

The Role of Supply Chain Capabilities in Increasing the Competitive Advantage of Photo Catalyst Ceramic MSMEs in Bali



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ABSTRACT: The long-term goal of this research is to develop knowledge in the field of Strategic Management, especially about Collaborative Value Innovation, Supply chain strategy, strategy of competitive advantage in SMEs. This research was conducted at SMES Photo catalyst Ceramics in Bali, with research objects on collaboration value innovation, supply chain capabilities, competitive advantage. The research population is all ceramic SMEs in Bali. This research was conducted at SMES Photo catalyst Ceramics in Bali, with research objects on collaboration value innovation, supply chain capabilities, competitive advantage. The research population is all ceramic SMEs in Bali. The results of this study indicate that Collaboration of the value of innovation has no significant negative effect on competitive advantage. This indicates that there is no relationship between photo catalyst ceramic SMEs to produce an innovation, so this also provides a negative value in creating competitive advantage between business actors. Collaboration of innovation values provides positive value to supply chain capabilities, collaboration provides great opportunities in sharing information related to resources to support the development of photo catalyst ceramics. The ability of the supply chain to provide significant positive results for competitive advantage, with the capabilities of good information actors from raw materials to ceramic products will certainly provide great opportunities in achieving competitive advantage; this also shows that the mediation of supply chain capabilities becomes full mediation in relationships, collaboration value innovation and competitive advantage.

KEYWORDS: Innovation, Collaborative Value, Supply Chain, Competitive Advantage, Photo catalyst Ceramics.

1. BACKGROUND OF THE PROBLEM

SMEs are productive business units that stand alone, which are carried out by individuals or business entities in all economic sectors. In principle, the distinction between Micro Enterprises (UMI), Small Enterprises (UK), Medium Enterprises (UM), and Large Enterprises (UB) is generally based on initial asset value (excluding land and buildings), average annual turnover, or the number of permanent workers. However, the definition of SMEs based on these three measurement tools differs by country. Because of this, it is indeed difficult to compare the importance or role of SMEs between countries. Some of the advantages of SMEs over large businesses include the following: a) innovation in technology that occurs easily in product development; b) Friendly human relations within small companies; c) the ability to create quite a lot of job opportunities or their absorption of labor; d) flexibility and ability to adapt to rapidly changing market conditions compared to; e) large companies which are generally bureaucratic; f) there is managerial dynamism and entrepreneurial role.

SMEs have several potential strengths which are a mainstay that will become the basis for future development, namely the provision of fields The role of small industry in absorbing labor is to be reckoned with, estimated or absorbing up to 50% of the available workforce, and has a unique market business segment, carries out simple and flexible management of market changes. Weaknesses that often become inhibiting factors and problems are the limited ability of human resources, constraints on product marketing; most Small Industry entrepreneurs prioritize production aspects, while marketing functions are less able to access them, especially in providing value to products and market networks. Which creates advantages; so that most of them only function as builders, and constraints on business capital, most small industries use relatively small amounts of their own capital.

The meaning of working together or collaboration in this case is to be cooperation in achieving a common goal. The close relationship can be interpreted as a recursive process, with the meaning in saying that two or more people work together to achieve a common goal. In more detail it is said that, companies that work collaboratively can get greater resources, recognition, and rewards when facing competition for limited resources. Creating value for a product is an identification of collaboration. In an era that is moving towards technological developments, there is a need for companies to look outside the organization, namely opportunities to

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collaborate with partners to ensure that the supply chain is efficient and responsive to dynamic market needs. SME actors try to achieve greater value innovation by collaborating (Consti- Laakso et al., 2012)

Collaborative partner relationships help SMEs increase their competitive advantage (Velter et al., 2021), managing knowledge flows (Manville et al., 2019), sharing information (Radziwon and Bogers, 2019), managing inventory levels (Ahmadi et al., 20), aligning the supply chain (Chi et al., 2020), manage risk (Gölgeci & Kuivalainen, 2020), and improve SME performance (Zaridis et al., 2021). Supply chain collaboration clearly has great potential, but further investigation is needed to recognize its value (Han and Trimi, 2022). For example, supply chain collaboration value innovation is an important issue in supply chain management (Hong et al., 2019). Supply chain collaboration provides access to new knowledge (Freije et al., 2022) because companies can learn and innovate with organizations (Haiyun et al., 2021).

The benefits of supply chain collaboration value innovation: the establishment of collaborative relationships with external parties (for example, through access to multiple sources of information) determines the degree of novelty of an innovation (Krishnan et al., 2021). (Cillo et al., 2019) then claims that a company's ability to develop radically innovative business concepts that impact and even create business value requires not only model different internal learning but also different external perspectives of collaboration and partnerships. Likewise, the benefits of sharing information with others may differ across different stages of the innovation process (Distanont & Khongmalai, 2020). In this respect, we can assume that the information that supply chain members can exchange spontaneously through their normal daily collaborative relationships can serve as a platform for developing deeper insights about the type of supply chain that innovation requires. In other words, the amount of information provided by the supply chain through collaborative relationships can be summed up by increasing the effectiveness of supply chain capabilities.

Supply chain capability refers to an organization's ability to identify, use, and assimilate both internal and external resources and information to facilitate overall supply chain activities (Daddi et al., 2021) Previous studies have categorized supply chain capabilities into capabilities related to efficiency and efficacy (Azeem, 2022). Efficiency-related capabilities allow organizations to achieve logistics performance at lower costs (Irfan et al., 2019), while efficacy-related capabilities enable organizations to maintain relationships with both supply chain partners and better respond to consumer needs (Azeem, 2022). Supply chain capabilities can increase partners' competitive advantage by integrating key business processes from end users through suppliers and vendors and thereby improve business performance (Zhu et al., 2020).

Competitive advantage provides a valuable theoretical foundation for investigating the ways in which supply chain collaboration value innovation can support supply chain capabilities to achieve competitive advantage. This view is rooted in a resource-based perspective (RBV) (Wright et al., 1994). The company's resources provide it with unique capabilities that enable it to manage change and identify new opportunities (Kindström et al., 2013). In particular, the RBV argues that resources are distributed heterogeneously among firms and advantages arise when resources are used to cultivate competencies that are rare, valuable, inimitable and irreplaceable (Ismail et al., 2019). This theoretical perspective suggests that critical resources often span strict boundaries and may thus be embedded in interfere routines and processes.

It has shifted the focus of competitive advantage from one organization to inter-organizational resources, thereby shifting from one organization to the entire supply chain network (Zhu et al., 2020). In addition, the main argument of the ability-based theory of competitive advantage is that a company's conscious and systematic actions can create special capabilities, which enable a company to gain a competitive advantage (Mikalef et al., 2020). Resources are often valuable because they are bundled and used in combination with other resources (Barney, 2018). Supply chain collaboration also allows firms to focus on their unique core activities, which enhances firm-specific skills and realizes economies of scale and learning effects, thereby enhancing their competitive position (Lee and Wilhelm, 2010; Cao and Zhang, 2011).

This research is to investigate whether collaborative value innovation, and supply chain capabilities can increase competitive advantage, and implement measurement variables to investigate deep relationships in the Photo catalyst Ceramic SME sector in Bali.

2. LITERATURE

2.1 State of the art

This research refers to the theory Resources Based View (RBV) states that resources capable of producing long-term competitive advantage are strategic resources. According to this theory, human resources are a potential resource that can be used as capital to gain competitive advantage. Employee knowledge, abilities, capacities, skills and innovative abilities constitute human resources. Based on empirical evidence of a culture of innovation determined by social capital, and even Setini's networking abilities et al.(2020) found that social capital has an important role in every activity carried out, especially towards transformation innovation adoption. The network that is owned will not produce anything meaningful when it is not balanced with the individual abilities of the human resources themselves (Setini et al., 2020). It should be noted again that the network that is owned is able to provide positive

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encouragement and can be a negative trigger if it is not matched by HR capabilities. So it is important to re-examine using supply chain capabilities, meaning the ability of human resources in networks to utilize existing resources. Normal and Setini's findings (2022) absorptive capacity has a positive influence on competitive advantage.

Enterprise value creation is transformed through innovation, of course by promoting constant product innovation, service process improvement, and the entire supply chain value can companies maintain sustainable competitive advantage and sustainable business, and thereby create business value (Xu and Wang, 2018). Collaboration is a significant process that leads to value creation opportunities in SCM (Shen et al., 2021) Therefore, (Reklit et al., 2021) proposed a collaborative supply chain better able to deliver products of prime quality on time. (Zhang et al., 2020) also argues that collaboration enables value creation in supply chain activities but collaboration still cannot create a competitive advantage that differs from (Ali Shorideh et al., 2022).

This research is different from previous studies, namely adding supply chain capabilities in utilizing internal and external resources. Demand-driven value-adding capabilities meet customer demands for special products or customized services, designed to create added customer value and to maximize customer satisfaction and continuous improvement. Previous research has only focused on innovation with utilize the individual capabilities of SMEs but not emphasizing the innovation capabilities of their supply chain network. This research continues to use supply chain capabilities to encourage collaborative value innovation to increase the competitiveness of photo catalyst ceramic SMEs that have never been studied before.

2.2 Theoretical Basis

2.2.1 Collaborative Value of Innovation

Hargreaves (2019), proposes that organizations must have the same collaboration goals and that relationships must involve joint activities over a long period of time. Ali Shorideh et al. (2022) suggested that a higher degree of supply chain collaboration leads to higher business partner independence. Many organizations may have considered and pursued external collaboration, but it has often been detrimental to their efforts to promote internal collaboration. Collaborative SCM goes beyond simply exchanging and integrating information between suppliers and their customers as it involves joint tactical decision-making among partners in the areas of collaborative planning, forecasting, distribution and product design (Rejeb et al., 2021). Jawaad and Zafar (2020) found that members of the supply chain who had higher levels of collaborative practices were able to achieve better operational performance and innovation activities. Supply chain collaboration involves the participation of all supply chain partners actively collaborating towards a common goal. (Zhang et al., 2020) also argued that collaboration enables value creation in supply chain activities. Boccocelli et al. (2020) propose that companies change their value creation by embedding operand resources into objects, by changing resource integrators, and configure reset value constellations.

2.2.2 Supply chain capabilities

Organizations seek competitive capabilities that enable them to exceed customer expectations and improve market and financial performance. According to Barney (1991), capability means that a company needs to be managed and regulated in such a way that it can utilize all of its potential resources. The emergence of global operations, scientific and technological advances have changed the industrial environment rapidly has shortened the product life cycle. Thus, supply chain capabilities are becoming increasingly vital. Iyer et al. (2019) stated that, "supply chain capabilities are the building blocks for supply chain strategy and a source of competitive advantage for company success". Sabir (2019) shows that different abilities support different value disciplines. The first discipline is demand-oriented logistics capability, and the second value discipline is supply-oriented logistics capability.

Wang et al. (2021) divide supply chain capabilities into supply-driven process capabilities, and demand-driven value-added capabilities. Supply-driven process capabilities use simplified and standardized supply chain business processes to analyze distribution extensively or intensively to create more efficient ways of delivering products and services, and to reduce total distribution costs (Srivastava et al., 1999). Supply chain capabilities can be divided into five simple categories: supply chain process capability, product/service standardization and unification, product and service quality improvement, maintaining customer and partner relationships, and customer and partner capacity to solve problems (Liao & Kuo, 2014).

2.2.3 Competitive Advantage

Competitive advantage is the extent to which an organization is able to create a position that can be defended against its competitors (Munizu, 2013). To maximize competitive advantage, all members in the supply chain must work together seamlessly to serve the end consumer (Mason-Jones and Towill, 1997). Pananand et al. (2020) show that the way a company is connected to other companies in its value chain can influence competitive advantage, especially when external corporate assets are created that are distinguishable from the rest of the value chain.

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2.3 Results of Previous Research

Dev et al. (2020) presented a supply chain collaboration framework in a virtual environment, the model classifies partner roles, identifies key capabilities for constructing each role collaborative relationships, and evaluates partners' readiness to collaborate. Singh et al. (2020) found market-oriented supply chain collaboration to be significantly related to operant resource investment and resource integration, which was significantly related to shared value creation and innovation, embedding operant resources, and resource integration. Zaborek & Mazur (2019). emphasizes that collaboration is in a chain an important supply for innovation as partners realize the benefits of innovation such as high quality, lower costs, more on-time delivery, and more efficient operations and effective coordination of all activities. Devet al.(2020) emphasizes the importance of innovation in channel integration between supply chain partners collaborating together to create new customer value. Thus, performance drivers and supply chain capabilities can be implemented from a strategically oriented perspective. The current study concludes that supply chain collaboration value innovation affects supply chain capabilities, leading to improved supply chain capabilities. Also, Kristinaeet al. (2020) find that competitive success depends more on the strength of supply chain collaboration than any company's ability to create value innovation.

Collaborating companies share responsibilities and benefits by building a level of cooperation with their upstream and downstream partners to create a competitive advantage (Kristinaeet al. (2020). Chain collaboration is often defined as two or more chain members working together to create competitive advantage through sharing information, making joint decisions, and sharing benefits resulting from greater profitability from satisfying final customer needs rather than acting alone (Mofokeng & Chinomona (2019) , Rashidet al. (2021) say enterprise collaboration improves flexibility, delivery times, product quality, and other non-financial indicators. Nguyen et al. (2019) define social factors of supply chain collaboration such as interaction, trust, and technological factors, such as information technology capabilities and information sharing, which influence collaborative supply chain value innovation. Kristinae et al. (2020) argued that the value of innovation in supply chain collaboration is a resource that enhances business performance and capabilities. This study concludes that supply chain collaboration value innovation influences competitive advantage through supply chain capabilities. Based on the research objectives and literature review, a research conceptual framework can be developed as presented in Figure 1.

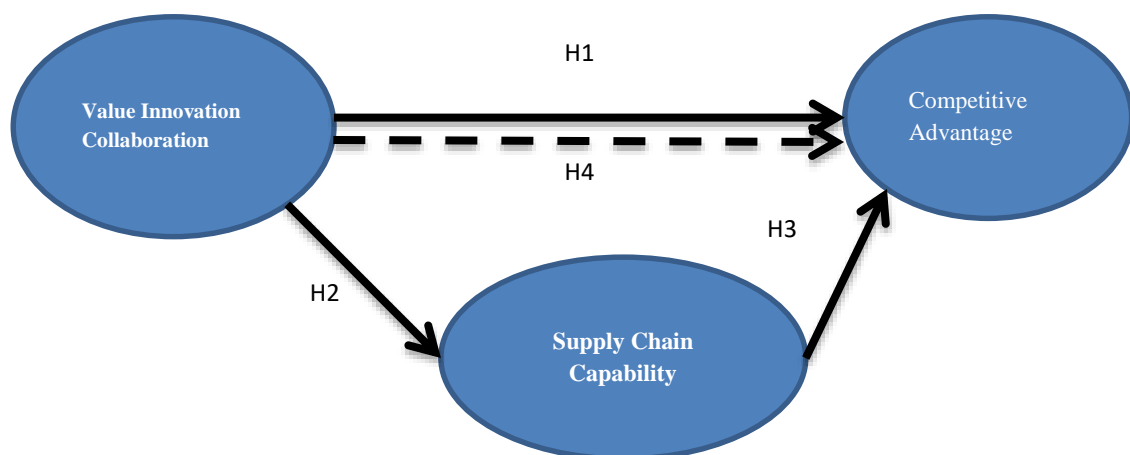


Figure 3.1 Research Concept Frameworks

3. RESEARCH METHODS

This study uses a quantitative type survey method. This research was conducted at SMES Photo catalyst Ceramics in Bali, with a research object about collaboration value innovation, supply chain capabilities, competitive advantage. The research population is all ceramic SMEs in Bali. The research location is ceramic SMEs in Bali. While the object of research is ceramic actors who produce photocatalyst ceramics with value innovation resulting from collaboration. Total population is 300 SMEs with the number of samples calculated using the formula Hair et al. (2014), namely the indicators of each variable are multiplied by 5 or 10, so that the number of 15 indicators multiplied by 5 produces 75, and 15 indicators multiplied by 10 produces 150 so that the appropriate sample is used between 75 to 150, and in this study used 80 samples as feasibility with the SmartPLS processing tool. Sampling technique using non-probability purposive judgment sampling, where sample is restricted at owner level.

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4. RESULTS AND DISCUSSION

4.1 Characteristics Respondents

The characteristics of the respondents in various criteria can be seen in Table 1.

Table.1 Characteristics of Respondents

No	Characteristics	Classification	Number of (people)	Amount (%)
		25 Years	18	22.5
		26 -34	25	31.25
		35-41	20	25
		42-48	12	15
		>49	5	6.25
	Amount		80	100
2	Length of Business	<=1 Years	10	12.5
		1 -4 Years	20	25.0
		5-8 Years	45	56.3
		> 8 Years	5	6.3
	Amount		80	100
3	Education	SMP	16	20
		SMA	48	60
		D1-D3	12	15
		S1	4	5
	Amount		80	100
4	Income	<50.000.000	15	18.75
		60.000.000 – 100.000.000	20	25
		100.000.000-150.000.000	30	37.5
		>150.000.000	15	18.75
	Amount		80	100
	Amount		80	100

4.2 Evaluation of the Measurement Model (Measurement Model/Outer Model)

In connection with the indicators that make up the latent variables in this study are reflexive, the evaluation of the measurement model (measurement model/outer model), to measure the validity and reliability of these indicators are a)convergent validity, b) discriminant validity, and c)composite reliability and cronbach alpha. The measurement model is used because of the indicators that make up the variables let's go this research is reflexive.

Convergent Validity

Convergent validity is a criterion in measuring the validity of indicators that are reflexive. This evaluation is carried out by examining the coefficients outer loading each indicator to its latent variable. An indicator is said to be valid, if the coefficient outer loading between 0.60 - 0.70 and significant at the level alpha 0.05 t-statistics 1.96. (Ghozali, 2021). Mark outer loading each indicator against variable the latency can be seen in Table 2.

Table 2.MarkOuter Loading Estimation Results before Execution

Indicator	Value Innovation Collaboration	Supply Chain Capability	Competitive advantage
X1	0.857		
X2	0.837		
X3	0.826		
X4	0.862		
Y1.1		0.685	
Y1.2		0.855	
Y1.3		0.836	
Y1.4		0.864	

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Y1.5		0.906	0.902
Y2.1			0.863
Y2.2			0.917
Y2.3			0.900
Y2.4			0.902
Y2.5			

Source: Data processed, 2023

Calculation results regarding value outer loading in Table 2 shows all indicators that meet the valid requirements based on criteria discriminant validity i.e. outer loading value > 0.60 - 0.70.

Discriminant Validity

Measuring the validity of the indicators that make up the latent variables, can also be done through discriminant validity. Discriminant validity can be done by comparing coefficient Will AVE (VAVE or Square root Average Variance Extracted) each variable with value correlation between variables in the model. A variable is said to be valid, if the value that forms a construct is higher than the value cross loadings and each value construct AVE greater than 0.50 seen on Table 3.

Table 3. Discriminant Validity Test

Indicator	Supply chain capabilities	Competitive advantage	Value Innovation Collaboration
Y11	0.585		
Y12	0.844		
Y13	0.836		
Y14	0.864		
Y15	0.906		
Y21		0.902	
Y22		0.863	
Y23		0.917	
Y24		0.900	
Y25		0.902	
X1			0.857
X2			0.837
X3			0.826
X4			0.862

Source: Data processed in 2023

Table 4. AVE value

Dimensions	Average Variance Extracted(AVE)
Supply Chain Capability	0.665
Competitive Advantage	0.804
Value Innovation Collaboration	0.715

Table 4. Shows that value loading all constructs are higher than the Cross loading value and the AVE value is greater than 0.5 so that they meet the valid requirements based on the criteria discriminant validity.

Composite Reliability and Cronbach Alpha

A measurement can be said to be reliable, when composite reliability and cronbach alpha has a value greater than 0.60 - 0.70. Composite reliability and Cronbach alpha is a measure of reliability between blocks of indicators in the research model.

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Table 5. Test Composite Reliability and Cronbach Alpha

Dimensions	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Supply Chain Capability	0.867	0.907	0.765
Competitive Advantage	0.939	0.954	0.804
Value Innovation Collaboration	0.871	0.909	0.715

Source; Processed Data, 2023

Table 5. Shows that value composite reliability and Cronbach Alpha each construct has shown a value greater than 0.70 so that it meets the requirements of being reliable based on the criteria composite reliability.

Evaluation Model Structural (Structural Model/Inner Model)

Evaluation of the structural model (Structural Model/Inner Model) is a measurement to evaluate the level of accuracy of the model in the overall research, which is formed through several variables along with their indicators. The evaluation of this structural model will be carried out through several approaches including: a) R-Square (R^2), b) Q-Square Predictive Relevance (Q^2), and c) Goodness of Fit (GoF).

Evaluation Models Structural Square (R^2)

R-Square (R^2) can show the strength and weakness of the influence caused by the dependent variable independent variable. R-Square (R^2) can also show the strength and weakness of a research model. According to Chin (Lathan and Ghazali, 2012:85), value R-Square (R^2) of 0.67 is classified as a strong model, R-Square (R^2) of 0.33 moderate model, and R-Square (R^2) of 0.19 belong to models the weak.

Table 6. Structural Model Evaluation on Inner

	R Square	R Square Adjusted
Supply Chain Capability	0.784	0.798
Competitive Advantage	0.844	0.840

Source: Processed data, 2023

Table 6. Shows that the value of R^2 Competitive Advantage 0.840 based on Chin's criteria (Ghozali, 2021), then this model includes the criteria for a strong model, the meaning is a variation of X and Y1 of 84.0% against the competitive advantage of SMEs in Photo catalyst Ceramics.

Structural Model Evaluation through Goodness of Fit (GoF)

Goodness of Fit (GoF) is a measure of the accuracy of the overall (global) model, because it is considered a single measure of measurement outer model and measurements inner model. Measurement value based on Goodness of Fit (GoF) own value range between 0 (zero) to 1 (one). Mark Goodness of Fit (GoF) which is getting closer to 0 (zero), indicating the model is getting less good, conversely getting away from 0 (zero) and getting closer to 1 (one), then the model is getting better. The criteria for the strength and weakness of the model are based on measurements Goodness of Fit (GoF) according to Lathan and Ghazali (2012:88), are as follows: 0.36 (GoF wide), 0.25 (GoF medium), and 0.10 (GoF small) (Tenenhaus et al., 2004: 175). The Goodness of Fit (GoF) index is used to evaluate the structural model and is an overall measure that can be calculated by taking the root of the average AVE multiplied by the average R^2 .

$$\text{Average } R^2 = (0.307 + 0.844) : 2 = 0.5755$$

$$\text{Average AVE} = 0.665 + 0.804 + 0.715 : 3 = 1.707$$

$$\text{Average root AVE} = 1.707 = 1.306$$

$$\text{So GoF} = 0.5755 \times 1.306 = 0.751 \text{ (high)}$$

Calculation with GoF shows the average value R^2 As big as 0.5755 while the Communality average is 1.707, then the value of GoF = 0.751 means that the global model is a good predictor.

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4.1. Discussion

Testing the hypothesis in this study will be carried out in 2 (two) steps, namely testing the direct effect and testing the indirect effect of exogenous variables on endogenous variables. The direct effect is the effect of an exogenous variable on endogenous variables that occurs without going through other endogenous variables, while the indirect effect is the influence of an exogenous variable on endogenous variables, which occurs through other endogenous variables in a model casual being analyzed. The expected hypothesis testing is that H_0 is rejected for a sig value < 0.05 (or a t statistic > 1.96 with a significant level of 0.05). Hypothesis testing consists of four (4) hypotheses namely innovation value collaboration has a positive and significant effect on the competitive advantage of SMEs Photo catalyst ceramics in Bali, collaborative value innovation has a positive and significant effect on the ability of the MSME supply chain Ceramics Photo catalyst in Bali, supply chain capability has a positive and significant effect on the competitive advantage of ceramic SMEs Photo catalyst in Bali, supply chain capabilities mediate the effect of collaborative value innovation on the competitive advantage of Photo catalyst Ceramic SMEs in Bali. Each - each research hypothesis is evaluated in detail based on the results of testing and research that is processed with software SmartPLS 3.0 The expected hypothesis testing is that H_0 is rejected or a sig value < 0.05 (or a statistical t value > 1.96 with a significant level of 0.05). Results Analysis shown in Table 7.

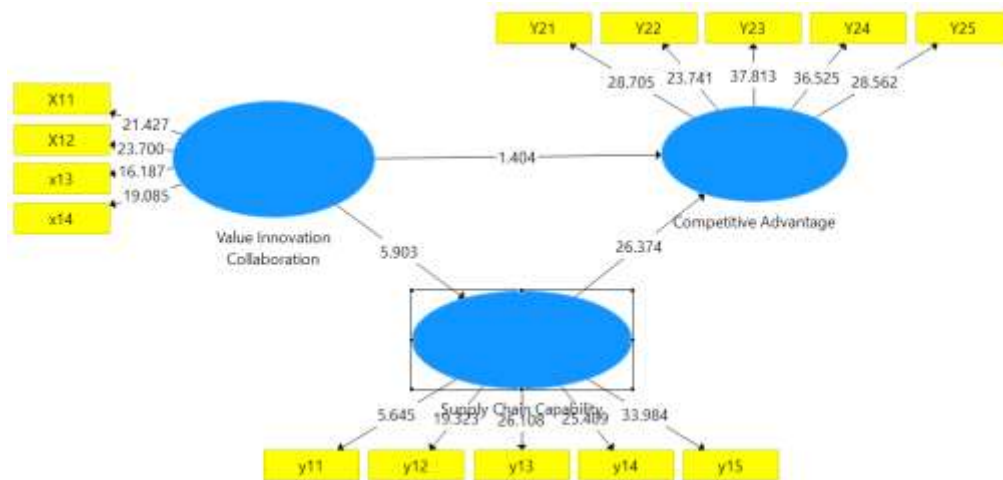


Figure 2. Structural Model of Estimation Results

Table. Path Statistical Analysis and Testing

Based on the results of data processing shown in Table 7, the discussion of research results

Direct Relationship Hypothesis						
	Original sample	Sample Means	Standard Deviation	T-Statistic	P-Value	Description
H1: Collaborative Value of Innovation → Competitive Advantage	-0.069	-0.065	0.053	1.301	0.194	Not Significant
H2: Collaboration Value Innovation → Supply Chain Capability	0.554	0.558	0.090	6.125	0.000	Significant
H3 Supply Chain Capability → Competitive Advantage	0.955	0.954	0.038	25.179	0.000	Significant
Indirect Relationship Hypothesis						
H4: Collaboration Value Innovation → Supply Chain Capability → Competitive Advantage	0.529	0.534	0.095	5.579	0.000	Full Medition

1) The Effect of Innovation Value Collaboration on the Competitive Advantage of Photo catalyst Ceramics SMEs in Bali

Providing that information innovation value collaboration shows a negative and insignificant effect on competitive advantage, where the path coefficient shown is -0.069 with a t-statistic of 1.301 < 1.96 . The results of this test show that Hypothesis 1 (H1) is rejected. This states that collaboration in the value of innovation is not able to encourage competitive advantage for SMEs of Photo catalyst

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Ceramics in Bali. The results of this study are not in line with previous research conducted by Alshurideh et al. (2022) which states that a higher level of supply chain collaboration leads to higher business partner independence. Research conducted (Zhanget al., 2020) Supply chain collaboration involves the participation of all supply chain partners actively collaborating towards a common goal, while research results (Rejebet al., 2021), collaborative value innovation goes beyond simply exchanging and integrating information between suppliers and their customers as it involves joint tactical decision-making among partners in the areas of collaborative planning, forecasting, distribution, and product design.

2) The Effect of Innovation Value Collaboration on the Capability of the Ceramic MSME Supply Chain Photo catalyst in Bali.

Provides information that collaboration value innovation shows a positive and significant effect on supply chain capabilities, where the path coefficient shown is 0.554 with a t-statistic of 6.125 > 1.96. The results of this test indicate that Hypothesis 2 (H2) is accepted. It is stated that the higher innovation value collaboration thus increasing supply chain capabilities. The results of this study are in line with previous research conducted by Devet al.(2020), presented a supply chain collaboration framework in a virtual environment, that model classifies partner roles, identifies key capabilities for constructing each role collaborative relationships, and evaluates partners' readiness to collaborate. Likewise with research Iyer's et al. (2019), Sabir (2019) suggests that a higher level of supply chain collaboration leads to a higher chain of business partner independence capabilities.

3) The Effect of Supply Chain Capability on the Competitive Advantage of Photo catalyst Ceramics SMEs in Bali

Provide information on supply chain capabilities on the competitive advantage of SMEs in Photo catalyst ceramics in Bali, where the indicated path coefficient is 0.955 with a t-statistic of 25.179 > 1.96. The results of this test indicate that Hypothesis 3 (H3) is accepted. This states that supply chain capabilities are able to increase the competitive advantage of SMEs in Photo catalyst ceramics in Bali. Supported by research Zaborek & Mazur (2019), emphasizing the importance of innovation in channel integration between supply chain partners collaborating together to create new customer value. Likewise with Kristinae's researcher al. (2020), find that competitive success depends more on the strength of supply chain collaboration than any company's ability in terms of value innovation creation.

4) The Effect of Supply Chain Capability moderates the influence of Innovation Value Collaboration on the Competitive Advantage of Photo catalyst Ceramics SMEs in Bali.

Provides information that Ability Chain Supply moderates the collaborative effect of value innovation on the competitive advantage of photo catalyst ceramic SMEs in Bali. Where the indicated path coefficient is 0.529 with a t statistic of 5.579 > of 1.96. The results of this test indicate that Hypothesis 4 (H4) is accepted. This means the higher the ability of the supply chain will increase the competitive advantage of SMEs in Photo catalyst Ceramics in Bali Who have started their business for more than 4 years.

5. SUGGESTIONS AND CONCLUSIONS

5.1 Conclusion

Collaboration of innovation values has no negative and insignificant effect on competitive advantage in Photo catalyst Ceramics SMEs in Bali. Collaboration of innovation values does not have a significant positive effect on supply chain capabilities in SMES Photo catalyst Ceramics in Bali. Supply chain capability does not have a significant positive effect on competitive advantage in Photo catalyst Ceramics SMEs in Bali. Supply chain capabilities mediate the effect of Collaborative innovation value on competitive advantage in Photo catalyst Ceramics SMEs in Bali.

5.2 Suggestions

Based on the conclusions of the research results, several important things can be stated as follows:

1. For SMES Photo catalyst Ceramics in Bali, the results of this study are expected to provide an illustration that innovation can result from relationships and communication between business actors which are still lacking because they have business competition, so that there is no collaboration and sharing of information regarding quality products to be created.
2. For SMES Photo catalyst Ceramics, the results of this study provide guidance the importance of increasing competitive advantage in Bali. So that own efforts to further improve collaboration in creating innovation and how supply chain capabilities are carried out so that what is implemented will remain sustainable.
3. For Other Researchers For other researchers, it is possible to re-examine other variables that influence performance based on the theory that has been disclosed.

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