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## The Benefit of Internet Using to Affect Income for Water Hyacinth Home-based Entrepreneurs in Rawapening Area-Indonesia

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# The Benefit of Internet Using to Affect Income for Water Hyacinth Home-based Entrepreneurs in Rawapening Area - Indonesia

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**Abstract.** Home industries or home-based enterprises (HBEs) in developing countries are identical with smallness, flexibility or even informality. When this type of economic activities in developed countries seems familiar with the internet of things (IoT), water hyacinth HBEs in Indonesia particularly in the area of Rawapening Swamp, start to use internet for their business. The development of HBE is supported by the use of the internet in terms of ease of communication, buying and selling transactions, and information dissemination to develop businesses. This study aims to find out how much the benefits of using the internet on the income of business owner or operators of water hyacinth HBEs. By using descriptive statistical analysis, the subjects in this study were divided into two types, namely non digital and digital HBEs entrepreneurs. The results shows that the average income of non-digital HBEs is less than the average income of digital HBEs entrepreneurs.

## 1 Introduction

Rawapening is a semi-natural lake that has a strategic role as a natural reservoir for hydropower, such as drinking water, irrigation, fisheries, and tourism. The lake with an area of 2,670 hectares is located in four sub-districts in Semarang Regency, Ambarawa, Tuntang, Bawen and Banyubiru. Research from the Study Center and Development of Rawapening Area (PSPKRP) in Ridwan (2013), shows that Rawapening's current condition is getting worse due to decreased capacity. This is caused by sedimentation of the watershed that empties into Rawapening due to uncontrolled growth of water hyacinth.

Not only a threat to the environment, water hyacinth also holds great potential for economic development efforts that can be used for high-value crafts (Onyango and Ondeng, 2015). The use of water hyacinth can create Home-Based Enterprises (HBEs) as an economic driver for the community in the Rawapening Area. According to Strassmann (1987), HBE is defined as one of the businesses which place economic activities at home.

Currently the development of HBE is also supported by the presence of digital technology that can provide flexibility in production that allows faster delivery to customers and supports fast transactions. Digital technology through the internet using is increasingly attached to community activities, making the regions in Indonesia as a potential market for the digital economy sector. This is in line with the



existence of industrial revolution that continues to change. The industrial revolution itself always coexist with the emergence of new economy, combination of digitalization, millennial generation, also industrial revolution that raises creative industries supported by the development of digital technology (Triyono, 2017).

The existence of internet using in HBE shows that the water hyacinth home-based enterprises in the Rawapening Area support the declarations of 100,000 Go Online SMEs movement in Indonesia. It was initiated by the vision of President Joko Widodo to make Indonesia as a Digital Energy of Asia (Republic of Indonesia Ministry of Communication and Information, 2017). There is an implementation of digital economy in the water hyacinth home-based enterprises with the spread of information and telecommunications technology in the economic sector (Bruneckiene, J. and Sinkiene, J. 2014). Through the Klinting-Ambarawa Cluster website at <http://www.kerajinanambarawa.com>, there can be seen that there is a usage of internet for marketing medium of water hyacinth craft, so it is interesting for further research.

## 2 Method

The method in this study uses quantitative approach and supported by qualitative data from the result of interviews. The analytical technique used in this study is descriptive analysis and used to analyze data in the form of numbers and present them in tables, graphs and diagrams to analyze data through questionnaires, interviews, and backgrounds. The population that will be studied is the community that runs the water hyacinth HBE and its enterprises is registered in the Office of SMEs Semarang Regency. There were 60 respondents from the water hyacinth HBE which was the sample.

Sampling in this study using non-probability sampling method with purposive sampling. Non-probability sampling method is a sampling method that does not provide equal opportunities for each element of the population to be selected as a sample (Sugiyono, 2013). The purposive sampling is that the sample selection on certain considerations that are relevant to the purpose and problem of the research. These considerations are made because a sample that is currently running a water hyacinth home based enterprises (HBEs) in the Rawapening Area, so the results can be representative.

## 3 Result

The use of sections to divide the text of the paper is optional and left as a decision for the author. Where the author wishes to divide the paper into sections the formatting shown in table 2 should be used.

### 3.1 Condition of Water Hyacinth HBE in Rawapening Area

Communities around Rawapening take water hyacinth plants that grow to fill the swamp surface to be taken from the leaf stalks. Most of the water hyacinth is also transported and marketed to Yogyakarta and Pekalongan. Home-based enterprises use relatively low capital that comes from family savings and household income from other business sources. When a home is seen as having a productive aspect, those involved in Home-based enterprises are basically residents of their own homes, as revealed by Lipton in Kellett and Tipple (2000), that one of the characteristics of HBE is the role of the family to provide land and capital for the workplace (occupancy). Most of the workforce in the household is a member of their family, so it does not require a fee to pay employee salaries.



**Figure 1.** Wet Water Hyacinth in the Rawapening Area



**Figure 2.** Dry Water Hyacinth in the Rawapening Area

The benefits of HBE are low costs and utilizing household resources, especially space and utilities (Tipple and Speak, 2005). HBE water hyacinth in the Rawapening Area utilizes space with small space of the house, thus hampering the process of loading products into the transport vehicle. In addition, water hyacinth drying that requires large yards and terraces of houses, to be occurred on the land near the house, the yard of a neighbor's house, on the side of the road, on the edge of a railroad tracks, and also on the side of the rice fields. Home spaces such as living rooms and kitchens that are used in the production process of water hyacinth crafts also cause some spaces to be malfunctioned. The small size houses tend to result on less household using special space for HBE. The conditions of space used by HBE entrepreneurs are more clearly seen in Table 1.

**Table 1.** Conditions of residential space for Hyacinth HBE activity

Residential Space			
Bedroom	Living Room	Kitchen	Terrace
			

The producing process of each form of water hyacinth such as braid/weaving and handicraft begins with the drying of wet water hyacinth until the final production process can be seen in Table 2. For the producing process of semi-finished products in the form of plaits hyacinth, dry water hyacinth is split both sides, the fiber is taken, then presses it so that it forms a sheet. Different with the weaving, the process of manufacture semi-finished products in the form of hyacinth braid, does not pass through fiber retrieval but is directly weaving using ‘ungkelan’ as a container to accommodate the products. The producing process of water hyacinth craft is the next stage of braid and weaving. This semi-finished product is formed according to the needs that are cooled such as bags, shoes, mats, storage boxes, etc., using a ‘mal’ that is the product frame. After that, there is a bleaching process so that dry water hyacinth is brighter and cleaner. Before going to the final stage by using materials such as thinner, melamine wood, and varnish which serves to enhance the aesthetics and protect the dry water hyacinth that covers it, there is a gluing process. That process is the incorporation of braid and weaving using wood glue. This process is done to make sure that gluing between links with one another can create good and long-lasting product quality.

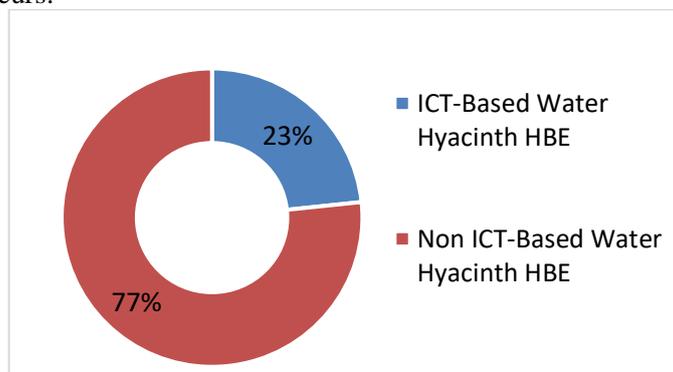
3.2 The type of Hyacinth craft product

Hyacinth craft products produced by each enterprise around Rawapening in general are bags, sandals, baskets, and furniture such as chairs and tables. Most of the products produced in the form of three dimensions, but some are in the form of two dimensions, both designed themselves and as an order. The achievements made by the GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) can be demonstrated by the agreement in building brands and four categories of products that are further developed. GIZ is a German Federal Government institution with activities in developing countries which focuses on managing the resources. The cooperation that began in 2014, in several stages (initiation, development, and independence) is including marketing hyacinth craft products online in the Klinting Ambarawa Cluster. Examples of the four categories of water hyacinth products can be seen in Table 3.

**Table 2.** The Hyacinth Products

Hyacinth Product Category			
Household accessories	Interior	Decorative	Fashion
e.g: basket, tissue holder, and basket	e.g: carpet, table and chair set, lamp	e.g: vase, photo frame, mirror, miniature	e.g: shoes, sandals, wallets and bags
			

In general, not all HBE entrepreneurs use technology or the internet in marketing for water hyacinth products. Therefore, HBE entrepreneurs will be classified into two types, namely digital and non-digital HBE entrepreneurs which can be seen in Figure 3. The number of non-digital HBE entrepreneurs are 77%, while only 23% HBE entrepreneurs are using the internet and then are called digital HBE entrepreneurs.



**Figure 3.** The Number of Non-digital and Digital Hyacinth HBEs

Entrepreneurs in this study are those who produce semi-finished products (dry water hyacinth, braid/rope and weaving/matting), also finished products (water hyacinth crafts) then referred to as nondigital and digital HBE entrepreneurs. The digital HBE entrepreneurs only consist of water

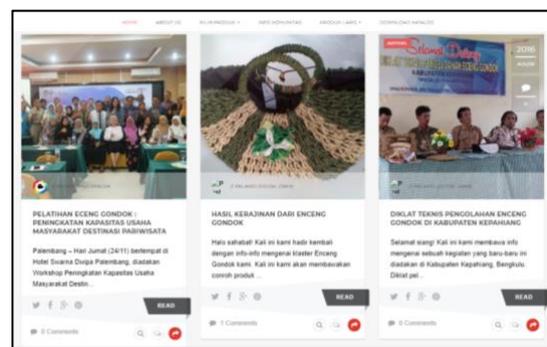
hyacinth craftsmen, while non-digital HBE entrepreneurs consist of five actors, namely traders of dry water hyacinth, producers of weaving/matting, skipper of dry hyacinth collectors and braid/weaving hyacinth, braid/weaving laborers, also water hyacinth craftsmen.

### 3.3 Internet using of water Hyacinth HBE

In particular, the form of social media support in facilitating other parties to collaborate in events, visits, and as resource persons in training becomes a positive impact in the water hyacinth Klenting Ambarawa Cluster. The website which is the result of cooperation in the form of assistance program from the GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) has expired since 2016. Although it is still accessible, currently the data in the website is not updated anymore as in the previous year because there are no human resources qualified from that cluster to be able to manage.



**Figure 4.** Display of Klenting Ambarawa Website (front page)



**Figure 5.** Display of Klenting Ambarawa Website (content)

Source: <http://www.kerajinanambarawa.com/>, 2018

The website at <http://www.kerajutambarawa.com>, does not only displays product catalogs in the form of accessories, fashion, decorative, and water hyacinth paper, but also activities carried out by hyacinth craftsmen in Klenting Ambarawa Cluster such as the SMEs exhibition. The community also cooperates in training to producing water hyacinths for the community, helping for market sales and access, as well as business capital and equipment. There were also HBE entrepreneurs who in previous years used social media for marketing, but now they are no longer active. But HBE entrepreneurs have been already connected to search engines on the internet, so buyers can contact business actors through WhatsApp Mesengger or cross platform messaging applications that allow both parties to exchange messages. The forms of internet or social media support used by digital HBE entrepreneurs are different, based on the classification of interest dimensions after using the internet according to (Buente and Robbin, 2008), namely:

#### a. Marketing

Buying and selling transactions are seen from the use of the main component of digital economy according to Mosseunbur in (UGM, 2017), namely the scope of e-business (financial transactions using online transfer media) and e-commerce (online marketing). Marketing of home business products / services is done through social media to expand the market.

This industry is not only intended for the sale and purchase of products through the internet, but there are other industries connected to it, such as the provision of logistics services, telecommunications providers, smart device manufacturers, and others.

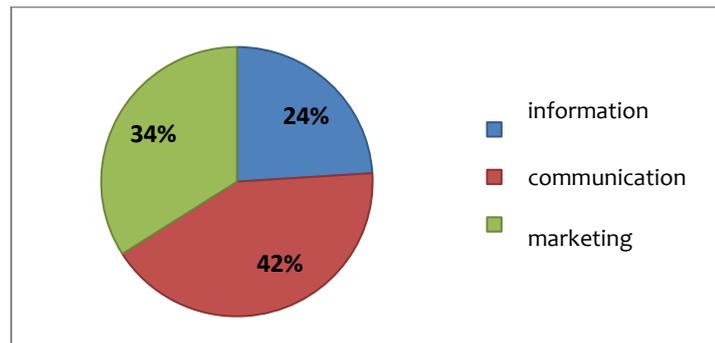
#### b. As a communication device

Internet is used to interact with buyers, suppliers, customers or colleagues through Facebook/BlackBerry Messenger/WhatsApp Messenger/Instagram to increase the number of consumers. In addition, it will be easier for other parties to hold cooperation in the event, visit, as resource persons in training.

c. To obtain information

Internet is used to obtain the information about innovative product ideas.

Digital economy is closely related to the number of internet users and communication with others effectively. Digital-based business development in buying and selling transactions is in the form of digital marketing. Digital marketing emphasis is carried out in the context of SMEs promotion efforts using digital media that able to reach consumers in a timely, personal and relevant manner. The percentage of each form of utilization of each digital HBE owner or operator can be seen in Figure 6 below.

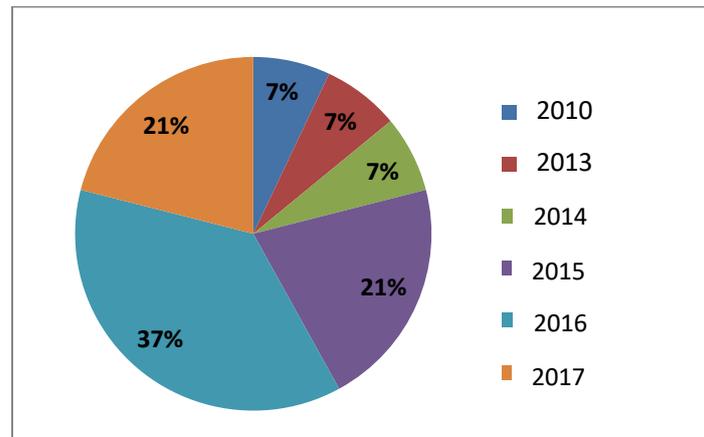


**Figure 6.** Internet Using by Digital HBE Entrepreneurs

It can also be seen the existence of innovation and knowledge economy, they are the implementation of innovation, increasing productivity and anticipating that there will be no additional costs. The usage of internet or social media by digital HBE entrepreneurs is utilized to find information about knowledge about innovative product ideas. These innovations include introducing the production of innovative products that are part of HBE's attractiveness in national and international markets. In this case, there are two types of devices used by digital HBE entrepreneurs to access the internet network. Both devices are divided into computer network hardware and computer network software which are the connecting components of the internet network. These devices include hardware in the form of computers and devices. Based on the field survey, only 7% of digital HBE entrepreneurs use computers as hardware for information collection for innovative product ideas. Meanwhile, overall digital HBE entrepreneurs use mobile phone to access the internet. This shows that device is more affordable and more practical. Through mobile phone, digital HBE entrepreneurs are facilitated in finding information as needed by using a web browser.

Every digital HBE actor has a frequent of internet usage or social media for developing his business. Based on the frequency according to SWA-Mark Plus and Co (Abrar, 2003), the frequency of internet usage in a day is divided into 3 types, namely heavy users or more than 7 times, medium or less than 7 users, and light users or less than 2 times. Based on the survey that has been conducted, there are 46% of digital HBE actors who are heavy users of using the internet or social media, 31% including light users, and 23% are light users. This means that most digital HBE actors are active internet users, because the internet or social media has become part of the development of water hyacinth HBE activities in the Rawapening Area.

The application of digital economy by utilizing internet technology does not only occur in Ambarawa Klinting Cluster, which uses websites only, but also other forms of social media such as Facebook / BlackBerry Messenger / WhatsApp Mesenger / Instagram. Digital HBE owner or operators start using internet or social media differently, namely 2010, 2013, 2014, 2015, 2016, 2017, each of which is described in Figure 7 below.



**Figure 7.** Start in using internet for Digital HBEs

The figure 7 shows that in 2016 most digital HBE actors use the internet or social media in their efforts. Based on data from years of internet use, 57% of HBEs owner or operators studied themselves in practicing information technology to be applied at home, 29% said they learned from friends or family, and 14% learned internet through training followed by online marketing training by UKM Center Central Java.

### 3.4 Average Income of HBEs

Home-based Enterprises are part of the informal sector that can create jobs while replacing the role of the formal sector to provide goods and services (Gough, K. V., 2003). HBEs also has an important role in providing a positive and significant economic contribution by creating innovation and creativity in business and can provide positive social impacts such as improving quality of life. There are HBE owners who are dominated by housewives, who previously have no income. So then they are choosing to have a home-based business. According to Kellett (1995), the formation of home-based employment is very important for women from cultural groups that are not considered appropriate for women to work outside or far from home. This housewives group is located along the road to the Bukit Cinta tourism location in Banyubiru Sub-district, namely in Kebondowo Village and Kebumen Village. Usually the distribution of each water hyacinth HBE of is close to one another, so that HBEs can functions as complementary in meeting raw materials.

### 3.5 Average Income of HBEs by Using Internet

The important role of the water hyacinth HBEs to affect the lives of people around the Rawapening Area, one of which provides benefits or increase income. According to Dumairy (2000), income is the amount of income both from families and individuals in the form of money. A part of income are using to earn of internet. By the use of the internet, it increases acces of communication, buying and selling transactions, and information dissemination to develop the business. To find out how much impact there is on the internet usage of the water hyacinth HBEs on the business actor's income, the income is seen based on the research subject, namely digital and non-digital HBE actors. There are differences in the average income obtained between digital and non-digital HBE owner or operators which can be seen in the Table 4. The use of the internet in business can also create a new distribution channel for existing products, especially for the Klaster Klinting Ambarawa which uses the website as an online marketing medium. It is resulting in the distribution of product orders to each group based on market demand.

**Table 3.** Average Revenue of Digital and Non Digital HBE Owner or Operator

Type of HBEs	Average Income	Average Sales Volume	
		The 1/2 finished product	Finished product (Pcs)
Non Digital HBEs	Rp1.414.585	<ul style="list-style-type: none"> <li>• Dried Water Hyacinth 783 kg</li> <li>• Water Hyacinth braid/rope 1.653 kgs</li> <li>• Water Hyacinth weaving/Matting 340 pcs</li> </ul>	<ul style="list-style-type: none"> <li>• 500 pcs (small)</li> <li>• 57 pcs (Medium)</li> <li>• 5 pcs ( large)</li> </ul>
Digital HBEs	Rp5.162.500	n.a	<ul style="list-style-type: none"> <li>• 590 pcs (small)</li> <li>• 154 pcs (medium)</li> <li>• 11 pcs (large)</li> </ul>

In accordance with the statement of Stockdale, et al., (2012), the results of the study showed that the business value of the use of social media or the internet for HBE water hyacinth is the advantage of sales. Based on the data above, it can be seen that the average income obtained by non-digital HBE owner or operator is Rp1,414,585. This shows that most of the non-digital HBE owner or operators' income is below the District Minimum Wage figure in Semarang Regency, which is Rp. 1,900,000 and is also included in the low income group, namely income less than Rp1,500,000. In addition, it was also found that non-digital HBE owner or operators who have other sources of income in their household also use houses as HBE, such as dressmakers, brick making houses and sand, as well as selling fried foods by utilizing a house terrace.

The average income earned by digital HBEs is IDR 5,162,500. This shows that most of the digital HBE owner or operator's income is above the Minimum Wage figure of Semarang Regency, which is Rp. 1,900,000 and also includes a very high income group, which is above Rp. 3,500,000 per month. In addition, that digital HBE owner or operator who have other sources of income in their household also use houses as HBEs, such as workshops and small shops, as well as selling fried foods by utilizing the house terrace. The income difference from the two type of HBEs is due to the application of the digital economy. The use of the internet through the website <http://www.kerajutambarawa.com>. Digital economy is the dissemination of information and telecommunications technology that is widespread in the economic sector (Bruneckiene, J. and Sinkiene, 2014). The community of water hyacinth craftsmen from Ambarawa consisting of seven groups of craftsmen produce handicraft product creations of up to hundreds of types of products.

Internet-based business enables HBE to do marketing with global market goals, so that opportunities to penetrate exports are very possible, because there are 7 digital HBE owner or operators, namely respondents S / C5, A / C8, H / C10, S / C11, S / C14, N / C15, K / C16 which has exported water hyacinth handicraft products. This is reinforced by Suyanto (2005), there are positive impacts that can be obtained by utilizing the internet network and digital media in developing business, which can improve the promotion of products and services through direct contact, information sources, and interactive with customers. Through the website <http://www.kerajutambarawa.com>, there is internet usage in utilizing business opportunities and providing financial benefits to HBEs, so that there is a positive response from consumers directly used of online marketing. This is in line with the statement conveyed by Kaplan, et al (2010), that the main purpose of all forms of social media is to involve individuals or groups in business and business that lead to the formation of profit / profit.

*The effect is up to 70% for our income, Ms. In fact there are those who really want to be our resellers, we only limit it because our human resources are limited. So all have to fulfill the*

*demand even though the time is not enough, because the one who does all the hands has no machine. Yes, add cooperation too. Not only hotels, but many invite us to train, many areas are many water hyacinths but have not been able to use them, there are a lot of them in Aceh, Sumatra, almost all of them we have come to. "*

**(S / C3 / 01052018)**

The income received by a person or business entity is certainly influenced by several factors, such as the level of education and experience of a person. A higher level of education and more experience will gain more income. Another factors which affects to the level of income is strongly influenced by working capital, working hours, access to credit, the number of workers, family expenses, types of products and other factors. Generally people always look for high income levels to meet their household needs, but it will be depend on these factors (Nazir, 2010). In this case the income-forming factor which is then discussed in the income performance table can also come from the factors of production in the economy (F) including labor, capital, natural resources, and technology.

The revenue that is focused on human capital investment comes from its association with the identification of HBE actors. Human capital investment is the quality of a person or workforce that determines how potential people or workers can contributes in producing goods and services. Human capital emphasizes that education provides information and skills to increase individual productive capacity. The concept of human capital by Becker (1975) applies the logic of economics to examine individual investment decisions in knowledge and work skills, namely education in schools and training, career choices and other characteristics related to work.

According to Becker (1975), human capital is that humans are not only resources but are capital that produces returns and every expenditure made in order to develop the quality and quantity of capital is an investment activity. The investment earned in return is a better level of income to be able to reach the level of consumption. The difference in income is based on ability, expertise and education in HBE.

#### **4 Discussion**

Footnotes should be avoided whenever possible. If required they should be used only for brief notes that do not fit conveniently into the text.

##### *4.1 Identification of Hyacinth Hyacinth Owner or operator Characteristics*

Based on research conducted by Gough and Kellett (2001), in his journal Housing Consolidation and Home based Income Generation, the number of conditions for obtaining formal employment is one of the factors that can increase a person's interest in conducting a home-based business. This encourages better housing conditions. The results of Gough's research, KV (2010), showed that productive activities in the home proved to have no negative impact, whereas business actors who were most able to maximize the potential that exists in the house can provide opportunities to have more income, leading to definite job prospects and increase productivity.

Productivity is a factor that is quite important in the welfare of business activities (MSMEs) because productivity will determine a business can face competition in an increasingly competitive business world. Labor is not only seen as a part of the unit in achieving output (production) but also how the quality of the workforce interacts with other production factors to increase productivity. Productivity in the water hyacinth business shows differences in the characteristics of HBE practitioners in adopting technological innovations. The adoption of innovation in question is the use of the internet by business HBE actors.

The adoption of innovations by digital HBE actors has a positive impact on business progress and influences income. The income earned does not occur directly, meaning that it is not obtained in a short time but it needs a long process in starting a business. Most of the water hyacinth HBE in the Rawapening Area begins to develop for at least 3-5 years from the use of the internet by digital HBE practitioners. The adoption of the innovation was further explained based on the lessons learned in

Information Technology Utilization on SMEs Shoe Village in Osowilangon Pond, Benowo District, Surabaya City by Saifullah (2015).

#### 4.2 Adoption on Internet Innovations Based on Lesson Learned

The use of the internet by HBE perpetrators shows that technology is an important factor in running a household business. This is because the use of technology is a bridge to build innovative innovations in the water hyacinth HBE in the Rawapening Area. According to Hussin in Saifullah (2015), there are several factors that lead to the success of innovation, namely the involvement of members and other parties in creating new ideas, innovation requires creativity from workers, and is market-oriented and dynamic. The aim of developing innovation in relation to the digital economic context is the competitive advantage of being able to improve the value chain, manage resources, improve community welfare, and market coverage.

*"Our product arrived in Bali. It's like a bag, a lot of orders in a model called Raisa are coming from Bali. There is also Lombok, Batam, Surabaya, Tangerang. We also collaborate with boutiques, own shops, shoe stores, bags. "*

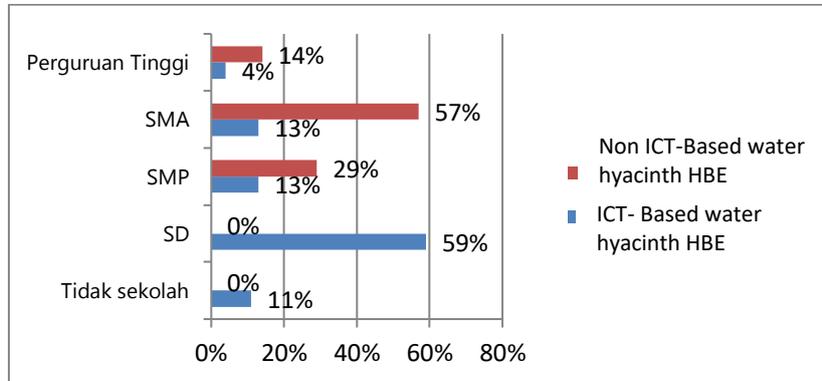
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The adoption of innovations in internet use for MSME players is influenced by three things: facilitating condition, performance expectancy, and effort expectancy (Venkatesh et al., 2003). From the aspect of facilitating condition, the perpetrators of digital HBE are not constrained by financing in the procurement of information technology infrastructure, such as devices to access the internet, namely devices in the form of mobile phones and internet connection services from Internet Service Providers. This is because digital HBE players already have these needs independently. The Semarang District Office of Cooperatives, SMEs, Industry and Trade also supports sources of innovation for digital HBE practitioners. Government support consisted of non-information technology production equipment such as assistance in the form of press tools in 2002 and 2014, sewing machines, and compressors in 2002; and a grant of Rp. 2000,000.00 at the beginning of the business. In addition, there is also assistance provided by the government to support the adoption of innovative internet use for HBE digital actors in the form of training and business development, one of which is marketing training through e-commerce.

The performance expectancy aspect described further by Venkatesh is the level of individuals who believe that the use of information technology can help improve performance in accordance with the benefits and benefits offered by innovation. In the use of information technology, capability is a key factor in technology adoption. Many businesses do not have previous experience in using the internet and managing social media, even to support their businesses. This is because there is no special education previously received related to information technology so it is difficult to operate. Even so, there was no resistance to innovation because it received support from the GIZ to promote business through the website. This was due to the development of Human Resources carried out by providing training for Water Hyacinth Ambarawa Cluster through cooperation from GIZ Germany with the Central Java Regional Planning, Research and Development Agency. The training was held in the form of workshops on business capacity development programs for the MSME community which consisted of seven components, namely markets and trade, finance and funds, marketing and communication, labor and human resources, products and materials, organization and administration, and production and technology.

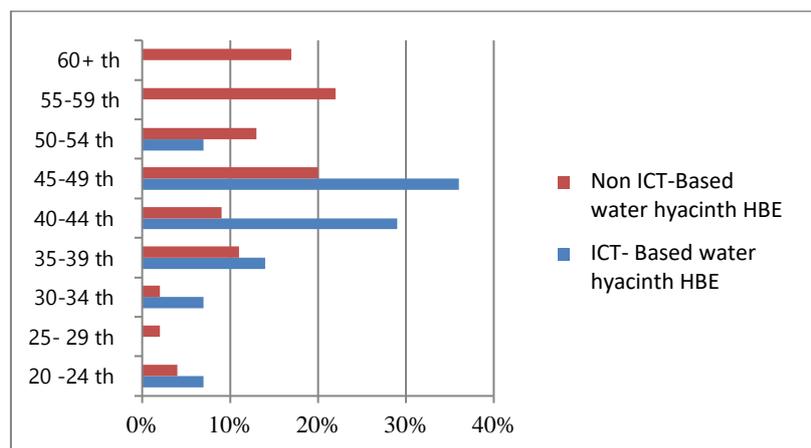
In terms of effort expectancy, it can be seen the characteristics of HBE owner or operators based on the condition of human resources in Figure 8. In general HBE owner or operators have the latest education at the elementary level, only 7% with the latest level of education, while HBE perpetrators do not receive education in school that is 8%. These conditions affect the mindset of business people, so having a positive outlook for business progress includes being enthusiastic about adopting innovation through the internet or social media. This can be seen from the number of digital HBE practitioners, most of whom have the last level of education in the high school level. It can also be

seen that the number of digital HBE players with tertiary and junior high school education levels is greater than the number of non-digital HBE owner or operators.



**Figure 8.** Percentage of Number of HBE Perpetrators by Education Level

The age factor also becomes part of effort expectancy. Usually for residents of the old age group tend to make business as a household side business and do not have high enthusiasm in business development. For the old age group, they only need low costs for consumption because they no longer finance their daily needs and children's educational needs, so they tend to make businesses as household side businesses. According to Law No.13 of 1998, the elderly or elderly group is a population that reaches the age of 60 years and over, both men and women. From Figure 9, it can be seen that there are 13% of business people including the elderly who have experienced a decline in productivity, but for the perpetrators of digital HBE are mostly in the age group of 45-49 years who are productive age (between 15 to 64 years). Even though they do not have special expertise related to internet use, the effort of HBE perpetrators is driven by education and productive age groups.



**Figure 9.** Percentage of Aged HBE Hyacinth Owner or operators by Age

Based on the explanation above, it can be concluded that the adoption of innovations that can expand the market and increase sales is influenced by three things forming individual intentions. These include the existence of procurement and operating costs in the form of devices to access the internet, marketing training through e-commerce, support from the GIZ to promote the website in the Ambarawa Klinting Cluster group, the enthusiasm due to educational factors and the age factor to use the internet as a medium. marketing, communication media, and also information retrieval.

### 4.3 Characteristics of HBE Owner or Operators

Holzer and Callahan (1998), stated that the development of technology makes digital economics a form of sharing economy that raises many small and medium businesses to enter the business. The form of sharing economy in the HBE of water hyacinth is seen based on the characteristics of business actors. This is because the main purpose of all forms of social media is to establish profits by involving individuals or groups in business (Kaplan, et al, 2010). Therefore, it can be seen that the condition of HBE perpetrators is one of the factors that influence business development. To find out the explanation about the characteristics of business actors through the level of education and the age factor in the actors of HBE can be seen in Table 4 below.

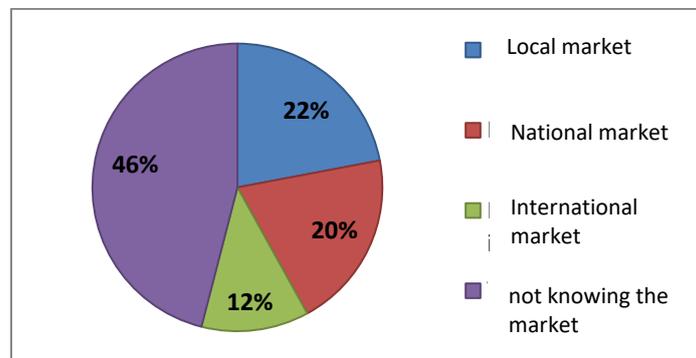
**Table 4** Characteristics of Non-Digital and Digital HBEs

No	Characteristics of HBE Owner or operators		Type of Owner or operator HBE	
			Non Digital HBEs Entrepreneurs	Digital HBEs Entrepreneurs
1	Education Level	No education	11%	0%
		Primary school	59%	0%
		Middle/Junior School	13%	29%
		High School	13%	57%
		University	4%	14%
		Concluding Remarks:	Most non digital HBEs owner or operators have the latest education at the elementary level, only 4% with tertiary education.	Most HBE digital owner or operators have the latest level of education in high school. These conditions affect people's mindsets, so it seems that they have a positive view of adopting innovation through the internet. In addition, the level of education that also supports this condition is tertiary education/university at 14%.
2	Ages	20 -24	4%	7%
		25- 29	2%	0%
		30-34	2%	7%
		35-39	11%	14%
		40-44	9%	29%
		45-49	20%	36%
		50-54	13%	7%
		55-59	22%	0%
		60+	17%	0%
		Concluding Remarks:	There are 17% of non-digital HBE owner or operators including the old age group who have experienced a decline in	Most HBE digital owner or operators are in the 45-49 year age group who are of productive age. This condition influences

No	Characteristics of HBE Owner or operators	Type of Owner or operator HBE	
		Non Digital HBEs Entrepreneurs	Digital HBEs Entrepreneurs
		productivity. The population of the old age group seems that water hyacinth HBE does not have high enthusiasm in business development.	business interests to use technology.

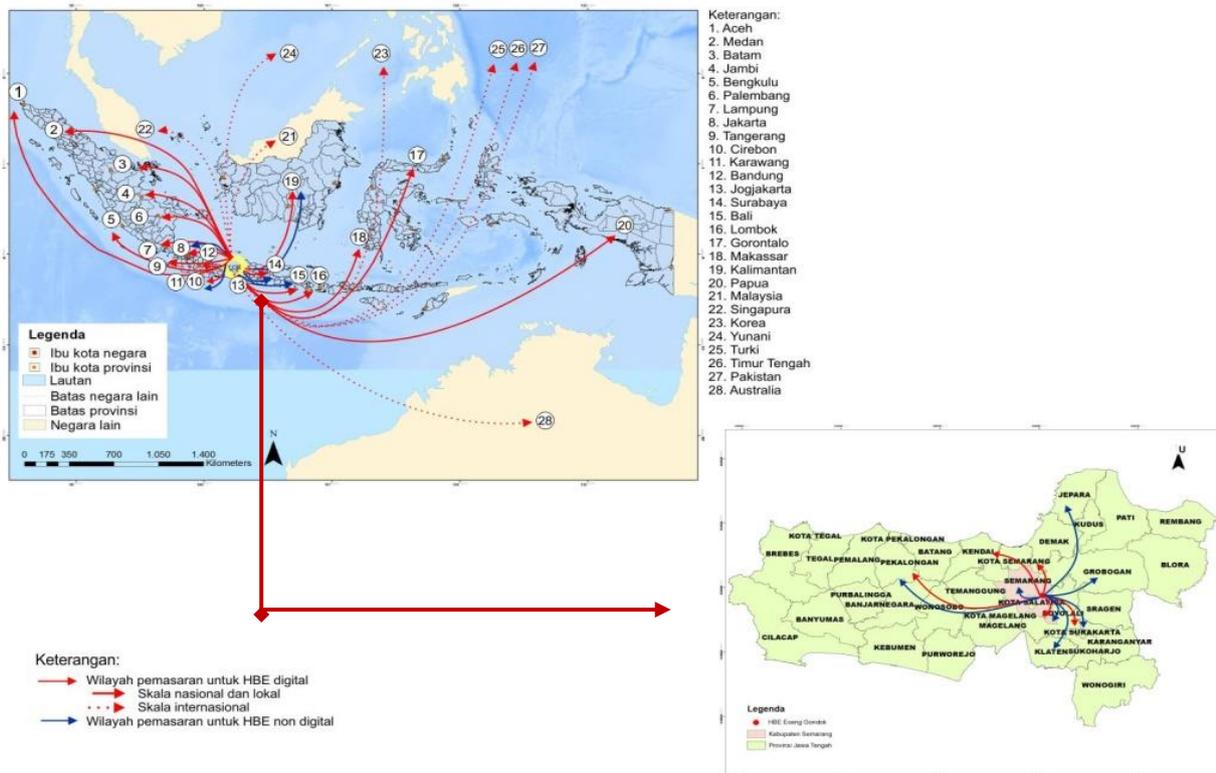
As stated by Holzer and Kathe Callahan (1998), technology adaptation is one of the main things that can be done to increase the productivity of the public sector. The development of HBEs based on the application of digital technology will be accompanied by the ability to use these technologies to access, manage, integrate, analyze and evaluate information, build new knowledge, and communicate with others in order to participate effectively (Widyastuti, et al., 2016).

That is, the adoption of innovation for HBEs can provide opportunities in expanding market access and as a marketing medium, so that information technology can provide opportunities to develop their businesses. Most of the marketing area of this water hyacinth product is the national market, but also exists for international markets. Overall, only 22% of market access in the local area of Central Java and including those close to tourist locations such as Bukit Cinta Banyubiru, Kampung Rawa Ambarawa, Muncul Banyubiru Baths, and several tourist attractions in Bandungan, Semarang Regency.



**Figure 10.** HBE Water Hyacinth Marketing Area in Rawapening Area

From the use of the internet, market access for digital HBE owner or operators is wider because it is supported by ease of communication, so that market demand comes from various consumers. It can be seen that specifically for digital HBE actors, market demand increases when there are events / exhibitions that are usually held by the Department of Cooperatives, UMKM, Industry and Trade in Semarang Regency, so HBE owner or operators can be involved in the exhibition. The involvement in the form of marketing water hyacinth handicraft products at a booth prepared by the organizer. The exhibition also has a positive impact on an ongoing basis, because consumers and potential customers who visit the exhibition collaborate as partners for their next business by interacting through communication tools such as WhatsApp Mesenger. Market access can be seen from the marketing reach of the digital HBE owner or operators in Figure 11.



**Figure 11.** HBE Digital and Non Digital Marketing Areas

**5 Conclusion**

The purpose of this study is to find out how much profit from the use of the internet for the water hyacinth HBE in the Rawapening area which is seen based on the business actors' income. The presence of water hyacinth HBE has provided employment opportunities for businesses around the Rawapening Area while at the same time to increase income as the main and side income sources. With the subject of the research, namely the water hyacinth-based SMEs in the Rawapening Area, the HBE actors who are the object of research are divided into two types, namely non-digital HBE. The second grouping of HBEs owner or operator is based on the use of the digital economy, namely utilizing internet or social media support in their efforts.

Armstrong and Taylor (2000) state that the role of HBE is to increase business opportunities and employment, increase income and community welfare, be able to bring up other small industries that are flexible and varied and create new entrepreneurs. This is consistent with the results of this study which shows that there are advantages of the presence of water hyacinth HBE in the Rawapening Area. The average income of non-digital HBE players is Rp1,414,585, while the average income of digital HBE owner or operators is Rp. 5,162,500.

The income difference from the two HBE players is due to the influence of technology in the development of water hyacinth HBE in the Rawapening Area. According to Gough, K. V., (2010), the influence of technology is one of the external supporting factors in the development of HBE. The influence of this technology can be seen through the application of digital economics to HBE digital practitioners with internet use. Digital economy is the dissemination of information and telecommunications technology that is widespread in the economic sector (Bruneckiene and Sinkiene, 2014). The use of the internet or social media in HBE is seen based on the ease of communication, buying and selling transactions, and information seeking to develop a business.

The difference in numbers also comes from the adoption of digital HBE owner or operators in using the internet which is seen based on the characteristics of HBEs, namely the level of education

and the age factor. Most of the digital HBEs have the last level of education in high school and tertiary level by 14%. These conditions affect the mindset of business people so that they have a positive outlook for adopting innovation through the internet. In addition, the perpetrators of HBE digital are also in the age group of 45-49 years which is a productive age, thus affecting the interest of businesses to use the internet. The adoption of innovations carried out by digital HBE owner or operators can also provide opportunities in expanding market access, so that information technology can provide opportunities for businesses to develop their businesses. The marketing area for digital HBE owner or operators includes national markets to international markets.

Kaplan, et al (2010) stated that the main purpose of all forms of social media is to involve individuals or groups in business and business that lead to the formation of profit / profit. Through the website <http://www.kerajutambarawa.com>, there is internet usage in utilizing business opportunities and providing financial benefits to HBEs, so that there is a positive response from consumers directly used for online marketing.

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