Challenges and strategies to encourage women to be entrepreneurs in the industrial revolution era

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ABSTRACT
Entrepreneurship sector is one of the business sectors that become choice for women. In economy industry of Indonesia, women are actively contributed in small, medium and large enterprises. The government of Indonesia supports women entrepreneur as to increase the economy welfare of the country. Unfortunately, Indonesia has entered a digital revolution called Industrial Revolution 4.0. One of technological advancement today which integrates with the physical, digital and biological world make fundamental changes into everyday human activities and life. However, this development era is still often hampered due to constraints for women to be an entrepreneur. This research aimed to know if the Educational Factors, Dual Role Factors and Socio – Cultural Factors be main challenges for women entrepreneur. It used Structural Equation Modelling method and AMOS 26 program. In addition, it obtained strategies to encourage woman to be entrepreneur. Therefore, it showed that educational factor is not a main constraint and challenges for woman entrepreneur. Woman have a multiple role as housewife and woman entrepreneur in business field. However, this research results obtained that dual role factors being main constraint for woman entrepreneur especially in Desa Adat Kuta. Furthermore, improving skills to understand Internet of Things technology, utilizing digital technology to improve productivity and competitiveness, utilizing e-commerce as a place for creating a business, and participating in entrepreneurship seminar or event supported by government to face industrial revolution were the strategies to encourage woman to be entrepreneur in Industrial Revolution 4.0.

Keywords: woman entrepreneur, constraint and challenges, strategies, industrial revolution 4.0

INTRODUCTION
As the times had increasingly developed, economic growth became a central issue which is an economic development is the priority in the future. One economic development foundation is in focusing an attention on entrepreneurship development. Today’s life, entrepreneurship is not only owned by men but women have also taken this field. The role is increasingly evident from the increasing number of business people from among women. The entrepreneurship sector is one of the business sectors that becomes choice for women to prove their inner abilities attempted. There have been many women who prove themselves capable to become entrepreneurs that can be seen from the small level, medium and large businesses.

Different things have happened in the world today. Society has entered a revolution that is often heard with the Industrial Revolution 4.0. The Industrial Revolution 4.0 is the latest technological advancement today that integrates the physical, digital and biological world, causing a fundamental change in the way of human life. This revolution, known as the digital revolution, happened because of the proliferation or rapid development of computers that brought advanced connectivity and record automation in almost all fields.

Unfortunately, this development era is still often hampered due to constraints for women to be an entrepreneur. According to the prior research by Alma (2003), the authors chose Educational factors, Dual Role Factors and Socio – Cultural factors as the main constraints for woman entrepreneur. But with the Industrial Revolution 4.0 in Indonesia, women can become an entrepreneur by considerate on using technology to face those
challenges.

Looking at the problem and title of the research to be studied, it is necessary to present an explanation of previous research in order to reveal the same phenomenon in different perspectives so that it is expected to enrich knowledge. Previous research has a role in every scientific research that will be carried out. Previous research can be used as a reference in one's research. Firstly, the research conducted by Mazlina Mustapha and Punitha A/P Subramaniam in 2016 found that low financial aids, low knowledge of industries and low management skills are the main challenges and constraint for women entrepreneur. Secondly, the research conducted by Fridah Muriungi Mwobobia in 2012 found that multiple responsibilities, lack of education and discrimination from the social environment have a significant reason to be challenges for women entrepreneur. Thirdly, the research conducted by Elizabeth Chinomona and Eugene Tafadzwa Maziriri in 2015 found that gender bias or gender discrimination of women entrepreneurs, lack of education and training and financial are the positive effect of challenges that facing by women entrepreneur. Lastly, a research conducted by Asghar Afshar Jahanshahi, Prof. Dr. Bairagi Khacardas Pitamber, and Khaled Nawaser in 2010 found that the main constraint of women entrepreneurs are lack of confidence, socio-cultural barriers, market-oriented risks, motivational factors, knowledge in business administration, awareness about the financial assistance, exposed to the training programs, identifying the available resource.

In accordance to the background described above, it is interested in conducting research with the title “Challenges and Strategy for Women to be Entrepreneur in Industrial Revolution 4.0”.

**LITERATURE REVIEWS**

**Woman Entrepreneur**

Women entrepreneurs can be defined as a woman or a group of women who start, organize and operate a business company. The development of women entrepreneurs in developing countries such as Indonesia is very potential as the main driving process of women's empowerment and social transformation (Tambunan, 2017). Rafi & Kulaksi (2021) explains that due to gender inequality, women entrepreneurs tend to be in less profitable and less capital-intensive sectors. In the best-case scenario, advancing women's equality could add as much as US$28 trillion according to McKinsey & Company. Women have an important role in economy, capability and expertise within developing business is one indicator in the participation of women in the economics for example actively participating in supporting the economy by opening a new business field. In addition to being a women entrepreneur, they must be clever to divide time for both the household and work, given the dual role of women in this life. Women must also be equipped with skills to be able to face the world of competition in the business world. The reason they pursue this business is driven by factors according to Safitri and Hutamimii (2014), among others: (1) Want to show their pretension skills (2) Helping the household economy (3) Frustration with previous jobs. Entrepreneurial activities for women can be started from hobbies, for example, the hobbies are like baking, sewing, cooking, etc. Besides economic factors, to get family needs and level of family welfare is the factors that make women to work by themselves.

Women entrepreneur is one alternative choice for women to show their ability to manage their business. The statement from (Zimmerer & Scarborough, 2002) that more women realize that being entrepreneurs is the best way to penetrate male dominance which hinders career advancement to the top of organizations through their own business. To measure the variable interest in starting this new business, researchers will use the following indicators according to (Indarti et al., 2010).

1. Don't depend on other people
2. Helping the social environment
3. Better life
4. Want to be an entrepreneur
5. Glad to be an entrepreneur

**Educational Factors**

Entrepreneurs who have the potential for success are those who understand the use of education to support activities, and are willing to learn to increase knowledge. The educational environment is used by entrepreneurs as a means to an end. Education here means understanding an issue that is seen from the standpoint of science or theory as a basis for thinking (McLeod, 2016). The issue of education is very important for success entrepreneurial. The first failure of an entrepreneur is because someone is relied more on experience than education. However, experience is one of the important parts in gaining entrepreneurship education. In the other hand, if an entrepreneur only has the capital of education but does not have practical experience. Therefore, the combination of education and experience is the main factor determining success entrepreneurial (Lewis, 1987).

Education is basic principles in relation to establishing or start a business, which is expected knowledge transfer and acquisition and also the development of lead entrepreneurial skills for increasing an efficiency and effectiveness from potential entrepreneurs (Cooney, 2012). Hisrich and Peters (1995) stated that entrepreneurship
is not a congenital matter, but it is acquirable and trainable; therefore, the environment, institutes, and all educational levels play an important role in this. There are several indicators that conclude to measure educational factors, such as:

1. Tertiary education has provided entrepreneurial knowledge
2. Tertiary education built the character of entrepreneurship
3. Tertiary education helps increase self-confidence
4. Improve tertiary education knowledge
5. Tertiary education given personal moral education

**Dual Role Factors**

A dual role is two or more roles that are carried out in the same time simultaneously, in this case the role of a woman as a wife for their husband, a mother for their children, and a role as a career woman. This dual role means women as wife and mothers in the family, such as being partners for husband in taking care of the household, providing household needs, and educate children (Suryadi, 2004).

The dual role is mentioned by the concept of cultural dualism, namely the concept domestic sphere and public sphere. This understanding illustrates the separation of roles and division of labor between men and women in. Women are generally limited to the domestic environment and men are generally dominant in the public sphere (Dowling & Pfeffer, 1975).

**Socio – Cultural Factors**

The socio-cultural environment is broadly composed of social and cultural systems of people. This refers primarily to the intangible elements created by humans that influence behavior, relationships, perception and way of life, and their survival and existence. In other words, the socio-cultural environment consists of all elements, conditions and influences that create a person's personality and potential influences attitude, disposition, behavior, decisions and activities. These elements include beliefs, values, attitudes, habits, forms of behavior and lifestyle of people developed from culture, religion, education and social conditioning, (Bennett & Kassarjian, 1972 & Adeleke, et al., 2003 in Akhter & Sumi, 2014). According to (Rahmadita, 2013) indicators of work family or dual role conflict among women are:

1. Pressure as a parent
2. Marriage pressure
3. Lack of involvement as a wife
4. Lack of parental involvement

**Strategy**

Strategy is a tool to achieve goals. In its development, the concept of strategy continues to develop. This can be shown by the different concepts of strategy over the past 30 years. Strategy is a tool to achieve company goals in relation to long-term goals, follow-up programs, and priority allocation of resources (Chandler, 1962). Besides that, (Learnen et al., 1965) stated that Strategy is a tool to create competitive advantage. Thus, one focus of the strategy is to decide whether the business must exist or not exist. In other hand, strategy is a motivational force for stakeholders, such as stakeholders’ debtholders, managers, employees, consumers, communities, government and so on, who either directly or indirectly receive the benefits or costs incurred by all actions taken by the company (Andrews, 1980 & Chaffe, 1985).

Strategic entrepreneurship defines entrepreneurial activities with a strategic perspective which the importance of managing strategic sources or entrepreneurial activities to gain profits (Daryani and Tabrizinia, 2015). Entrepreneurial actions are defined as “strategic actions that are realized with entrepreneurship mentality”. Strategic entrepreneurship can be defined as the fact that an entrepreneurial and strategic perspective complement each other in the application of actions designed to create wealth (Dogan, 2015). The indicators used are:

1. Technology education
2. Communication skill
3. Critical Thinking
4. Creative

**METHODS**

This research used quantitative design in which it was conducted at Desa Adat Kuta, Badung Regency, Bali. Desa Adat Kuta is a potential of the dominant industrial sector and tourism services. These conditions influenced the Kuta local people especially women to create business. According to (Sugiyono, 2015) the sample is part of the number and characteristics of the population. The sample in this study is women entrepreneur. In the sampling technique for this study, researchers used a non-probability sampling technique that is Purposive Sampling. The numbers of respondents are 100 women entrepreneurs in Desa Adat Kuta. In this study, the data were directly
obtained from the results of the questionnaires to women entrepreneurs in Desa Adat Kuta, Badung Regency. The data in this study were analyzed using validity and reliability, descriptive statistics and SEM (Structural Equation Modeling).

Validity test conducted aims to test valid and invalid questionnaire items. An instrument is declared valid if it is able to measure what is desired and can reveal data from the variables studied appropriately. If there are items that do not meet the requirements, then these items will not be further investigated. According to (Sugiyono, 2017), the minimum requirements for an item are considered valid are:

a. If the value of \( r \geq 0.30 \), then the question items from the questionnaire are valid.
b. If the value of \( r \leq 0.30 \), then the question items from the questionnaire are considered invalid.

The reliability test is intended to measure the level of consistency of research instruments. In research this is tested through Confirmatory Factor Analysis by AMOS (Analysis Moment of Structural), and if it is of value Cronbach’s alpha is greater or equal to 0.60 means the instrument is reliable.

The statistical testing method uses Structural Equation Modeling (SEM). SEM can be described as an analysis combining a factor analysis approach, a model structural (structural model), and path analysis (path analysis). According to Ghazali (2011), SEM is a combination of statistical methods separate factor analysis and the simultaneous equation modeling. Data analysis used Analysis Moment of Structural (AMOS).

RESULTS AND DISCUSSION

Validity Test

A valid instrument means that the instrument can be used to measure what should be measured. This instrument used to get the data was valid. To test this instrument the validity of using product moment correlation. Validity testing can be done using AMOS 26 for Windows. Validity Test is testing the construct (indicator) whether it has a high proportion of variance or not. Meet the criteria if the value of C.R. > 1.96, while "Loading Factor" or "Standardized Loading Estimate" > 0.5.

![FIGURE 1. SEM Path Chart of Validity Test](image)

The diagram consists of five variables in the research. Where the X1 is Woman Entrepreneur variable, X2 is Educational Factors, X3 is Dual Role Factors, while X4 is Socio – Cultural Factors to find the effect to Y variable which is Strategy for Woman Entrepreneur. Which the variables above are consists of several indicators to measure.

<table>
<thead>
<tr>
<th>TABLE 1. Validity Test</th>
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Chi-Square=532.826  
Probability=.000  
DF=179  
CMIN/DF=2.977  
CFI=.660  
AGFI=.561  
TLI=.592  
CFI=.853  
RMSEA=.141
Based on the analysis results in the table above, there are indicators that show good results with a value of \( \text{C.R.} > 1.96 \) and the estimate standardize value > 0.5 are (X1.4, X1.5, X3.1, X3.2, X4.1, X4.2, Y.2, Y.3) and indicators that are not good or invalid in the standardize estimate is < 0.5, are (X1.1, X1.2, X2.3, X2.4).

### Reliability Test

Reliability Test with the Construct Reliability Test tests the reliability and consistency of the data. It would be based on the criteria if Construct Reliability > 0.6. Construct Reliability values between 0.6 to 0.7 still can be accepted if it is provided that the construct validity (indicator) in the model is good. The results fulfilling the required requirements are presented in the following table.

### TABLE 2. Recapitulation of Research Instrument Reliability Test Results

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Woman Entrepreneur (X1)</td>
<td>0.735</td>
<td>Reliable</td>
</tr>
<tr>
<td>2</td>
<td>Educational Factors (X2)</td>
<td>0.660</td>
<td>Reliable</td>
</tr>
<tr>
<td>3</td>
<td>Dual Role Factors (X3)</td>
<td>0.834</td>
<td>Reliable</td>
</tr>
<tr>
<td>4</td>
<td>Socio – Cultural Factors (X4)</td>
<td>0.817</td>
<td>Reliable</td>
</tr>
<tr>
<td>5</td>
<td>Strategy Woman Entrepreneur (Y)</td>
<td>0.905</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

The reliability test results presented in Table 2 show that all research instruments have a Cronbach’s Alpha coefficient of more than 0.6. So, it can be stated that all variables meet the reliability or reliability requirements so that they can be used to conduct research.

### Structural Equation Modeling (SEM)

The Structural Equation Modeling is a second generation of multivariate analysis technique that allows researchers to examine the relationship between complex variables both recursive and non-recursive to obtain a comprehensive picture of the whole model (Ghozali, 2008). Structural equation modeling (SEM) is carried out
with the help of the AMOS program. The AMOS program shows measurements and structural problems, and is used to analyze and test hypothetical models.

**Measurement Model (Confirmatory Factor Analysis)**

**Goodness of Fit Test**

The results of data recapitulation are included in the AMOS program 26 which is access data entry from SEM then processed. The chi-square value of 33.942 was obtained; the probability value is 0.109; the CMIN / DF value is 1.358; RMSEA value is 0.060; the GFI value is 0.934; the AGFI value is 0.854; TLI value is 0.951 and the CFI value is 0.973. These results are done evaluation based on Goodness of Fit Indices as in Table 3.

<table>
<thead>
<tr>
<th>Goodness of Fit</th>
<th>Indices Results</th>
<th>Cut off value</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X^2$ Chi Square</td>
<td>33.942</td>
<td>$&lt;$ small value</td>
<td>Good</td>
</tr>
<tr>
<td>Probability</td>
<td>0.109</td>
<td>$\geq$ 0.05</td>
<td>Good</td>
</tr>
<tr>
<td>CMIN/DF</td>
<td>1.358</td>
<td>$\leq$ 2.00</td>
<td>Good</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.060</td>
<td>$\leq$ 0.08</td>
<td>Good</td>
</tr>
<tr>
<td>GFI</td>
<td>0.934</td>
<td>$\geq$ 0.90</td>
<td>Good</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.854</td>
<td>$\geq$ 0.90</td>
<td>Not Good</td>
</tr>
<tr>
<td>TLI</td>
<td>0.951</td>
<td>$\geq$ 0.95</td>
<td>Marginal</td>
</tr>
<tr>
<td>CFI</td>
<td>0.973</td>
<td>$\geq$ 0.95</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

According to table 3, all criteria of the Goodness of fit in this model are good and Marginal. It means the model can be further continued. The accumulation of the Goodness of Fit based on the research by rejecting the invalid construct of indicators. After modified the first path chart model in AMOS Program 26, the indicators and errors who produced huge estimates covariance are removed so, the path chart will be as the figure 2.

**FIGURE 2. Path Chart after modified**

**Hypothesis Test**

After modifying to fit model of the research, the next step is to test how the hypothesis in this research based on the hypothesis that have been listed on Chapter 2. By using AMOS 26 program, testing this hypothesis is based on data processing research using SEM analysis, by analyzing the regression values shown in Table 4.9 (Regression Weights Structural Equation Modeling Analysis). Testing this hypothesis is to analyze the value of the Critical Ratio (CR) and the Probability (P) value of the results of data, compared with the statistic restrictions.
required, namely above > 1.978 for the value of CR 0.05 for the value < P.

**TABLE 4. Regression Weights after Modified**

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>X1</td>
<td>2.625</td>
<td>3.510</td>
<td>5.713</td>
<td>***</td>
</tr>
<tr>
<td>Y</td>
<td>X2</td>
<td>1.007</td>
<td>.176</td>
<td>.748</td>
<td>.455</td>
</tr>
<tr>
<td>Y</td>
<td>X3</td>
<td>.916</td>
<td>.154</td>
<td>5.963</td>
<td>***</td>
</tr>
<tr>
<td>Y</td>
<td>X4</td>
<td>.821</td>
<td>.096</td>
<td>8.582</td>
<td>.654</td>
</tr>
</tbody>
</table>

As the table above shown the hypothesis I are rejected because the Critical Ratio (CR) and the Probability (P) value of the results of data of X2 is 0.748 and 0.455, compared with the statistic restrictions required, below 1.978 for the value of CR higher than 0.05. It means in Desa Adat Kuta, the woman entrepreneur rejected the first of factors that may be constraint and challenges for them. According to the X1 variable that has positive effect to solve the challenges with strategy, the strategy can be applied.

**CONCLUSIONS AND SUGGESTION**

According to the results of the questionnaires, there are a lot of women who still do not understand what is Industrial Revolution 4.0 and how to face it based on the economic field. There are several strategies that can be conducted which are improving skills to understand Internet of Things technology. It is also encouraging that the workforce in Indonesia should continue to improve its skills in understanding the use of Internet of Things technology. Iot can also be integrated with production capabilities to create an easy access (Airlangga, 2019).

Second one is utilizing digital technology to improve productivity and competitiveness the use of digital technology to spur productivity and competitiveness for the small and medium industries. Third strategy, women can utilize e-commerce as a place for creating a business. The last strategy was women should be active participating in entrepreneurship seminar or event. It would be able to face industrial revolution 4.0 because if women do not want to learn and know the development of the current era, they will certainly remain a woman who has only one role without being able to prove that women can also have a huge positive impact to the country’s economy.

Therefore, for subsequent research if want to use a similar topic, things that important to do is more explore the situation and condition to the research place and make previous research as only the references because different places have also had different things that exist.

**REFERENCES**


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