have a better and more consistent attitude towards the idea of environmental preservation. The existence of obstacles felt by small entrepreneurs regarding the infrastructure for processing waste is also something that needs attention from the government to help with the necessary infrastructure.

**Conflict of Interest**

The authors declare that they do not have any conflict of interest.

**REFERENCES**


TABLE III: Result of the Normality Test

<table>
<thead>
<tr>
<th></th>
<th>TGBI</th>
<th>TGP</th>
<th>TNSOS</th>
<th>TPI</th>
<th>TNSUB</th>
<th>TPBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Mean</td>
<td>38.3000</td>
<td>23.3667</td>
<td>18.2000</td>
<td>16.5000</td>
<td>42.0000</td>
<td>16.5333</td>
</tr>
<tr>
<td>Std. deviation</td>
<td>4.52693</td>
<td>2.00832</td>
<td>1.73006</td>
<td>2.27050</td>
<td>6.43803</td>
<td>2.67470</td>
</tr>
<tr>
<td>Absolute</td>
<td>0.228</td>
<td>0.325</td>
<td>0.245</td>
<td>0.213</td>
<td>0.211</td>
<td>0.288</td>
</tr>
<tr>
<td>Positive</td>
<td>0.228</td>
<td>0.208</td>
<td>0.149</td>
<td>0.154</td>
<td>0.107</td>
<td>0.179</td>
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<tr>
<td>Negative</td>
<td>-0.164</td>
<td>-0.325</td>
<td>-0.245</td>
<td>-0.213</td>
<td>-0.211</td>
<td>-0.288</td>
</tr>
<tr>
<td>Test statistic</td>
<td>0.228</td>
<td>0.228</td>
<td>0.245</td>
<td>0.245</td>
<td>0.211</td>
<td>0.288</td>
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<tr>
<td>Asymp. Sig. (2-tailed)*</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>0.001</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Data analyzed, 2023.

Note: *Asymp. Sig. (2-tailed), p-value < 0.05; the data is not normal.

TABLE IV: Hypothesis Test Results

<table>
<thead>
<tr>
<th></th>
<th>GP</th>
<th>NSOS</th>
<th>PI</th>
<th>NSUB</th>
<th>PBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kendall's Tau TGBI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Correlation coefficient</td>
<td>0.459**</td>
<td>0.237</td>
<td>0.437**</td>
<td>0.339*</td>
<td>0.471**</td>
</tr>
<tr>
<td>Sign (2-tailed)</td>
<td>0.003</td>
<td>0.110</td>
<td>0.003</td>
<td>0.019</td>
<td>0.002</td>
</tr>
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<td>30</td>
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<tr>
<td>Spearman's rho TGBI</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Correlation coefficient</td>
<td>0.575**</td>
<td>0.304</td>
<td>0.553**</td>
<td>0.433*</td>
<td>0.591**</td>
</tr>
<tr>
<td>Sign (2-tailed)</td>
<td>0.001</td>
<td>0.102</td>
<td>0.002</td>
<td>0.017</td>
<td>0.001</td>
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<tr>
<td>Result</td>
<td>H1 supported</td>
<td>H2 rejected</td>
<td>H3 supported</td>
<td>H4 supported</td>
<td>H5 supported</td>
</tr>
</tbody>
</table>

Source: Data analyzed, 2023.

Notes: **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).


