

# Model Development of Home Industries to Improve Family Welfare Using Analytic Hierarchy Process (AHP) A Case Study in Kendal Regency, Central Java, Indonesia

## Abstract

Women have a big role to increase family welfare with out reducing her main obligation as a housewife. Home industries (HI) is one of the most suitable activities for women. The purpose of this paper is to choose the best strategy for developing home industries gender responsive. Method used is AHP (Analytical Hierarchy Process) and SAST (Strategic Assumption Surfacing and Testing). Results study showed there are five main barriers to develop home industries gender responsive (1) capital (2) corporate governance (3) marketing, (4) technological process (5) legal aspect. There are three groups of home industries : beginner, developing and developed, which diferent characteristics. The most suitable strategy to develop home industry for each groups are production process; product design and marketing capital loan and networking.

Key word : Women role, family welfare, home industry, performance, AHP

## 1. Background

Home industries (HI) have major role in economic and welfare development of the people. One of the most important roles is as a social safety net, because it can absorb a very large workforce, and reducing the number of unployment. The number of home industries currently around 40 million, with total of workforce 110 million (Anonimous, 2014). Almost home industries are managed by women especially for beginner. This mean that wowen have great potential to develop family economics. Home industries is an industries that employ fewer than six people, limited capital , and integrates with households activities, and all of workers are family (Sujatmiko, 2014).

Although women have a very big role in their families, and even national development, but policies and their implementations don't provide any space for women to live as they should. Access, participation, and control on economic resources are limited. The role and participation of women in micro enterprises are still often overlooked with their obligation as a housewife, even their activities in home industries always fused with her role as a housewife, no separation in managing finances, labor and spending.

There are some characteristics of Home industries : (a) limited capital, (b) run by women as subcontracting workers or homeworkers and family labor, but their participation rarely recognized, (c) low wage, (Sunarso,2010), additionally anonymous (2013) stated that home industries are characterized by four aspects (a) integrated with households, (b) unskilled labor, (c) low technology and (d) unbankable. *Didia, P.Freeman, J.C. Assad, and J.Yuan (2015) stated* that labour force of wowen has a positive correlation with economic growth. While Nobari, K. Mohamadkhani, A. M, Davoudi (2014) stated that women behaviour have a significant enfluence on the productivity of home industries, while Smith (2014) stated that wive, partner is the most important aspects for developing home industries inte term of business scale.

Widiastuti, R; Awang, S.A; Prayitno, T.A. Warsito, Sofyan P. (2011) stated that the technologies used in home industries is very simple and all of production process is manual (*handmade*), moreover, they rely on their own capitals not on the bank's capital. Husain, Li Xiao Xiao (2016) stated that women leader in Small Medium Enterprise (SME) have a

stronger motivation and spirit of the men, and women are more patient and resilient than men in dealing with business constraint.

There are three type of home industries by level of business continuity, capital, production process technology, number of workforce, and sales system (Minister of Women and Child Protection, 2013). They are: (1) Startup home industries which is characterized by 1-2 workers whom all members are family, non-continuous production and average income/month 1-5 million. (2) Developing home industries which is characterized by continuous production and fixed sales system, capital is around 25 - 50 million rupiah of personal assets and microfinance credit, 2-5 workers, and (3) Developed home industries characterized by 5-10 workers including the owner, bank credit, production process using technology, business and finance are managed professionally.

The proportion of home industry is currently dominated by the beginner ( 60-70% ) beginner, developing 20-30% and developed 5-10% (PSP3 IPB, 2011). This mean that majority of home industries are not competitive and weak, and only small proportion are well managed.

n effort to increase the scale of business, and improving the welfare of the family, since 2012 Kendal Regency has been appointed to be the pilot project of national home industry, due to the highest growth of home industries in Indonesia.

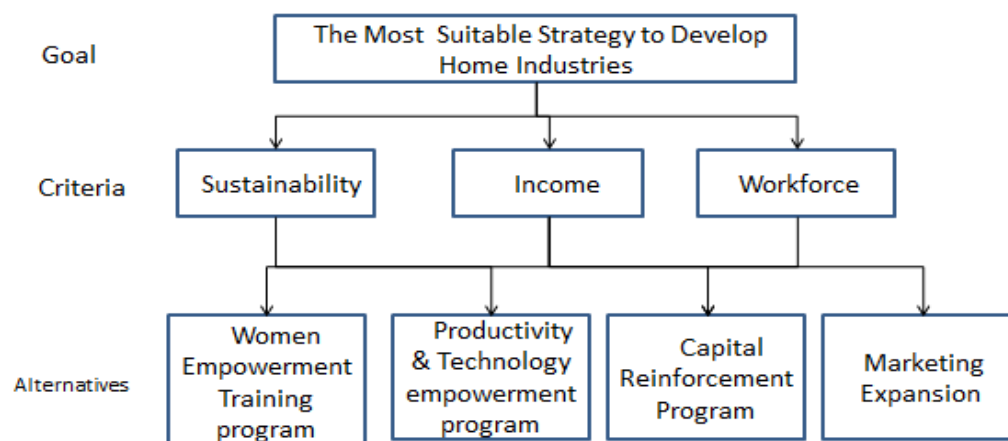
As a pilot project of national home industry development, local government wants to make the most suitable model in accordance with the level of home industries (beginner/start up, developing and developed). Therefore need this study to select the most appropriate strategy in the development of home industries in accordance with the level as a national model of home industries development.

The purpose of this study is to select the most appropriate strategy, as the national model of home industry development. 

## 2. Methodology

a was collected by experts discussion which involved local government, academics of local Universities, and business of home industries, and field visit to see directly the activities of home industry. a analysis by SAST (Strategic Assumption Surfacing and Testing) method which was developed by Mason and Mitroff (1981), and AHP (Analytical Hierarchy Process) developed by Saaty (1983).

SAST was selected to determine basic assumptions which must be considered in home industry development, AHP to determine the appropriate strategy based on experts discussion. Generally AHP structure based on experts discussion as follow :



Picture 1. AHP structure of home industry development

### 3. Result and Discussion

Public perception on women's occupation always places it in the context of household activities. Most of women's work, especially in villages, is revolved around household, so it's not easy to clearly separate the types or characteristics in market or non-market, economic or non-economic, production or reproduction groups. The difficulty leads to simplification of definition of women's occupations because a lot of work activities take place at home.

Based on a study of 54 examples of home industry in the Kendal Regency showed only 5.7 % were categorized as developed, while most of the others (82.3%) beginner and 12 % as a developing groups. The workers mostly women, working without separation with household chores, and with out health insurance. Most beginner group come from non bank capital owners, with a profit-sharing system agreed by both parties. While in developing and developed groups already using the bank's capital. Women more involved at beginner groups, otherwise at developed groups men a bigger role. In the developing groups of home industries men and women have an equal role in business management.

There are 8 indicators related to home industry development in Kendal Regency, which are shown in table 1 below :

Table 1. Identification of Characters of Home Industry

| Factor and Benchmark                | Parameter                      |                          |                         |
|-------------------------------------|--------------------------------|--------------------------|-------------------------|
|                                     | Home industry Beginner/Startup | Home industry Developing | Home industry Developed |
| <b>A. HUMAN RESOURCES FACTORS</b>   |                                |                          |                         |
| 1. Entrepreneur/Manager /Owner      | F(1), M(0-1)                   | F(1-2), M(0)             | F(3-5), M(0)            |
| 2. Part Time Worker                 | F(0-2), M(0-2)                 | F(2-5), M(2-5)           | F(5-10), M(5-10)        |
| 3. Full Time Worker                 | F(0), M(0)                     | F(1-5), M(0-3)           | F(3-10), M(3-5)         |
| <b>B. CAPITAL FACTORS</b>           |                                |                          |                         |
| 1. Own capital                      | Plenty (80-100%)               | Some (0-40%)             | Few (0-10%)             |
| 2. Loans from relatives/ colleagues | Some (0-20%)                   | Some (0-40%)             | Few (0-20%)             |

| Factor and Benchmark                                       | Parameter                         |                             |                                      |
|------------------------------------------------------------|-----------------------------------|-----------------------------|--------------------------------------|
|                                                            | Home industry<br>Beginner/Startup | Home industry<br>Developing | Home industry<br>Developed           |
| 3. Revolving fund/and State/<br>Local Budget Reinforcement | None                              | Plenty (20-60%)             | Few (0-30%)                          |
| 4. Cheap Credit                                            | None                              | Few (0-20%)                 | Some (20-60%)                        |
| 5. Banking Credit/KUR                                      | None                              | None                        | Plenty (40-80%)                      |
| <b>C. PRODUCTION FACTORS</b>                               |                                   |                             |                                      |
| 1. Technology Application                                  | Simple                            | Efficient                   | Modern                               |
| 2. Product Quality Provision                               | Good                              | Good                        | Very Good                            |
| 3. Raw Material Provision                                  | Irregular                         | Regular                     | Stock                                |
| 4. Process Management                                      | Unstructured                      | Structured                  | Applying key<br>Performance<br>Index |
| 5. Business Administration                                 | Manual                            | Semi -<br>electronic        | Electronic                           |
| <b>D. BUSINESS FACTORS</b>                                 |                                   |                             |                                      |
| 1. Raw Material Market                                     | Unpredictable                     | Fluctuating                 | Predictable                          |
| 2. Production Cost                                         | Uncounted                         | Recorded                    | Recording and<br>Counted             |
| 3. Selling Price                                           | Unpredictable                     | Fluctuating                 | Periodic Certainty                   |
| 4. Profit Estimation / Income<br>Per Period                | 300 thousand – 1<br>million/month | 1-5<br>million/month        | > 5<br>million/month                 |
| 5. Minimum Feasibility                                     | Breakeven                         | B/C : 1.2 – 1.5             | B/C : > 1.5                          |
| <b>E. BUSINESS CONTINUITY<br/>FACTORS</b>                  |                                   |                             |                                      |
| 1. Product Marketing                                       | Unpredictable                     | Certain Buyers              | Regular Buyers                       |
| 2. Consumer Character                                      | Very varied                       | Varied                      | Standard                             |
| 3. Change of Process<br>Technology                         | Infrequent                        | Frequent                    | Frequent                             |
| 4. Environmental Control                                   | None                              | Few                         | Regular                              |
| 5. Business License                                        | Informal                          | Semi – formal               | Formal                               |
| <b>F. BUSINESS ENVIRON<br/>MENT FACTORS</b>                |                                   |                             |                                      |
| 1. Market Scope                                            | Local                             | Local in the<br>region      | Interlocal                           |
| 2. External Capital Access                                 | None                              | Difficult                   | Plenty                               |
| 3. Transportation/Road Access                              | None                              | Optional                    | Required                             |
| 4. Infrastructures : water /<br>energy                     | Inadequate                        | Inadequate                  | Adequate                             |
| 5. Institutional Support                                   | Low                               | Inadequate                  | High                                 |
| <b>G. SOCIAL FACTORS</b>                                   |                                   |                             |                                      |
| 1. Gender equality in business                             | Very Good                         | Good                        | Adequate                             |

| Factor and Benchmark                     | Parameter                         |                                        |                            |
|------------------------------------------|-----------------------------------|----------------------------------------|----------------------------|
|                                          | Home industry<br>Beginner/Startup | Home industry<br>Developing            | Home industry<br>Developed |
| decision making                          |                                   |                                        |                            |
| 2. Empowerment by business world         | None                              | Some                                   | Initiative                 |
| 3. Participation of community activities | High                              | Medium                                 | Low                        |
| 4. Labors' Education                     | Literate –<br>Elementary School   | Junior High<br>School – High<br>School | > High School              |

Strategic assumptions were formulated from the results of meetings and discussions between experts from various fields. The assumptions were (A) Initiative and creativity of female entrepreneurs in producing potentials of Startup home industry, (B) Market capability and opportunities identified, (C) Innovation and implementation of technologies owned by female entrepreneurs, (D) Coordinated and planned participation of Local Government, (E) The function of Women Empowerment Agency, (F) NGOs' participation in improving gender equality in local economic activities, (G) The function of business consultation agencies in reinforcing the business continuity of home industry, (H) The function of financial institutions in reinforcing the capital of Startup home industry, (I) Local Government Leaders policies, who motivated and guided home industry development, (J) home industry partnership with large enterprises/large traders in marketing and improving product quality and (K) Relation between poverty alleviation program and home industry reinforcement and progress. Analysis results showed that all of assumptions in quadrant 1, which mean importance and certainty for home industry development, as shown in figure 2.

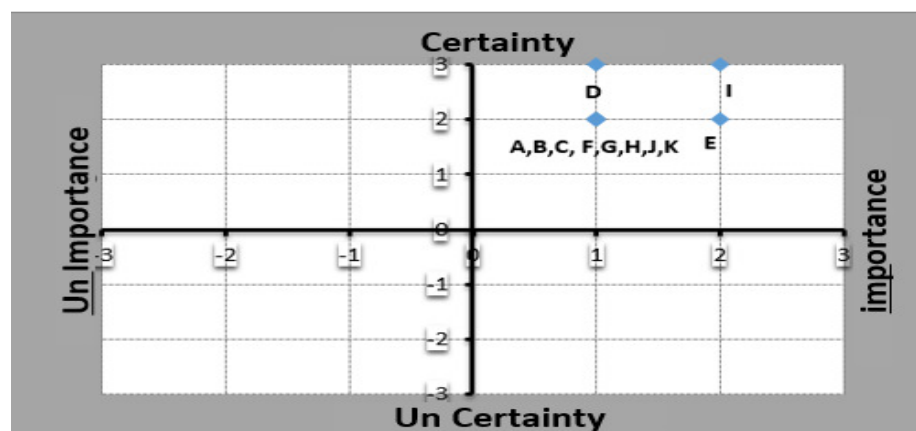


Figure 2. Quadrant of SAST Assumptions

Of 11 variable assumptions Coordinated and planned participation of Local Government (D) and Local Government Leaders policies, who motivated and guided home industry development (I). This means that the development of home industries is highly dependent on the willingness and policy of local government leaders.

The result of AHP analysis showed that Productivity and Technology Improvement Program (0.400) is the highest priority program, then followed by Capital Reinforcement Program (0.332), Product Marketing Expansion (0.197) and finally Women Empowerment (0.072). While the main criterion is sustainability, as shown in figure 3.

As described above, that most of home industry is a beginner groups, who are still using very simple technology in producing goods (hand made) with limited capital, so priority strategies to improve the performance of home industry is providing technological support and capital loan.

Goal : Improving performance and competitiveness home industries

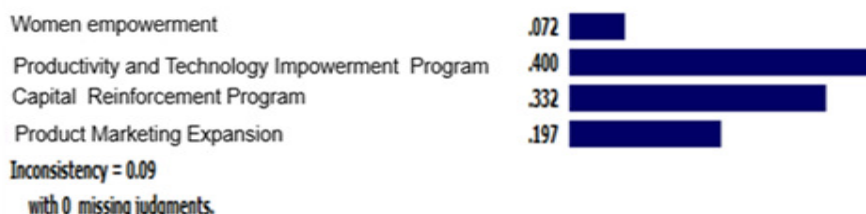


Figure 3. Program Priority

Home Industry is a private business unit where performance and competitiveness is the indicator of success. Performmace is measured by how it obtains income, control budget and comply with regulations in effect. Home industries is a business which a legal practice to obtain monetary income by adding profit or reducing cost. Therefore, home industry development requires flexible mechanism and cross-sectoral support from central and local government agencies.

The start-up stage/beginner is started by entrepreneurial ideas to capture market opportunities. After startup home industry is established, despite the high bankruptcy rate, it should be maintained to become Developing home industry. The next stage is expanding the business into Developed home industry which is formalized by development process into Cooperatives or Limited Liability Company SME. The following table shows medium-term plan in home industry transformation process.

Similar to other enterprises, home industry is also expected to grow the business to a larger scale to create family welfare. The requirements of the transformation of home industry are shown in table 2, while the transformation of home industry (HI) is shown in figure 4.

Table 2. The Support Required for IR Transformation

| Note                | Transformation of<br>Startup HI → Developing<br>HI                                                                                    | Transformation of<br>Developing HI →<br>Developed HI                           | Transformation of<br>Developed HI →<br>SME                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Required<br>Support | 1. Non-bank capital loan<br>2. Process technology<br>fits products<br>3. Training /consultation<br>from Local<br>Government/ Regional | 1. Product<br>packaging<br>(Technique,<br>design,<br>material)<br>2. Marketing | 1. Soft Loan<br>Capital from<br>Banks<br>2. Product<br>packaging<br>(design) |

|  |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                 |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Work Units (Management, business, TTG, Character development, Entrepreneurship)</p> <p>4. Sanitation and cleanliness of business environment</p> <p>5. Business grouping (KUBE)</p> | <p>expansion (E-commerce, Online)</p> <p>3. The role of local governments in promotion</p> <p>4. Process technology (Improving quality and added values)</p> <p>5. Institutional status, the role of local governments (Pre cooperative)</p> <p>6. Expansion of production location to increase capacity</p> <p>7. Capital from micro financial institutions (LKM/KSP)</p> | <p>3. Production diversification</p> <p>4. The role of local governments in promotion outside of the regions</p> <p>5. Improving the quality of Human Resources</p> <p>6. Business legality</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

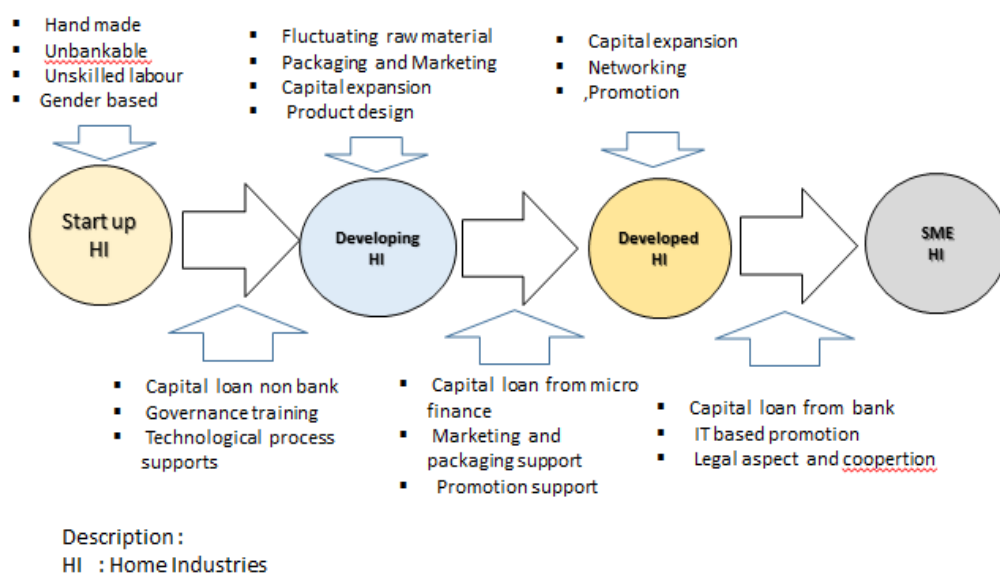


Figure 4. Transformation Process of Home Industry

## 4. Conclusion and Suggestion

### 4.1. Conclusion

Women have a major role to improve the welfare of the family through home industries, whether in terms of economic, health or education aspects, and more harmonious relations between family members. No value chain in the production system of home industries, produsen directly as a marketer. There are three models strategy to develop home industries : (a) from start up to developing: technological process support, capital loan non banks (micro finance), governance training; and marketing (b) from developing to developed : packaging; marketing, capital loan from micro finance ; (c) from developed to SME : soft loan capital from banks, promotion and business legality.

### 4.2. Suggestion

To improve the role of home industry in family economics, government's policy support and cooperation among them are the most important aspects. The government also should facilitate akses to micro finance, network marketing and training to improve their skill.

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