

# The Role Of Social Capital In New Products Development And Business Competitiveness Enhancement

P Eko Prasetyo, Andryan Setyadharma, Nurjannah Rahayu Kistanti

**Abstract** : Human capital and social capital are the main keys in creating new product development in the manufacturing and entrepreneurship industries to drive economic growth and competitiveness. The better the quality of human and social capital, the more variety of new products that can be produced. The purpose of this research is to explain the role of human capital and social capital as the main key to developing new products in driving economic growth and increasing business competitiveness. This study uses exploratory designs and cross-sectional data about engineering and management in the manufacturing and entrepreneurship industries of MSMEs in the provinces of Central Java and DIY in Indonesia. The analytical method used is path analysis in the form of a dual path correlation model. The results show that human capital and social capital both have positive and significant effects in developing new products. In addition, the development of human resources and new products have a stronger influence on economic growth. Meanwhile, social capital and economic growth play a more important role in creating competitiveness. That is, human capital and social capital are the main keys in creating new product development performance, which in turn encourages economic growth and the competitiveness of entrepreneurial businesses in the region.

**Index Terms:** human capital, social capital, new product development, and competitiveness.

## 1 INTRODUCTION

In today's increasingly modern world, the contribution of human capital and social capital is the main capital in the economic development model, along with physical, natural and financial capitals. Human capital and social capital are drivers of entrepreneurship, (Madriz, 2018). Human capital is usually seen as one of the main determinants of competitiveness and economic growth, (Cadil, 2014; Prasetyo, 2019a). Social capital is a modern concept that is economically and socially introduced in studying modern society (Iravani, 2010; Aldaibat, 2017). In the concept of modern economic development, social capital will strengthen human capital in encouraging quality economic growth and business competitiveness (Prasetyo, 2008, 2019a, 2019b). Social capital is identified as an important factor for the development of new products, (Zhang, 2013). Social capital plays an important role in gaining access to entrepreneurship to get high social competence, (Melissa, 2018). Social capital and entrepreneurial social competences are claimed to be important and as the key to success for development and better business success, (Badriyah, 2015; Krebs, 2014; Meutia, 2013). While the theoretical concept of the causal relationship between social capital and social entrepreneurship still requires empirical verification, (Madhooshi, 2015). The recent concept of social capital has increasingly attracted significant attention from various studies in industrial organizations. The role of social capital has been studied from various perspectives on economic performance to the development of human capital, as well as the development of new products, regions and countries (Nahapiet, 1998).

Industrial companies that benefit from these resources can contribute to their own innovations for standardization, commercialization, new products development, market development, and strengthening relationships with customers, (Prasetyo, 2018). From a process perspective, Nahapiet (1998) proposed four dynamic factors that can increase the creation of social capital and also encourage the creation of innovation. Those dynamic factors are stability, closure, interdependence, and interaction. Furthermore, Nahapiet (1998) stated that the development of social capital in companies is a source of competitive advantage, such as to strengthen networks of interpersonal relationships. Novelty in this research, new product development is needed for the survival of entrepreneurship, improving the quality of regional economic growth and the competitive advantage of MSME businesses. The importance of this article is that many studies have discussed the key factors for the success of developing new products. However, not many have discussed the role of human capital and social capital as the key. The results of Ernst's empirical research (2002), have discussed the potential success factors in developing new products with large samples. However, the research study is still limited only from the internal side. Some articles have used analytical steps for the role of social networks that are more loose, but are of a special nature and still ambiguous, (Leenders, 2015). Prasetyo's research results, (2018) state that the level of influenceiveness and response to the development of new products is good and influenceive. But the added value and capability level of new product development are generally still low, and not yet adaptive, so it needs to be further investigated. On the other hand, sustainable competitiveness is a topic that is widely explored. However, sustainable regional competitiveness is still an ambiguous concept, (Januskaite, 2018). The novelty of the purpose of this research is to explain the role of human capital and social capital in an effort to create new product development to encourage regional economic growth and increase business competitiveness.

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## 2 LITERATURE REVIEW

The phenomenon of social capital is one of the most popular concepts that includes economic and sociological dimensions, and is widely used in multidisciplinary research (Bronisz, 2009). Human capital and social capital are usually seen as one of the main determinants of competitiveness and economic growth (Cadil, 2014, Prasetyo, 2019a, 2019b). Social capital is a modern concept that plays an important role in organizations and societies, (Aldaibat, 2017; Iravani, 2010). The social capital plays an important role in the competitiveness of companies (Aldaibat, 2017; Prasetyo, 2019b). Aldaibat (2017) emphasized that social capital can provide Jordanian banks with competitive advantage as a result of access to resources, knowledge and valuable information that are not easily traded. Furthermore, social capital provides value to the business in the form of improved performance, innovation in market opportunities and new product development and enhanced reputation (Aldaibat, 2017). Youndt (2005) used three measures: human, organizational, and social capitals to represent intellectual capital. He found that intellectual capital and the relationship among them selectively affect the radical innovation ability enhancement in developing new products. While according to Chen, et.al (2014) intellectual capital is a classification of three dimensions-human, structural and relational-and their influences are examined in the development of new industrial products. The results of the study found that relational capital is an important factor, followed by structural capital and human capital. They concluded that relational capital mediates the influences of human capital and organization on the transfer of knowledge for the development of industrial products (Chen, et.al, 2014). Another example in developing new products is to use a network of suppliers and customers to facilitate the utilization of knowledge in new products (Zhang, 2013). Amoah's (2012) research results support the important role of qualifying the educational experience of the owners in the development of new industrial products. The higher the level of educational qualifications tend to use a lot of tactics in the development of industrial products. The results of the Ebarefimia research (2014) explained that there are various important and strategic factors in developing new products, namely: personnel skills, management involvement, and organizational culture. The results of the analysis explained that there are positive and significant influences on new product development plans with business strategies, organizational culture and personnel skills on the level of business performance. New Products Development (NPD) is the key to success for the company's sustainability, growth, progress, prosperity and is one of the company's vital competencies (Prasetyo, 2018; Chaochotchuang, 2015; Bhuiyan, 2011; Mu, 2009). The progress of new products and their development is widely recognized as an important source of competitive advantage (Thomas, 1995). Development of new products is one of the key factors for progress and competitive advantage in every country (Silinevica, 2016). According to Silinevica, (2016) in any economy, the development of new products or new services is very important for economic growth and are vectors of welfare development. For any company, which operates in the manufacturing sector, presenting innovation and developing new products or new services is a source of life (Ahmed, 2011). Ahmed's (2011) research results recommended that for any company operating in the manufacturing or service sector,

presenting innovation in products and developing new products or services is very important for sustainable economic growth. It is already known that regions will likely become innovation leaders in implementing more efficient model of developing new products and services for existing products, as well as for enhancing productivity, regional competitiveness and economic growth (Gardiner, 2012). To achieve successful product development as a source of competitive advantage and economic growth, a structured and documented approach to NPD is necessary, as well as having a clear roadmap for NPD, from product concepts to consumers (Owens, 2000).

## 3 METODOLOGY

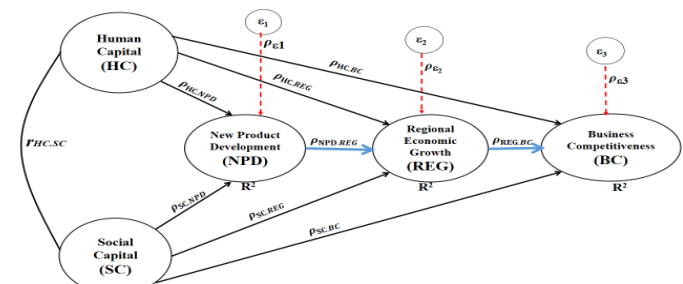
This research was designed using the recursive form-multiple correlation path analysis model. This path analysis is basically a special form of more complex multiple regression analysis. The advantage of using this path analysis model is that it can be used as a form of standard regression and minimize the presence of multicollinearity. In this article, path analysis is used to test the alignment of the correlational matrix in order to determine the direct influence, indirect influence and total influence of a set of exogenous variables simultaneously on endogenous variables. Basically there are three forms of path analysis models namely: (1) Correlated path model, (2) Mediated path model, and (3) Independent path model. In this article a correlated path model is used. Whereas, the recursive form model in this research means that the variables considered only have a one-way causal relationship system, so that the reciprocal causal model is not used in this path analysis. Cross-section data is used for quantitative data in this research. For the purpose of obtaining maximum results, this research used 125 representative samples of entrepreneurial households in the industrial business sectors of creative bamboo, doormat, convection, batik, and foods in Yogyakarta Special Region and Central Java provinces in Indonesia. Furthermore, the form of the model to be reviewed and tested is based on the framework of micro-macroeconomic theory and business economics. The form of structural equation models in this research is organized as follows.

$$NPD = \alpha_0 + \alpha_1 HC + \alpha_2 SC + \varepsilon_1 \dots\dots\dots (1)$$

$$REG = \beta_0 + \beta_1 HC + \beta_2 SC + \beta_3 NPD + \varepsilon_2 \dots\dots\dots (2)$$

$$BC = \tau_0 + \tau_1 HC + \tau_2 SC + \tau_3 REG + \varepsilon_3 \dots\dots\dots (3)$$

Based on the three forms of the path analysis structural equation, the recursive form-multiple correlation path analysis model in this research can be arranged in the form of a path diagram as shown in figure-1.



Figur-1: The recursive form-multiple correlation path analysis research model

In figur-1, it shows that the variables of human and social capitals are exogenous variables. In the form of correlated path models, the correlation between human and social capital are the principal variable being reviewed. Whereas correlations with residues are not analyzed in this article. It is assumed that residuals are not correlated so the variables used have been stated to be relevant in this system. Furthermore, it is assumed that the coefficients of the variables used are expressed in standard form and is a vector equation. Endogenous variables are compiled and determined as liner combinations of exogenous variables. Whereas the causality relationship in this model is used to test the direct indirect, direct and total influences.

#### 4 RESULTS AND DISCUSSION

As a strong theoretical basis for clarity of meaning about the study of innovation in the development of new products in this article, we use Schumpeter's original theoretical basis to describe commercialization as a process between producers and consumers. Where, customer demand can be met from the manufacture of new products or from remanufacturing returned products, (Menner, 2001). The novelty element in this article tends to better illustrate the management of human capital and the behavior patterns of social capital in the manufacturing industry and SME entrepreneurship in following the classic stages of the product life cycle. An important new scientific contribution is to explore the economic consequences and character of the value chain from Porter with higher standards, so that each set of activities carried out can generate added value for manufacturing and entrepreneurial industries to drive regional economic growth and business competitiveness. Human capital is the most important and valuable resource for creating competitive advantages, but merely possessing human capital is insufficient for firms to achieve such advantages, (Ma, 2019). Once engaged in the entrepreneurial process, such individuals should also have superior ability in successfully exploiting opportunities (Davidsson, 2003). According to Davison, (2003), one weakness in the theory is that it essentially takes a black box view of educational production and accumulation activities at equilibrium. Therefore, the novelty in this article includes social capital as a balance factor. The social capital variables were found to be very strong and consistent predictors in the analysis (Davidson, 2003). Based on the results of path analysis research as presented in Table-1, it shows that social capital factors in model-1 and model-3 have a greater influence on the development of new products and competitiveness enhancement of entrepreneurial businesses compared to human capital factors. Whereas the human capital factor in model 2, seems to have a greater influence on regional economic growth enhancement. Based on statistical tests, the influence is positive and significant at the 99%

confidence level or at the real level (1-tail 1%). In model 2, the new products development factor (NPD) is positively and significantly contributes to regional economic growth along with human capital factors at a 99% confidence level. Furthermore, in the model-3 regional economic growth factors positively and significantly can drive business competitiveness to be better at 99% confidence level. The results of this research support previous research results that the development of new products is an important key to success in encouraging corporate growth and security or is an economic growth drive (Prasetyo, 2018; Silinevica, 2016; Chaochotechuang, 2015; Bhuiyan, 2011)

**Table-1:** The results of path analysis regression of structural equation models; 1, 2 and 3

Model	Unstandardized Coefficients		Standardized Coefficients	t-stc	Sig.
	B	Std. Error	Beta		
1 (Constant)	.154	.042		3.640	.000
Human_Capital	.371	.087	.352	4.260	.000
Sosial_Capital	.417	.095	.361	4.373	.000
2 (Constant)	-.027	.030		-.922	.358
Human_Capital	.501	.062	.485	8.040	.000
Sosial_Capital	.193	.068	.171	2.820	.006
New_Product_D	.342	.060	.349	5.661	.000
3 (Constant)	-.010	.027		-.368	.713
Human_Capital	.235	.075	.235	3.132	.002
Sosial_Capital	.344	.067	.314	5.109	.000
RE_Growth	.405	.079	.419	5.155	.000

- a. Dependent Variable: New Product Development  
 b. Dependent Variable: Regional Economic\_Growth  
 c. Dependent Variable: Business\_Competitiveness  
 Source; Primary data (*processed*)

Furthermore, table-2 shows the magnitude structure of the path analysis model by determinant. In table-2, the three models can be declared good and strong because the R2 value is still large and the R\_multiple value is still above 60%. Based on table-2, what is interesting to note is the inclusion of NPD variable in model-2 provides positive and important economic meanings and the analysis model is getting better. The inclusion of NPD factor in addition to encouraging the role enhancement of capacity of human capital factors in encouraging economic growth, also determinantly NPD can increase R2 more significantly. In model 2, the value of R2 (0.717) gives the meaning that the magnitude of influence of human capital, social capital and NPD simultaneously on regional economic growth amounted to 71.7%, and the remaining 28.3% was influenced by other factors outside the model-2.

**Table-2:** The results of the predictor variables determination analysis of on endogenous

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
						F Change	df1	df2		
1	.620 <sup>a</sup>	.384	.374	.209170	.384	38.025	2	122	.000	1.863
2	.846 <sup>b</sup>	.717	.709	.139548	.717	101.940	3	121	.000	2.176
3	.845 <sup>c</sup>	.714	.707	.135676	.714	100.536	3	121	.000	1.660

- a. Predictors: (Constant), Sosial\_Capital, Human\_Capital & Dependent Variable: New\_Product Development  
 b. Predictors: (Constant), New\_Product D, Human\_Capital, Sosial\_Capital & Dependent Variable: RE\_Growth.  
 c. Predictors: (Constant), RE\_Growth, Human\_Capital, Sosial\_Capital, & Dependent Variable: B\_Competitiveness

Source; Primary data (processed)

Meanwhile, in model-3 in Table-1 and Table-2, the inclusion of regional economic growth variables in model-3 is to better encourage entrepreneurial businesses competitiveness. In addition, determinantly, the existence of regional economic growth variables is positively and significantly enhancing its role and correlation with competitiveness. In model 3, what is interesting to observe is the increasing role of social capital in competitiveness enhancement . The problem of regional competitiveness is very important in order to reduce poverty, unemployment and inequality in income distribution in Indonesia, since the increase in competitiveness is an

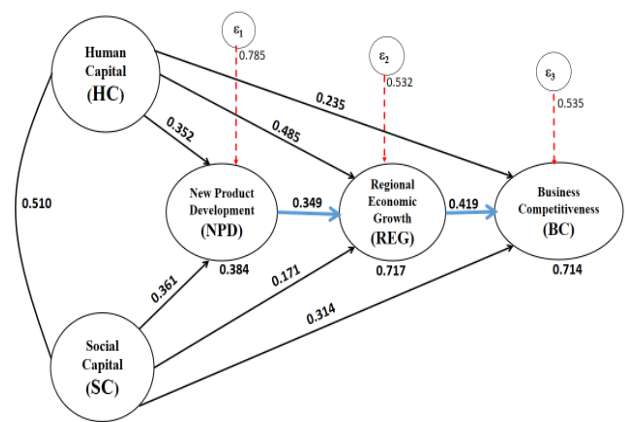
increase in socio-economic cohesion of society. Based on model-1, and model-3, it shows that the role of social capital as socio-economic cohesion has been able to increase the capacity to develop new products and also enhance the competitiveness of entrepreneurial businesses in the region. Thus, the results of this research support previous research conducted by Gardiner, (2012) which stated that enhancing the competitiveness of disadvantaged and less prosperous European regions is considered important for social cohesion, especially in the context of monetary union and EU expansion.

**Table-3:** The results of the partial correlation coefficient of Karl Pearson Product Moment matrix

Model-1:		New_Product Development	Human_Capital	Sosial_Capital	
Pearson	New_Product Devp.	1.000	.536	.541	
Correlation	Human_Capital	.536	1.000	.510	
	Sosial_Capital	.541	.510	1.000	
Model-2:		Economic_Growth	Human_Capital	Sosial_Capital	New_Product Devp
Pearson	Economic_Growth	1.000	.759	.607	.701
Correlation	Human_Capital	.759	1.000	.510	.536
	Sosial_Capital	.607	.510	1.000	.541
	New_Product Devp.	.701	.536	.541	1.000
Model-3:		Competitiveness	Human_Capital	Sosial_Capital	Economic_Growth
Pearson	Competitiveness	1.000	.713	.688	.788
Correlation	Human_Capital	.713	1.000	.510	.759
	Sosial_Capital	.688	.510	1.000	.607
	Economic_Growth	.788	.759	.607	1.000

Source; Primary data (processed)

In table-3, it shows that there is a strong partial correlation between human capital and NPD, human capital and regional economic growth, as well as human capital and business competitiveness. It stresses that human capital is the main and first key factor in new products development, economic growth and business competitiveness enhancements. Meanwhile, social capital factor is the competing factor of human capital in the model. No matter how great any economic improvement carried out by human capital factor will not be able to reduce the problem of inequality and inequality without being supported and equalized by social capital factor. Thus, collaboration between human capital and social capital factors is a very important social-economic factor in improving people's welfare. The argument is in the concept of sustainable economic development social capital factor will further strengthen human capital in promoting quality economic growth and sustainable competitiveness. This argument is also strengthened by the research results on fig-2 and table-4, in addition to tables-1 and table-3 as the basis of this argumentation.



**Figur-2:** The research results of multiple correlation correlated path model diagram

In figur-2, it shows that the vector equation recursive form correlated path shows a very clear one-way correlation. The model of causality relationship form in this model is used to test the direct indirect influence, direct influence and total

influence. Furthermore, based on figur-2 results are obtained as shown in table-4. In table-4, the magnitude of the direct influence, indirect influence and the total influence of each exogenous variable on endogenous variables of business competitiveness is identified. Based on the values in table-4,

the magnitude of the total influence of each exogenous variable on competitiveness endogenous variables respectively is economic growth (39.2%), NPD (29.7%), social capital (17.6%) and human capital (15.3%).

**Table-4:** The value of the total influence of exogenous on endogenous variables

Variables	Standardized Coefficients Regression	Direct Influence	Indirect Influence			Indirect Influence	Total Influence
			HC	SC	NPD		
HC	0.235	0.055		0.038	0.012	0.048	0.098
SC	0.314	0.099	0.038		0.017	0.022	0.077
NPD	0.349	0.122	0.012	0.017		0.146	0.175
REG	0.419	0.176	0.048	0.022	0.146		0.216

Source; Primary data (processed)

Based on figur-2 and table-4, an interesting economic meanings can be explained; to be able to improve the competitiveness of sustainable businesses in the region, it must be supported by quality economic growth. Meanwhile, to be able to achieve quality economic growth, new products from entrepreneurial businesses must be created and developed which are the results of the performance of human capital and social capital factors of the local community. Conversely, if there is no good performance from the human capital and social capital factors of the community, there will never be a development of new products that can drive quality economic growth; as a result, sustainable competitiveness will never be achieved. Thus, the keyword for achieving sustainable competitiveness and quality economic growth is that efforts must be made to create new products from the people's business based on the performance of good human and social capitals.

## 5 CONCLUSION

Human and social capitals are the main keys in creating quality new products development to encourage quality economic growth and sustainable business competitiveness. The main role of human capital is enabling the creation of new products and quality economic growth. Meanwhile, the main role of social capital is to develop new products and increase business competitiveness in a sustainable manner. In the concept of sustainable development economics, this social capital factor is needed to strengthen human capital factor in the creation of new products, encourage quality economic growth and sustainable competitiveness and reduce inequality and gaps. Because, without the role of social capital factor, economic progress is indeed still easily achievable, but it will still cause inequality and gap. This means that social capital factor besides being needed as a driver of new products development and competitiveness is also needed as a counterweight to the results of the community's economic development towards shared prosperity.

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