

Research Article

A Model for the Growth of Rubber Plantation in Banyuasin, South Sumatra, Indonesia

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Abstract.

The paper focuses on the gross domestic regional product of Banyuasin regency. Its promising rubber plantation is the main reason. The paper analyzes the relationship between increased capitals, innovative agility, and contribution to regional economic growth. It applies convenient technique for sampling. Data were analyzed using the SEM-PLS tool. The results showed that increased capitals significantly affect innovative agility, which in turn affects contribution to regional economic income. In this case, innovative agility fully mediates relationship between increased capitals and contribution on regional economic.

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Keywords: innovative agility, regional economy

Published 31 July 2024

Publishing services provided by
Knowledge E

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Selection and Peer-review under the responsibility of the BESS 2023 Conference Committee.

1. Introduction

Banyuasin regency located in South Sumatra, Indonesia plays a critical role on national income and employment resources from rubber plantation. It has rubber plantation as wide as 63.512 hectares, from which 56.655 hectares belong to smallholding (BPS Kabupaten Banyuasin, 2016). Smallholding refers to land for plantation owned by families of local people. With their width, their economic contribution is not negligible. Rubber plantation under smallholding in South Sumatra is the widest, around 27.5% from national width. Under family property, the common characteristics are small land, limited financial capital, technology absence, lack of management because smallholding rubber plantation generally serves as side income.

Their growth is essential, therefore, for national and regional incomes. Indonesian rubber products have attractive international market position. Indonesia has held the biggest rubber exporter until 1957. Malaysia and Thailand have replaced number one exporter in 1957 and 2018 respectively. Indonesia revived only in second position in

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2019. In terms of area width, Indonesia has largest area of rubber plantation in the world, reaching to 3,6 million hectares. Contradict to this, Indonesian rubber productivity is lower than Thailand's. It is related to technology application, plantation method, and land quality.

Since 2017, the competition for rubber market in the world have got tighter. World rubber production exceeds world demand. The oversupply was 13.20 million tons. Beside the challenge for quality that determines access for international market, it destabilizes the price. Both requires change to anticipate unpredictable future market.

Another issue to tackle is land limitation. Rubber plantation under smallholding is run by family. The lands are commonly small without professional treatment and management. It clearly contributes to handicaps to productivity and quality. Some programs to support their viable operations include the Smallholder Rubber Development Project (SRDP), Perkebunan Inti Rakyat / Nucleus Estate Smallholder (PIR/NES), Three Crops Smallholder Development Project (TCSDP) and Project Rehabilitasi dan Perluasan Tanaman Ekspor / Rehabilitation and Enlarge Plantation to Export Project (PRPTE). PIR / NES projects provide rubber production technology to smallholders, and lands consisting of 0.75 hectare for rubber plant production and 0.25 hectare for their housing. They should sell their products to government-owned corporations (Badan Usaha Milik Negara / BUMN).

These interventions, however, have not yet made much change in the rubber production of smallholders in Banyuasin regency. Like SMEs, smallholders should have agility to deal with uncertain future challenge in world latex demand. The agility is related to innovativeness as it is pertinent to local rubber production, plantation system innovation, technology application, and the selling and marketing, and social network development. Before the smallholders has agility to improve their performance, their resources including intellectual capital, social capital and financial capital, should function to the point that they enable to make entrepreneurs adaptable in order to suit themselves to changing demands.

This high adaptability should assure production performance in rubber plantation. Production performance could include land cultivation, seed plantation, distance arrangement, storage, and value addition, from which quality could be maintained and even increased. The quality could be made in line with changing or increasing demands. The alignment between supply and demand in terms of quality and quantity could deserve a leverage. This would assure contribution from rubber income to regional economic income usually called GRDP (gross regional domestic product). This comes

to the thinking that innovative agility is prerequisite to dominant position in international market.

Intellectual capital is an intangible asset with capability to create value for the company (Bontis, 2001). It means that intellectual capital could provide competitive advantage and supports performance. Intellectual capital refers to pools of knowledge, experience, information, skill, and special relationships with consumers that bring up competitive edge in the market (Edvinsson and Malone, 2013). It is source knowledge that can be capitalized any time in need and ability to materialize it (Roos, et. al., 1998).

Social Capital refers to social resource in the forms of relations and networks. It could make objective achievement much easier (Nahapiet and Ghoshal, 1998; Adler and Kwon, 2002). It helps reach key subjective norms or key consumers that affect behaviors (Aldrich and Zimmer, 1986). It could also represent relationships with important social institutions, attachment to cultural norms, or prolonged habits, formed in a long period of time. It could pave the way to reputation that makes competitors hard to emulate.

Financial capital represents financial capability that supports economic operation. It might include personal capital, institutions that ready to provide finance, and existing liquid funds. Financial capital could maintain survival and enable for growth (Cooper et al., 1994). It provides an operation wide choice of action to take, even in the midst of economic distress. It also opens the way to other things to later support the main business.

Agility relates to ability to modify and make necessary changes to follow demands (Raschke & David, 2005). It is about a quick response and adaptation to changing environments (Edvinsson, 2013). The measures are guided by strong focus on future objective that might be disturbed by new trends and threats. Continuous learning and empowerment is important, with involvement of all business components. Integrated movement is all the point. This enables an operation to stay ahead and relevant in any condition.

2. Research Method

The research takes place in Banyuasin' area of smallholding rubber plantation. Some constructs are new including increased capitals and contribution to regional economic income. It would conduct content and face validity tests accordingly. It would also run also Kaiser Meyer Olkin (KMO) test for construct validity. For sample size, specification from Kahle and Malhotra's (1994) that is 10 times of indicators of all variables is usable.

With new constructs and model, SmartPLS for data analysis is suitable (Chin, 2010). It would also take Confirmatory analysis (CFA) and path analysis for validity and reliability of researches instruments (Hair et al. 2011). The sampling unit is rubber smallholder farmer's household in Banyuasin regency which has 17 subdistricts. The present study focuses on three subdistricts covering Rantau Bayur, Muara Telang and Tanjung Lago. They are picked out based on on their distance to Pangkalan Balai, the capital city of Kabupaten Banyuasin. Overall, there are 4,322 smallholders (The office of Rantau Bayur, Muara Telang Subdistricts, and Tanjung Lago 2010).

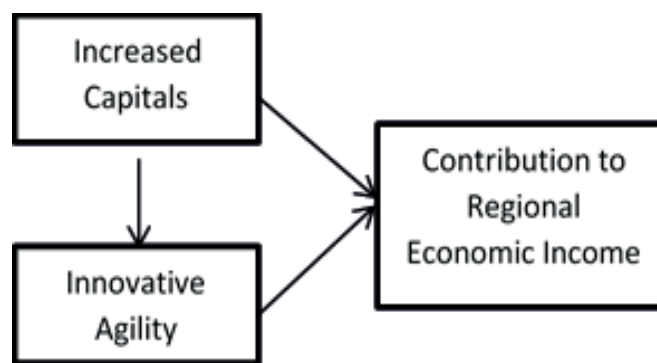


Figure 1: Conceptual Research.

From this background, the paper makes the following hypotheses that H1 increased capitals do not significantly affect contribution to regional economic income. H2-H3 innovative agility significantly mediates the effect of increased capitals on regional economic income.

3. Result and Discussion

Any study with positivist approach concerns with reliability and validity issues before conducting research. For reliability, it applies composite reliability and Cronbach's alphas, indicating that items are free from random error and bring consistent results. Both values should be above 0.70 (Fornell and Larcker, 1981; Nunnally and Bernstein, 1994). Any study with positivist approach concerns with reliability and validity issues before conducting research. For reliability, it applies composite reliability and Cronbach's alphas, indicating that items are free from random error and bring consistent results. Both values should be above 0.70 (Fornell and Larcker, 1981; Nunnally and Bernstein, 1994).

TABLE 1: Reliability and Validity Measures.

	Alpha Cronbach	Composite Reliability	AVE	Convergent validity
Increased capital	>0.70	>0.70	>0.50	>0.70
Innovative Agility	>0.70	>0.70	>0.50	>0.70
Contribution to REI	>0.70	>0.70	>0.50	>0.70

Source: Data processed 2022

With $\beta > 0,01$ and t-stat > 1.99 are indicators for significance. It means that increased capitals has significant effects on innovative agility and contribution to regional economic income. The present study also should find that innovative agility has a significant effect on contribution to regional economic income. It denotes partial mediation of innovative agility on the effect of increased capitals on contribution to regional economic income.

TABLE 2: Hypothesized Effects.

Constructs	Path coefficients	t-stat
Increased capital → Contribution to REI	0,01	>1,99
Innovative Agility → Contribution to REI	0,01	>1,99
Increased capital → Innovative Agility	0,01	>1,99

Source: Data processed 2022

Any economic activity should have its own capitals with different quantities. Their existence is pivotal to support economic activities. Their limited number in hand would serve constraints that limit an operation’s room to move or run a strategy. Capitals-related constraints are common issue faced by small operation or economic activity. While efforts to mitigate the constraints are important by empowering capitals, attention is also critical to materialize the capitals into agility. It is because the capitals per se require capability to capitalize them, as many evidence highlight the fact that the capitals themselves do not represent a warrant for success.

Many big businesses equipped with large capitals find stagnant growth in the midst of increasingly competitive market. On other hand, some small businesses suffered with limited capitals still could find ways to expand and growth. In this case, any aid or program from governments should not only focus on empowerment in the form of strengthened capitals. but also on empowerment in the form of ability to create innovativeness agility. This is especially relevant to rubber plantation smallholders that need to refigure the plantation process, technology applications, marketing and

selling channels, and products and production which value addition consideration might interplay.

While capitals are critical in small businesses, they might not assure increased performance and business success. The most important thing is agility that any business should possess to face unsteady and uncertain circumstance. Today's future is not, and more will be in the future, as predictable and before. Thus, innovative agility should mediate the effect of increased capitals to contribution to regional economic income.

Any farm households or rubber plantation smallholders should orient any capitals they have had and empowered by programs from government to agility capacity enlargement. In the era of disruption, the uncertainty is the certainty. The wave of change does not impinge on technology start-ups, but also plantation companies or smallholders. Due to their small-sized, plantation small-holders have better chance to put in place agility capacity. Especially, innovative agility, that s speediness in finding out solutions and better ways.

4. Conclusions

Any business operation requires capitals to run effectively and efficiently under competition with counterparts. It includes, but not restricted to, intellectual capital, social capital, and financial capital. Many programs from government only focus on empower those capitals, based on the idea that they are enough and necessary for plantation smallholders to grow independently.

These programs and equivalent measures should take into account their potentials to build agility capacity. When it is put in place, the huge possibility is open for future growth. The study sees agility capacity, especially innovative agility representing swiftness to find alternative practice, better way of operations, better solutions, and the likes that describes flexible and responsive culture, would more assure future growth, and greater contribution to regional income accordingly.

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