

# Confirmatory Factor Analysis and the Development of a Supply Chain Management for Creating Sustainable Competitive Advantage of Coffee production in Jember Indonesia

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**Abstract-** Purpose of this research is to investigate the factors contributing to the Sustainable Competitive Advantage (SCA) for the largest coffee producers in Jember, East Java, Indonesia based on the supply chain management. The Method of the research has the element of survey research type one, with the combination of exploratory and confirmatory or explanatory research. This study uses a census method or complete enumeration, which is carried out on all members or elements of the population totaling 84 people. The analysis technique used in this study is the Confirmatory Factor Analysis (CFA) and path analysis. The result shows that the most powerful indicator as innovation measurement is leadership orientation, while the weakest one is the source of external innovation. The strongest indicator of marketing performance variable is the level of customer growth, while the weakest one is the level of sales growth. The strongest indicator as a variable measuring SCA is durability, while the weakest one is the facility of matching strategic assets owned by the company. Innovation has a direct, positive, and significant effect on marketing performance. Innovation has no significant effect on SCA, however,

through marketing performance, the indirect effect of innovation on SCA is significant. Marketing performance has a direct, positive, and significant effect on SCA.

**Keywords-** Sustainable Competitive Advantage, Supply Chain Management, Confirmatory Factor Analysis, Coffee of Jember.

## 1. Introduction

Coffee is a plantation commodity which plays a strategic role in the economy of Indonesia. Indonesia ranks fourth as the world's largest coffee producer and exporter after Brazil, Vietnam, and Colombia. Indonesian coffee production and exports in 2016-2017 each reached 600,000 tons and 400,000 tons with an export value of 1.36 billion US dollars (Table 1). Regarding agricultural commodities, coffee is the fourth largest foreign exchange earner for Indonesia after palm oil, rubber, and cocoa (<https://www.indonesia-investments.com/id/bisnis/komoditas/kopi/item186>).

**Table 1.** Coffee Production and Export of Indonesia

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017*
Production (within 1,000 ton)	698	683	687	634	748	740	712	550	600	675
Export (within 1,000 ton)	491	518	440	354	520	460	383	350	400	
Export (in milliard US dollar)	1.08	0.89	0.86	1.09	1.53	n.a.	1.03	1.19	1.36	

\* showing estimation

Source: Asosiasi Eksportir dan Industri Kopi Indonesia (AEKI)-The Association of Indonesian Coffee Industry and Exporter (2016).

Table 1 shows that Indonesian coffee production from 2012-2016 continued to fluctuate and tended to

decline. In 2012, Indonesian coffee production reached 748,000 tons, declined steadily to 740,000 tons in 2013, 712,000 tons in 2014, 550,000 tons in 2015, and 600,000 tons in 2016. Indonesian coffee exports from 2012-2016 also experienced a decline. In 2012, Indonesia's coffee exports reached 520,000 tons, declining steadily to 460,000 tons in 2013, 383,000 tons in 2014, 350,000 tons in 2015, and 400,000 tons in 2016. The decline in coffee production and exports is expected to continue in 2017. One the cause of the decline in Indonesian coffee production and exports is the decline in the productivity of coffee plantations. In 2013, coffee plantation productivity reached 739 kg/ha, and this year is estimated to only reach 704 kg/ha. This productivity is much lower than the productivity of coffee plantations in Brazil which reaches 1,000 kg/ha/year, Vietnam 1,540 kg/ha/year, and Colombia 1,220 kg/ha/year.

Indonesian coffee production and exports are inseparable from the role of contributors to the production and export of coffee in the region one of the contributors is Jember. Jember is one of the districts located in East Java Province-because of its strategic location, Jember is a barometer of economic growth in East Java. Jember ranks first in the largest coffee producer in East Java-known as Java Coffee Jember. Jember is one of the districts in Indonesia that is famous for its natural wealth in the plantation sector. The most abundant plantation in Jember is coffee [1]. In 2014 Jember Regency owned a coffee plantation area of 6,166 ha with production reaching 1,863 tons. In 2015 and 2016, Jember coffee plantation area increased to 6,377 ha and 6,586 ha respectively, with an average production of 1,877 tons. The increase of Jember coffee plantation area occurs every year, but it is not equal to its increase in terms of production and productivity. The productivity of Jember coffee plantations in 2014-2016 averaged 374 kg/ha. This productivity is much lower than the national coffee plantation productivity reaching 739 kg/ha.

This problem of production and productivity of Jember coffee-Indonesia needs to get attention along with the increasing market demand, both domestic and export one which keeps increasing. The declining and low productivity are accompanied by the contrasting increasing market demand and higher selling prices which open the opportunities to improve marketing performance and SCA of Jember coffee, especially in terms of export market demand.

In addition to the phenomenon of the Indonesian and Jember coffee businesses, this empirical research scrutinizes the existence of a research gap, which later is known as SCA paradox of information system and marketing performance paradox of SCA, which raised problems, namely the unclearness of social contexts of the conception of resources, company behavior, and capabilities, as well as the process of how resources, company behavior, and capabilities explain SCA.

This research will answer the gap of research findings-research gap and the phenomenon of Indonesian and Jember coffee business, and at the same time will fill the lack of literature on SCA, using an invention-oriented approach to build and formulate variable indicators of innovation, marketing performance, and SCA, and will analyze the value of loading factor for each indicator of each of the research variables. In addition to developing CFA with the maximum likelihood estimation (MLE) method to estimate the model parameters, this study will also develop a theoretical model of innovation and marketing performance for the creation of SCA of coffee Jember, Indonesia.

This research is limited to the formulation of measuring indicators of variables of innovation, marketing performance, and the value of the loading factor for each indicator of the research variables. Several other variables, such as market orientation, customer value, organizational learning, networking, and marketing relationships that might help in the process of creating SCA have not been considered in this study. The main basis of this study uses several previous studies conducted abroad, as well as articles and books, as summarized [2] regarding their contribution to the development of SCA.

## 2. Theoretical and empirical review

### 2.1. Innovation

Defines classical innovation, namely the implementation of new ideas, products and processes. It defines innovation as a successful implementation of a creative idea in an organization. Innovation is one of two important things in conducting business, when the group's culture is characterized by more receptivity to new ideas and innovation, it is associated with higher levels of innovation [3].

Innovation by companies can be done in various ways: (1) the company should be able to make the same product, but the production process must be more efficient; (2) companies should be able to make quality products which are more demanded by

consumers; (3) companies should be able to use production factors better and open new markets for their products; (4) companies should be able to open new sources for raw materials that can provide added value from existing production factors; and (5)

companies should be able to increase the effectiveness of existing organizations so that more resources can be utilized [2].

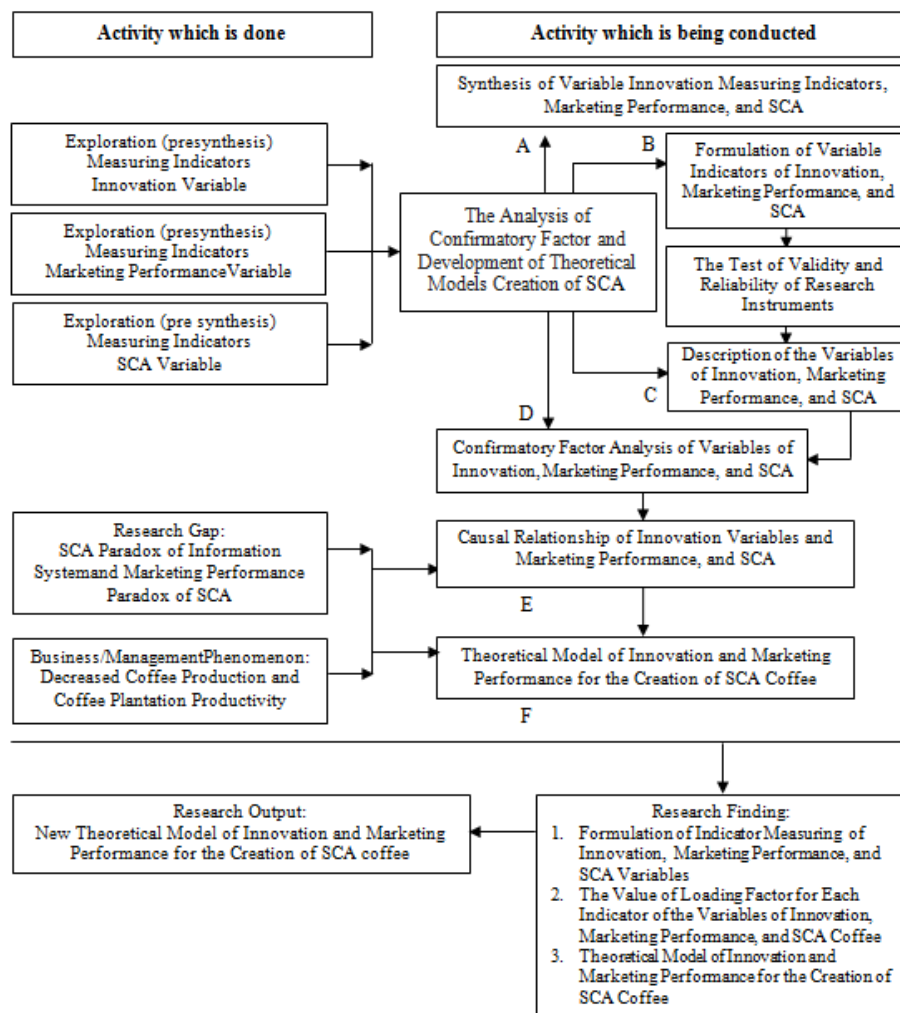


Figure 1. Research Roadmap

Leadership orientation. This dimension will reflect companies as either first to market, second to market, or late entrant. First to market position companies with products and process innovations are usually unique and have a competitive edge. Second to market companies usually monitor innovations introduced by their main competitors, and quickly replicate these innovations. Whereas, late entrant company orientation is to imitate famous brands, products or models with a much cheaper price offer.

Types of innovation. This dimension shows a combination of manufacturing innovations, i.e. the production process carried out and the products produced by the company. Companies can change various combinations of the desired product and process innovations. The company can also use these

two sources altogether to accelerate product and/or process innovation [4]. In conclusion, this study supports the importance of innovation strategy as a determinant of successful company financial performance [5].

There have been several previous studies on innovation, and its effects on marketing performance and SCA, Antecedents and Consequences of Marketing Strategy Making: A Model and a Test [6], argument that the most consistent theme found in the innovation literature relates to the inconsistency of its research results [7]; Under ordinary conditions, the diffusion process for an innovation, even one with considerable relative advantage, requires a lengthy time period [8].

## 2.2. Marketing Performance

Marketing performance as an effort to measure the performance level of a strategy that results from sales volume, sales growth rates, and customer growth rates. primary objectives were to explore possible boundary conditions for a fundamental marketing premise, we wanted to minimize systematic and random noise attributable to industry difference [9]. Measurement of marketing performance needs to be done because the purpose of the business, besides growing the number of customers, must be profitable. Measurement of marketing performance has something to do with satisfaction and expectations. Satisfaction is a subjective measure that is difficult to be measured because each organization has its own assessment. necessary to understand the factors behind firm competitiveness for better economic growth and social welfare [10]. Marketing performance is measured through sales growth and market share. Sales growth shows how much the same product sales increase compared to a certain matter of time. The market share shows how much the contribution of the product handled can dominate similar markets compared to competitors. Good marketing performance shows a high level of sales and an increase in sales, both in product units and in monetary units. The improvements in marketing performance are marked by the achievement of good sales from the previous period or sales volume, higher sales growth than competitors or sales growth, and the company increased market share from the previous period or market share. Marketing performance can be measured from the level of sales growth; sales effectiveness and sales growth rate [11]. One approach would be to use indirect measures of learning, such as patent activity, new product introductions, or sales growth as surrogates [12].

The instrument used to measure marketing performance should be based on activity (activity based measurement) which is directed to be able to produce marketing performance. Conceptual and empirical research generally supports a positive link between customer orientation and firm performance, but a critical step in fully understanding a phenomenon is to establish its boundary conditions and recognize when alternative hypotheses become viable [9].

We agree with the many scholars and executives who have expressed the sentiment that the ability to learn faster than your competitors may be the only sustainable source of competitive advantage [12]. The research challenge is to validate that sentiment and

develop knowledge about the specific management practices and the way they should be configured to provide solid guidance to managers in their efforts to build market-oriented learning organizations. in their research results concluded that consistent improvement in marketing performance is needed for a company to achieve SCA. The desire to create superior value to create SCA will encourage companies to constantly improve their marketing performance.

## 2.3. Sustainable Competitive Advantage

According to the description, it can be proposed that although has successfully discussed the basic types of competitive strategies through cost leadership (low prices) and differentiation, in the discussion, the concept of SCA is not formally defined. Competitive advantage recognition is connected with resources, capabilities and core competencies of the organization [13]. Possibility of the formal definition by offering a statement that a company is said to have SCA when another company is unable to imitate the advantages of the applied strategy. The company is said to have SCA when the company implements a value-creating strategy and competing companies do not continuously implement it.

The sustainability of competitive advantage is also a function of the durability of the capability gap that created the attractive attribute [14]. [2] says the prolonged benefit of implementing some unique value-creating strategy not simultaneously being implemented by any current or potential competitors along with the inability to duplicate the benefits of this strategy. Businesses should note that while emphasizing one aspect of market orientation over another may favor the development of one new product type, it will probably limit the development of another [15].

Competitive advantage is sustainable when other companies are unable to imitate the advantages of the strategy being applied [14]. A company is believed to have an SCA, only after its competitors' efforts to imitate its strategy end because of failure. A firm's culture can be a source of SCA if that culture is valuable, rare, and imperfectly imitable [16]. Many researchers have contributed either directly or indirectly to the literature pertaining to SCA. Table 2 presents an overview of these authors along with their main contributions to the concept of SCA. Specific contributions, including a focus on distinctiveness or differentiation, potential SCA sources, and customer perspectives of SCA are discussed below.

**Table 2.** Summary of Contributions to the Development of the SCA Concept

Author(s) and Date	Article/Book Title	Main Contributions
Alderson <sup>1</sup>	"The Search for Differential Advantage"	The precursor to SCA; proposes three bases for differential advantage: technological, legal, and geographical; four strategies for achieving differential advantage: segmentation, selective appeals, transvection, and differentiation.
Hall <sup>1</sup>	"Survival Strategies in a Hostile Environment"	Successful companies will achieve either the lowest cost or most differentiated position.
Henderson <sup>1</sup>	"The Anatomy of Competition"	Continues discussion of those unique advantages of one firm over competitors; those who can adapt best or fastest gain an advantage over competitors.
Porter	Competitive Advantage: Creating and Sustaining Superior Performance	Introduces the idea of the "value chain" as the basic tool for analyzing the sources of CA.
Coyne [14]	"Sustainable Competitive Advantage: What It Is, What It Isn't"	Explanation of the conditions needed for an SCA to exist; the idea of capability gaps.
Ghemawat	"Sustainable Advantage"	Discussion of those advantages that tend to be sustainable: size in the targeted market, superior access to resources or customers, and restrictions on competitors' options.
Day and Wensley	"Assessing Advantage: A Framework for Diagnosing Competitive Superiority"	Potential sources of advantage are superior skills and superior resources; in assessing ways to achieve SCA, both competitor and customer perspectives should be considered.
Dierickx and Cool	"Asset Stock Accumulation and Sustainability of Competitive Advantage"	Sustainability of a firm's asset position is based on how easily assets can be substituted or imitated.
Hamel and Prahalad	"Strategic Intent"	A firm should not search for an SCA, it should learn how to create new advantages to achieve global leadership.
Prahalad and Hamel	"Core Competence of the Corporation"	SCA results from core competencies; firms should consolidate resources and skills into competencies that allow them to adapt quickly to changing opportunities.
Barney [16]	"Firm Resources and Sustained Competitive Advantage"	Discusses four indicators of the potential of firm resources to generate SCA: value, rareness, inability to be imitated, and imperfect substitution.
Conner	"A Historical Comparison of Resource-Based Theory and Five Schools of Thought within Industrial Organization Economics: Do We Have a New Theory of the Firm?"	With a resource-based view, to achieve above-average returns, a firm product must be distinctive in the eyes of buyers, or the firm selling an identical product in comparison to competitors must have a low-cost position.
Peteraf	"The Cornerstones of Competitive Advantage: A Resource-Based View"	Discusses four conditions which must be met for SCA: superior resources (heterogeneity within an industry), ex-post limits to competition, imperfect resource mobility, and ex-ante limits to competition.
Varadarajan, and Fahy	"Sustainable Competitive Advantage in Service Industries: A Conceptual Model and Research Propositions"	Evaluates SCA in a services marketing context; an SCA exists only if it is recognized by customers.
Hall	"A Framework Linking Intangible Resources and Capabilities to Sustainable Competitive Advantage"	Identifies various intangible resources (including assets and competencies) that allow firms to possess relevant capability differentials which result in SCA

Day and Nedungadi	"Managerial Representations of Competitive Advantage"	A firm's use of strategy and reaction to the environment depends on its orientation (customer-oriented versus competitor-oriented); CA is based on this orientation.
Hunt and Morgan	"The Comparative Advantage Theory of Competition"	Compares neoclassical theory and comparative advantage theory of the firm; comparative advantage in resources can translate into a competitive advantage in the marketplace; offers categorization of resources.
Oliver	"Sustainable Competitive Advantage: Combining Institutional and Resource-Based Views"	Proposes a model of firm heterogeneity which suggests that both resource capital and institutional capital are indispensable to SCA.
Srivastava, Shervani, and Fahey	"Market-Based Assets and Shareholder Value: A Framework for Analysis"	Delineates market-based assets into two primary types: relational and intellectual. Largely intangible, these assets may be leveraged to achieve SCA if they can add unique value for customers.

These articles should be considered precursors to the SCA construct. While SCA was not mentioned specifically, each of these articles stressed the importance of firms possessing some unique or differentiating characteristic over competitors. Source: [2].

The advantage of sustainable competition in this study was measured using an instrument developed Hall, in, namely imitability (the level of difficulty to be replicated), durability (the level of duration can keep competitors), and level of convenience to match strategic assets owned by the company. SCA can result from innovation SCA (in [2]; in [6]; [17]; [7]; [18]).

### 3. Research Method

This research is included in survey research one, and is a combination of exploratory and confirmatory or explanatory research. Explorative research is conducted to obtain in-depth information relating to measuring indicators of variables of innovation, marketing performance, and SCA for Jember coffee-Indonesia. Confirmatory research is carried out to determine the value of loading factor for each indicator of the variables of innovation, marketing performance, and SCA, and test and analyze causal relationships between the variables of the study. The research was intentionally conducted in Jember, East Java with the consideration that Jember ranks as the largest coffee producer in East Java-known as Java Coffee Jember, and at the same time as a strategic contributor to Indonesian coffee production and export.

This study conveys a census method or complete enumeration, which is carried out on all members/elements of the population totaling 84

people (individual interview targets), or in other words this study does not use samples so that sampling techniques are not needed. Types of innovation, sources of innovation, and the level of investment in innovation. Marketing performance is measured using instruments developed sales volume, sales growth rate, and customer growth rates [9].

SCA was measured using an instrument developed, imitability (the level of difficulty to be replicated), durability (the level of duration which can keep competitors away), and the level of ease for matching strategic assets. Primary data collection was carried out through direct interviews with 84 farmers (members of farmer groups) Jember coffee. The questions posed have been arranged systematically and guided using a valid questionnaire (positive correlation coefficient and bigger than 0.30) and reliable (has a Cronbach Alpha value bigger than 0.60). Secondary data comes from data and information held by relevant agencies as well as literature books, journals or various forms of publications as listed in the Bibliography. The analysis technique used in this research is CFA, with the Maximum Likelihood Estimation (MLE) method to estimate the model parameters. Furthermore, analytical techniques used to examine the effect between variables or causal relationships between innovation variables and marketing performance on SCA are path analysis. The systematic flowchart of the research is shown in Figure 1 and Figure 2.

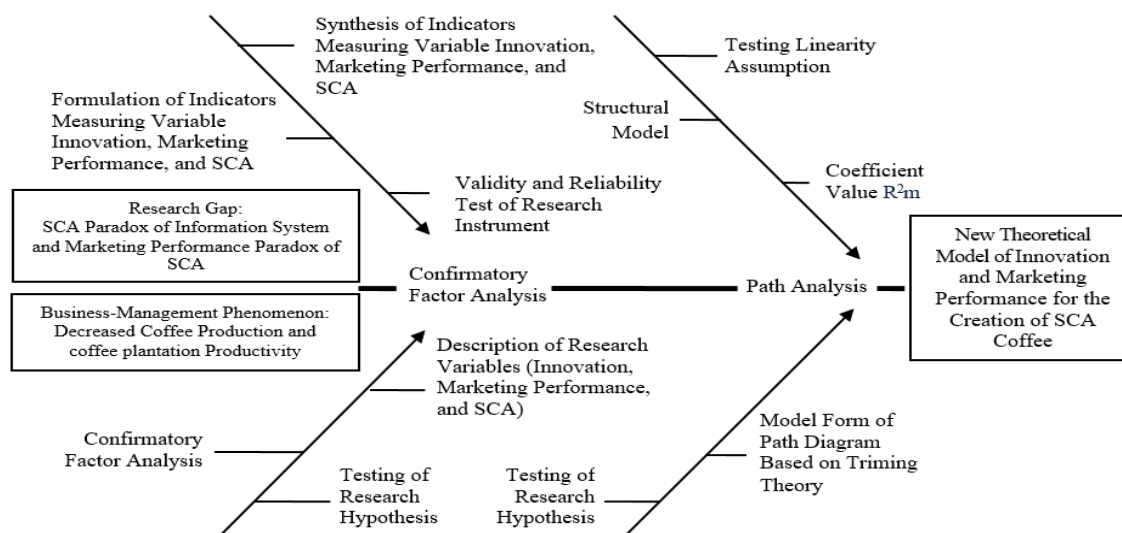


Figure 2. Fishbone Diagram of Research System

Table 3. The Result of Validity and Reliability Test of Research Instruments

Variable	Correlation Coefficient	Cronbach Alpha	Description
Innovation	0.472	0.721	Valid and Reliable
Marketing Performance	0.667	0.635	Valid dan Reliable
SCA	0.789	0.718	Valid and Reliable

#### 4. Analysis of Research and Discussion

##### 4.1. Validity and Reliability of Research Instruments

The results of the validity and reliability of the research instruments are shown in Table 3

The results of the validity and reliability test of the research instrument show that the correlation coefficient for innovation variable equals to 0.472, marketing performance equals to 0.667, and SCA equals to 0.789 which is positive and greater than

0.30. The Cronbach Alpha value for the innovation variable equals to 0.721, marketing performance equals to 0.635, and SCA equals to 0.718 which is greater than 0.60. From the correlation coefficient value and Cronbach Alpha, it can be concluded that the research instrument is valid and reliable.

##### 4.2. Description of Research Variables

The results of descriptive analysis of all research variables (innovation, marketing performance, and SCA) are the scores of each indicator of each of the research variables, as shown in Table 4, 5 and 6.

Table 4. The Results of Descriptive Analysis of Innovation Variable

Indicators	N	Minimum	Maximum	Average
Leadership orientation	84	4.00	4.50	4.45
Process innovation	84	4.00	5.10	4.27
Product innovation	84	4.00	4.57	4.50
External innovation resource	84	4.00	5.10	4.25
Internal innovation resource	84	4.00	5.20	4.60
The level of investment in innovation	84	4.00	4.55	4.55
INNOVATION	84	4.00	4.67	4.43

Table 4 shows that research respondents perceive that innovation is good, with an average score of 4.43. Measuring indicators of innovation variables that are considered the best is a source of internal innovation with an average score of 4.60, while measuring indicators of innovation variables that respond poorly

are sources of external innovation with an average score of 4.25.

**Table 5.** The Results of Descriptive Analysis of Marketing Performance Variable

Indicators	N	Minimum	Maximum	Average
Sales volume	84	4.40	5.00	4.48
Sales growth rate	84	4.20	5.00	4.38
Customer growth rate	84	4.00	5.00	4.55
MARKETING PERFORMANCE	84	4.20	5.00	4.47

Table 5 presents that research respondents perceive marketing performance as good, with an average score of 4.47. Measuring indicator of variable marketing performance that is considered the best is the level of growth of customers with an average

score of 4.55, while the measuring indicator of variable marketing performance that responds poorly is the level of sales growth with an average score of 4.38.

**Table 6.** The Results of Descriptive Analysis of SCA Variable

Indicators	N	Minimum	Maximum	Average
Imitability (the level of difficulty to be replicated)	84	4.00	4.67	4.30
Durability (the length of time can keep competitors away)	84	4.00	5.00	4.22
The level of ease of matching the strategic assets of the company	84	4.00	5.00	4.17
SCA (Sustainable Competitive Advantage)	84	4.00	4.89	4.23

Table 6 demonstrates that research respondents perceive the advantage of sustainable competition as good, with an average score of 4.23. Measuring indicators of variables of SCA that are seen as the best are imitability (the level of difficulty to be replicated) with an average score of 4.30, while the variable measuring indicator of SCA that responds poorly is

the level of convenience to match strategic assets owned company with an average score of 4.17.

#### 4.3. Results of the Confirmatory Factor Analysis

The variables in this study were measured using several indicators, from which to obtain data of each variable factor analysis was used. The following tables show the value of loading factor for each indicator of each research variable.

**Table 7.** Loading Factor of Each Indicator of Innovation Variable

Indicators	Loading Factor
Leadership orientation	0.891
Product innovation	0.840
Process innovation	0.689
The level of investment in innovation	0.771
Internal innovation resource	0.590
External innovation resource	0.433

Table 7 reveals that the most powerful indicator as a measure of the innovation variable is leadership orientation with the value of loading factor is 0.891,

while the weakest indicator as a measure of innovation variable is the source of external innovation with the value of loading factor 0.433.

**Table 8.** Loading Factor of Each Indicator of Marketing Performance Variable

Indicators	Loading Factor
Customer growth rate	0.877
Sales volume	0.851
Sales growth rate	0.719

Table 8 proves that the most powerful indicator as a measure of variable marketing performance is the level of growth of customers with a value of loading

factor equals to 0.877, while the weakest indicator as a measure of variable marketing performance is the



level of sales growth with a value of loading factor which equals to 0.719.

**Table 9.** Loading Factor of Each Indicator of SCA Variable

Indicators	Loading Factor
Durability (the length of time which can keep competitors away)	0.894
Imitability (the level of difficulty to be replicated)	0.892
The level of ease of matching the strategic assets of the company	0.778

Table 9 shows that the most powerful indicator as a variable measuring SCA is durability (the level of duration which can keep competitors away) with the value of loading factor 0.894, while the weakest indicator as a variable measuring SCA is the level of ease of matching strategic assets owned a company with a loading factor of 0.778.

#### 4.4. Path Analysis Results

##### 4.4.1. Assumptions Testing Underlying Path Analysis

The assumptions underlying path analysis are: (1) in the path analysis model, the influence between

variables is linear and additive; (2) only a recursive model (a one-way causal flow system) can be considered, whereas in a model containing reciprocal causal cannot be carried out by path analysis; (3) minimum endogenous variables in interval measuring scale; (4) observed variables measured without errors (valid and reliable measurement instruments); and (5) the analyzed model is specified (identified) correctly based on theory theory and relevant concept concepts. The results of the linearity assumption testing for each influence between variables are shown in Table 10 below.

**Table 10.** The Result of Linearity Assumption Testing

Independent Variables	Dependent Variables	Testing Result ( $\alpha = 0.05$ )	Decision
Innovation	Marketing Performance	Significant Linier Model	Linier
Innovation	SCA	Significant Linier Model	Linier
Marketing Performance	SCA	Significant Linier Model	Linier

Table 10 shows that all forms of influence between variables in the structural model are linear. Thus the assumption of linearity in path analysis is fulfilled. The recursive model assumption (between  $\varepsilon_i$  is independent or independent, between  $\varepsilon_1$  and  $\varepsilon_2$  with exogenous variables independent of each other, and the direction of the causal influence of the endogenous variable is unidirectional) is fulfilled. This also explains that the model assumption is specified (identified) correctly based on theories and relevant concepts have also been fulfilled. The assumption of endogenous variables in the interval

measure scale has been fulfilled. This is based on the convention that input path analysis data is in the form of a factor score resulting from confirmatory factor analysis, where the factor score is a standard normal distribution. Furthermore, the assumptions of observed variables measured without errors (valid and reliable measurement instruments) have also been fulfilled.

##### 4.4.2. Structural Model

The results of direct influence path coefficient testing are shown in Table 11 below.

**Table 11.** The Path Coefficient of Direct Influence

Independent Variables	Dependent Variables	Coefficient Standardize	p	Description
Innovation	Marketing Performance	0.566	0.006	Significant
Innovation	SCA	-0.118	0.488	Insignificant
Marketing Performance	SCA	0.720	0.010	Significant

Table 11 shows that the effect of innovation on marketing performance and marketing performance

on SCA is quite meaningful (with very little false risk, which is close to  $p = 0,000$ ), each with a p-value of

0.006 and 0.010 respectively. Table 11 also shows that marketing performance has a dominant effect on SCA with the path coefficient of the direct influence of 0.720 or the path from marketing performance towards SCA is a more influential path, then the path

from innovation to marketing performance with direct influence path coefficients is 0.566. The results of the indirect pathway influence test testing are shown in Table 12 below.

**Table 12.** The Path Coefficient of Direct Influence

Independent Variables	Intervening Variables	Dependent Variables	Coefficient Standardize	Description
Innovation	Marketing Performance	SCA	0,408 *	Significant

\* 0.566 x 0.720

The path coefficient test results can be expressed in the form of equations (simultaneous equation system). Path analysis in the form of simultaneous equations is shown as follows:

$$\begin{aligned} Z_{MP} &= 0.566 Z_{INOV} \\ Z_{SCA} &= -0.118 Z_{INOV} + 0.720 Z_{MP} \end{aligned}$$

Note:

MP :Marketing Performance

INOV : Innovation

SCA :Sustainable Competitive Advantage

Based on the results of the direct influence pathway testing, this study produces findings that innovation has a significant effect on marketing performance. The findings of this study support the results of previous research conducted [6]. The contribution of the findings of this study is that the innovation in this study has been measured multidimensionally. Another contribution of the findings of this study to the previous theory is that there is a direct and positive influence between innovation and marketing performance, which in the results of previous research from [6]. Based on the results of testing the direct influence path coefficient, this study results in findings that innovation has no significant effect on SCA. However, the results of the path coefficient testing indirect effects of innovation on the advantages of sustainable competition through marketing performance are significant and positive. The findings of this study were that the marketing performance in this study proved to have a mediating role. Despite the results of previous studies from [7]; and [18] show that SCA can result from consistent innovation, this research can show that the impact is influential through mediating marketing performance, or in other words without marketing performance a significant influence between innovation and SCA will not appear. The insignificant influence between innovation and SCA needs further explanation, because the findings of this research are in contrast to expectations. Although innovation plays an important role in the process of

creating SCA, its role is not significant in a stable coffee market. It is caused by innovation is seen as still less profitable than marketing management activities that have a more direct contribution to the creation and development of SCA. To test the hypothesis, this study also tested its effect on marketing performance, and it is found empirical evidence for that. These management activities are more sourced from the implementation of historical marketing strategies (everything is done in the same way for years), but is believed to have superiority, more profitability, and is considered successful in creating SCA. Based on the results of the direct influence pathway testing, this study produces findings that marketing performance has a significant effect on SCA. The findings of this study support the results of previous studies conducted by [12]. The findings of this study as well as an important input for [2], who did not explicitly state that marketing performance is one of the sources. Whereas in this study it is found empirical evidence that marketing performance has a very important role in the process of creating SCA. The contribution of the findings of this study is that the use of marketing performance measurement indicators in this study [9] is valid enough to measure marketing performance, based on activity [19].

#### 4. 5. Model Validity Testing

##### 4.5.1. Total Determination Coefficient ( $R^2_m$ )

The total diversity of data that can be explained by the model is measured using  $R^2_m$  or the Determination Coefficient ( $R^2$ ) = 0.9127, meaning that the diversity of data that can be explained by the model is 91.27%, or the information contained in the data is 91.27% can be explained by the model, while 8.73% is explained by other variables that have not been in the model and errors.

##### 4.5.2. Trimming Theory

Based on the timing theory, non-significant pathways are discarded, so that a model is fully supported by

empirical data. The model in the form of a path diagram based on the timing theory is shown in Figure 3.



**Figure 3.** Path Diagram Based on Training Theory

Figure 3 shows that innovation has a direct, positive, and significant effect on marketing performance, and through marketing performance, innovation also has a significant and positive effect on SCA. Marketing performance also has a direct, positive, and significant effect on SCA. Theoretically the model in the form of a path diagram based on this trimming theory implies that innovation is a fundamental antecedent that plays an important role in improving marketing performance. Marketing performance is also an important instrument for creating SCA.

## 5. Conclusion

The most powerful indicator as a measure of the innovation variable is leadership orientation, while the weakest is the source of external innovation. The most powerful indicator as a measure of variable marketing performance is the level of customer growth, while the weakest is the level of sales growth. The most powerful indicator as a variable measuring SCA is durability (the level of duration which can keep competitors away), while the weakest is the level of ease of matching the strategic assets of the company. Innovation has a direct, positive and significant effect on marketing performance. Theoretically this finding implies that innovation is an important instrument to improve marketing performance. Innovation has no significant effect on SCA, however, through marketing performance, the indirect effect of innovation on SCA is significant. Theoretically this finding implies that the causal relationship between innovation and SCA is complex, and there are still opportunities for further research. Marketing performance has a direct, positive, and significant effect on SCA.

## 6. Suggestions

This study found that innovation has no significant effect on SCA. When the insignificant findings from this study are faced with significant findings from previous studies, this shows that the effect of

innovation on SCA is complex and is still open for further research. Another hypothesis can be put forward in subsequent studies for the finding of insignificant influence between innovation and SCA, which is about companies with high competitive advantages innovate more extensively and sustainably than companies with a low competitive advantage. This study found that innovation has no significant effect on SCA. However, through marketing performance, the influence of innovation on SCA is significant. Based on the findings of this study, it is advisable for coffee businessmen to prioritize the improvement of marketing performance compared to the innovations made.

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