Human capital and entrepreneurship and their impact on the productivity of traditional craftsmen

ABSTRACT: This research is one of the efforts to improve the productivity of traditional craftsmen in Bone Regency South Sulawesi Province considering the handicrafts industry in Bone Regency is experiencing growth in the number of business units and workers. From 2010 to 2017, there was a decrease in the number of business units, which affected the number of workers in those units. The decrease ranged between 19%-29%. This research investigates and measures human capital and entrepreneurship aspect of craftsmen in increasing their productivity. Furthermore, it is expected that a solution to various problems experienced by the traditional handicrafts industry in Bone Regency found. This research employed quantitative method by using Structural Equation Modelling (SEM) that reveals the correlation and effect, either direct or indirect between endogenous and exogenous variables. The result of the analysis shows that Human Capital has direct effect on productivity, and Human Capital has indirect effect on productivity through entrepreneurship. For craftsmen, they should have the courage to change their mind set and habits that are monotonous in order to be able to improve all the elements of creativity in their entrepreneurial spirit related to their craftsmanship for the sake of the productivity of their products.

RESUMEN: Esta investigación presenta los esfuerzos para mejorar la productividad de los artesanos tradicionales en la provincia de Sulawesi del sur de Bone Regency (Indonesia) considerando que esta industria está experimentando un crecimiento en número de unidades de negocios y de trabajadores. De 2010 a 2017, hubo una disminución en el número de unidades de negocios, lo que afectó el número de trabajadores en esas unidades. La disminución osciló entre 19%-29%. Esta investigación investiga y mide el aspecto del capital humano y el espíritu empresarial de los artesanos para aumentar su productividad. Además, se espera que se encuentre una solución a varios problemas experimentados por la industria de artesanías tradicionales en la provincia de Sulawesi del Sur de Regency Bones. Esta investigación empleó un método cuantitativo mediante el uso de modelos de ecuación estructural (SEM) que revela la correlación y el efecto, ya sea directo o indirecto entre variables endógenas y exógenas. El resultado del análisis muestra que el capital humano tiene un efecto directo en la productividad, y el capital humano tiene un efecto indirecto en la productividad a través del espíritu empresarial. Para los artesanos, deben tener el coraje de cambiar su mentalidad y sus hábitos que son...
1. Introduction

In the development of economic history, the attention of governments in most countries in the world initially more focused on large scale businesses, or at least on medium scale businesses. However, in subsequent developments, there had been quite dynamic changes in orientation as governments began to notice and acknowledge the existence of small scale businesses. The government's attention to small scale business has shown a consistent attitude towards the urgency of this sector in the Indonesian economic system.

Small businesses in their development often face various obstacles. These are generally related to some aspects such as capital, licensing, investment opportunities, business opportunities, marketing, product quality and lack of management skills, experience and technology used.

In the handicrafts industry in Bone Regency from 2010 to 2017, there was a decrease in the number of business units, which affected the number of workers in those units. The decrease ranged between 19%-29%.

A phenomenon interesting to be observed is the educational qualifications of the craftsmen. This aspect is very closely related to one of the variables analysed in this research, human capital, and another factor is the lack of entrepreneurial spirit owned by the craftsmen.

It is argued that the development of the education sector with human resources as the main focus has contributed directly to the economic growth of a country, through the improvement of the skills and production capabilities of workers (Schultz, 1961). In this case, human capital is a long-term investment in the development of human resources to increase productivity (Becker, 1994). Human capital is the existing knowledge that lies within human resources, which is the basis for productivity improvement. In addition to human capital, entrepreneurial spirit also plays a very important role for craftsmen.

Entrepreneurs are people who organize, manage and have the courage to take risks in order to start a new business and create opportunities (Steinhoff & Burgess, 1993). Entrepreneurs should be able to look forward to the future more optimistically. In this case, they are able to look ahead by thinking and taking advantage of opportunities with full calculation. Since having a long-term view of the future, they will always try to keep on working (Suryana & Bayu, 2010). The key is the ability to create something new and different from the existing one. Despite the possible risks, this kind of person must remain steadfast in looking for opportunities. That is why these two factors play an important role in improving the productivity of craftsmen.

1.1. Research Problem

What is the effect of human capital on the productivity of the craftsmen?
What is the effect of human capital on the productivity through the entrepreneurial spirit of the craftsmen?

1.2. Objectives of the Research

Analysing and assessing the effect of human capital on the productivity of the craftsmen.
Analysing and assessing the effect of human capital on the productivity through the entrepreneurial spirit of the craftsmen.

2. Literature Review
The competitive effectiveness of a company lies in the managerial ability to develop, provide, and integrate individuals collectively in order to gain specialized knowledge in producing skills, innovations and abilities that will in turn lead to improved performance (Rastogi, 2000). In addition, Andrew Mayo (2001) argues that maximizing human capital through acquisition, retention, growth should be a top priority of all executives in an organization because employees are one of the important factors that encourage the performance and productivity of all other employees (Mayo, 2001). In addition, a healthy organization is a healthy organization financially, healthy in business and has a good human capital competence (Ruslan, Musa, & Parawansa, 2017).

It is studied the extent to which investment in human capital and social capital, in addition to the "talent" effect, can enhance entrepreneurial performance (Bosma, Van Praag, Thurik, & De Wit, 2004). The results reveal that human and social capital investment can improve entrepreneurial performance substantially. In his research suggests that Human capital - including education, experience, knowledge, and skills affect success, and the results of his research indicate a positive correlation between human capital and success (Unger, Rauch, Frese, & Rosenbusch, 2011).

### 2.1. Human Capital

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### 2.2. Entrepreneurship

The terms of “entrepreneur” and “self-employed” are often used interchangeably, although they have somewhat different substances. Conceptually, entrepreneur is often termed as a skilled person in exploiting opportunities to develop his business with the aim to improve the quality of his life. In essence, everyone is an entrepreneur in the sense that they are capable of being self-sufficient in running their business in order to achieve their personal, family, and community goals, and even national goals, but many of us do not strive to achieve better performance for the future, and become dependent to others, other groups and even other nations. It is proposed the definition of entrepreneur as follows (Scarborough & Zimmerer, 1996).

An entrepreneur is one who creates a new business in the face of risk and uncertainty for the purpose of achieving profit and growth by identifying opportunities and assembling the necessary resources to capitalize on those opportunities.”

Entrepreneurs are people who organize, manage and have the courage to take risks in order to start a new business and create opportunities (Steinhoff & Burgess, 1993). An entrepreneur should be able to look forward to the future more optimistically. In this case, they are able to look ahead by thinking and trying, as well as by taking full advantage of opportunities. Future-oriented people are those with perspectives and views of the future.
Entrepreneurs who have achievement motivation in general have the following characteristics (Suryana & Bayu, 2010).

1. Trying to solve own difficulties and problems.
2. Always needing immediate feedback to see own success and failure.
3. Having high level of personal responsibility.
4. Courageous to take calculated risks.

The definition of entrepreneur is actually attached to its characteristics. In this case, entrepreneur refers to everyone who is good at creating opportunities. The opportunities are created through value addition to goods or services by applying those characteristics.

### 2.3. Productivity

Any organization either in the form of company or non-profit organization will always strive for the members or workers involved in the activities of the organization have a good performance in the form of a high level of productivity to realize established goals.

Productivity is important especially in companies because the increase of company productivity means the increase of company competitiveness. It is argued that:

"Classical theory explains that productivity is measured by the number of products, services, and processes produced by a company divided by utilization and use of factors of production including land (L), labour (L) and capital (C). So far, productivity is believed to be an important aspect of competitiveness because it is an indicator of efficiency, and if a company operates inefficiently, it is guaranteed that it will be difficult to maintain its productivity and competitiveness" (Zuhal, 2010)

The productivity is a comparison between the results achieved (output) with the total resources (input) used per unit time (Simanjuntak, 2000). Resources can be land, raw materials, machinery, and labour. While the results achieved can be the amount of output produced and the value of output (in the form of currency units). When output is compared to all the resources used for production activities, the result is called total productivity. On the other hand, if only one resource is used for production activities, the result is called partial productivity, such as the productivity of land, materials, machinery, or labor.

Based on the above statement, it can be concluded that productivity is a mental attitude of workers to always strive more than what has been and is being attempted to accelerate the achievement of goals.

![Conceptual Framework](image)

### 3. Research Methods

The research was conducted in Bone Regency Sulawesi Selatan involving 143 culture-based
craftsmen. Quantitative data were analysed using descriptive analysis and Structural Equation Modelling (SEM). In the analysis according to Ghozali (2006), the path analysis model of all latent variables in Partial least square (PLS) consists of three sets of relationships. A first, inner model specifies relationships between latent variables (structural models). Second, outer model specifies relationships between latent variables and the measurement model. Third, weight relation is where the case value of latent variables can be estimated.

### 3.1. Inner Model

Inner model is also called inner relations and substantive theory. It describes the relationship among latent variables based on the substance of the theory. The equation model is as follows.

\[ \eta = \beta_0 + \beta_1 \eta + \Gamma \xi + \zeta \]

The above formula describes the endogenous (dependent) vector of latent variables. The symbol of \( \zeta \) is a vector of exogenous latent variables. The symbol of \( \xi \) unexplained variance. PLS is designed for recursive models. Therefore, there is a relationship between latent variables, each dependent latent variable, or often called the causal chain system of latent variables.

### 3.2. Outer Model

An outer model is also called outer relations or measurement models. It defines how each indicator block is related to its latent variables. The outer model of a block with a reflexive indicator can be indicated by the following equation:

\[ x = A_\xi \xi + e_x \]

\[ y = A_\eta \eta + e_y \]

\( x \) and \( y \) are indicators or manifest variables for exogenous \( \xi \) and endogenous \( \eta \) latent variables. Meanwhile, \( A_\xi \) and \( A_\eta \) is a loading matrix that describes a simple regression coefficient that connects latent variables to the indicator. Residual measured by \( e_x \) and \( e_y \) can be interpreted as measurement error or noise.

### 3.3. Weight Relation

Inner and outer models provide the specifications followed in the estimation of the PLS algorithm. We need to define the weight of the relation with weight relation. The value of the case for each latent variable is estimated in PLS as follows:

\[ \xi_b = \Sigma_{kb} w_{kb} x_{kb} \]

\[ \eta_i = \Sigma_{ki} w_{ki} y_{ki} \]

\( w_{kb} \) and \( w_{ki} \) are k weights used to form estimates of latent variables of \( \xi_b \) and \( \eta_i \). Estimates of latent variables are linear aggregates of indicators whose weight values are obtained from PLS estimation procedures such as specified by inner and outer models where \( \eta_i \) is a vector of endogenous (dependent) and \( \xi_b \) an exogenous (independent) vector of latent variables. The symbol of \( \zeta \) is a residual vector and \( \beta \) and \( \Gamma \) is the path coefficient matrix.

### 3.4. Hypotheses

There are two hypotheses presented in this study. The first hypothesis is “human capital has a significant effect on the productivity of craftsmen”. The second hypothesis is “there is an indirect influence between human capital and productivity through entrepreneurship”.

### 4. Results

#### 4.1. Human Capital Which Affects the Productivity of the Craftsmen

![Figure 2](Image)

The first Partial Least Squares Model for the Hypothesis 1
The Smart PLS output illustrated in Figure 1 shows the presence of an indicator that has a factor loading below 0.5, which is having a foresight (HF). According to Ghozali (2008) these indicators should be dropped from the model because they have low convergent validity. The model is rerun by omitting having a foresight (HF) and the result is presented in Figure 2 below.

In Figure 2, the model already meets the convergent validity requirement since there are no more factors loading below 0.5, meaning that the model is ready to be analysed.

### 4.2. Evaluating Outer Model or Measurement Model

Human capital and productivity constructs are analysed by looking at the convergent validity and reliability of each indicator. The output in Table 1 and Figure 2 shows that after dropping the variable of having a foresight (HF), the factor loadings for both constructs are above the required 0.5, with a T-statistics above 1.96 (for a significance level of 0.05). This indicates that the constructs have good discriminant validity.

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer Loadings (Mean, STDEV, T-Value)</td>
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<td></td>
</tr>
</tbody>
</table>

**Figure 3**
The second Partial Least Squares Model for the Hypothesis 1
4.3. Testing Structural (Inner) Model

PLS output indicates that there are some indicators that have a factor loading below 0.5 namely MG (conveying ideas), BTR (courage to take risk), and MPD (visionary). These indicators are dropped because they have low convergent validity. The model is rerun by omitting those indicators and the result is shown below.

### Table 2
R-Square and Cronbachs Alpha

<table>
<thead>
<tr>
<th>Human Capital</th>
<th>Productivity</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.775107</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3
Path Coefficients (Mean, STDEV, T-Values)

| Human Capital | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | Standard Error (STERR) | T Statistics (|O/STERR|) |
|---------------|---------------------|-----------------|----------------------------|------------------------|--------|
| Productivity  | 0.80402             | 0.882409        | 0.010344                   | 0.010344               | 85.108309 |
From table 3 above, it can be seen that the coefficient parameter between human capital and productivity is 0.8804, indicating that there is a positive correlation between human capital and productivity.

### 4.4. Human Capital Affects the Productivity of the Craftsmen through their Entrepreneurial Spirit

**Figure 4**
The First Partial Least Square Model for the Second Hypothesis

PLS output indicates that there are some indicators that have a factor loading below 0.5 namely MG (conveying ideas), BTR (courage to take risk), and MPD (visionary). These indicators are dropped because they have low convergent validity. The model is rerun by omitting those indicators and the result is shown below.

**Figure 5**
The second Partial Least Square Model for the Second Hypothesis

In figure 4, the model already meets the convergent validity requirement because there are
The output shows that the factor loading of the constructs is above the required 0.6, with a T-value above 1.96 (for a significance level of 0.05). This indicates that the constructs have good discriminant validity.

### 4.6. Testing Structural (Inner) Model

The output shows that the factor loading of the constructs is above the required 0.6, with a T-value above 1.96 (for a significance level of 0.05). This indicates that the constructs have good discriminant validity.
5. Discussion

5.1. Human Capital Affecting Productivity

Partially, human capital has significant effect on productivity. This condition can be interpreted that the craftsmen in handicrafts industry who possess good human capital condition, for example, having knowledge gained from non-formal education, skill, praiseworthy work attitude, high level of competence and talent, will increase productivity which is an invaluable asset for the progress of their business. The results of this research are in line with the empirical study conducted by (Mayo, 2001) that the driving factor of this economic value is human capital with all the knowledge, ideas, creativity and innovation it has that increase the productivity of a company. This is relevant to some theories and research as conducted by (Schermerhon, 2005) revealing that human capital is also the core of a business because it has the economic value of human resources in terms of ability, knowledge, creative ideas, innovation, energy and commitment.

The results of this study explain that human capital can increase the value of productivity which is also determined by the factors of knowledge and competence of craftsmen. Increasing the productivity of craftsmen in this craft is driven by a large part of the craftsmen’s efforts to improve their skills, attitudes and ability to always grow and develop in producing crafts.

The training and skills that are often held by Bone Government are aimed at changing behaviour and increasing the capabilities of the craftsmen. Changes in the desired behaviour of craftsmen are certainly related to the increase in skills, attitudes, knowledge, behaviour, and others that can affect work productivity. So far, only a small number of craftsmen have had the awareness to want to take part in the training held by Bone Government. This is not only an obstacle for abilities of Bone government but also to increase the business spirit of the craftsmen. Therefore, the craftsmen cannot only make or produce but also be able to exit in the market.

In general, human capital of craftsmen is able to grow productivity well. It only needs guidance and empowerment direction from Bone government as a whole. The government should foster human resource development and technological capacity building. Human resource development is in the form of design training and entrepreneurial motivation. However, the development has not been carried out thoroughly for craftsmen. The development of technological capabilities in the form of technological capabilities in this way provides knowledge to craftsmen on how to market their products by using technological assistance, for example by using the world of social communication such as Facebook, Instagram, and even internet markets such as Bukalapak and Tokopedia. This really helps craftsmen to gain market share nationally if they are serious about this method.

5.2. Human Capital affecting Productivity through Entrepreneurship

The results of this research indicate a strong correlation between human capital and entrepreneurship. This correlation can be seen from the table below:

<table>
<thead>
<tr>
<th></th>
<th>Original Sample (O)</th>
<th>Sample Mean (M)</th>
<th>Standard Deviation (STDEV)</th>
<th>Standard Error (STERR)</th>
<th>T Statistics (|O/STERR|)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Capital -&gt;</td>
<td>0.879473</td>
<td>0.880437</td>
<td>0.008098</td>
<td>0.008098</td>
<td>108.601540</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurship-&gt;</td>
<td>0.902783</td>
<td>0.903412</td>
<td>0.010377</td>
<td>0.010377</td>
<td>86.995326</td>
</tr>
<tr>
<td>Productivity</td>
<td></td>
<td></td>
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productivity through entrepreneurial spirit. Referring to the theory, it implies that if the craftsmen have human capital and entrepreneurial spirit, their productivity will increase and organizational goals will be achieved. Thus, productivity and human capital are synergistic constructs.

Based on data analysis, it was found that the indirect effect of the Human Capital variable on productivity through entrepreneurial creativity has a higher coefficient of value compared to the coefficient value of the direct effect of the variables of Human Capital on productivity.

The results of this study illustrate that if the productivity of the craftsmen wants to be improved, the first thing to do is to try to develop the spirit of entrepreneurial creativity. This influence can be interpreted that if the craftsmen of Songkok Recca craft industry have good human capital, for example, accompanied by knowledge, skills, work attitudes that are commendable, have high competence and talent, then the craftsmen will continue to orient themselves to entrepreneurship that can compete and consistently pursue handicraft business that is occupied. Thus, the productivity of craftsmen will increase by itself.

The results of this research showing the effect of human capital on productivity through entrepreneurship are in line with an empirical study conducted by (Cowling, 2003) on entrepreneurs, which revealed that human capital entrepreneur has a positive correlation and positive and significant role to the productivity of workers. It is in line with the finding of (Aisyah, Musa, & Ramli, 2017). It is stated that high entrepreneurship orientation in the same direction will have a significant impact on increasing the competence of entrepreneurs and impact on improving business performance.

6. Conclusion

Human capital and productivity have a positive correlation, as productivity is highly dependent on human capital possessed by the craftsmen. This research reveals that productivity is also determined by various factors such as education, skills, discipline, work attitude and ethic, motivation, work environment, technology, and various government policies. The high correlation between human capital and productivity through entrepreneurship is due to the entrepreneurial creativity currently owned by the craftsmen that is no longer constrained by some cultural barriers that make it difficult to unleash creativity, which encourages them to increase their productivity. If these craftsmen have human capital and entrepreneurial spirit, their productivity will increase and their organizational goals will be achieved.

Bibliographic references


Rastogi, P. N. (2000). Sustaining enterprise competitiveness—is human capital the answer?