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# Developing Organizational Agility in SMEs: An Investigation of Innovation's Roles and Strategic Flexibility

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**Abstract:** Although social capital and collaborative knowledge creation were considered essential drivers in maintaining competitive advantage, empirical evidence on the impact of collaborative knowledge creation on organizational agility remained limited. Therefore, this study examined the relationship between social capital and collaborative knowledge creation in building innovation and agility and testing strategic flexibility as a moderating variable. It employed a quantitative design by distributing questionnaires to 414 managers and assistant managers of SMEs analyzed by SmartPLS-SEM. The results showed that social capital significantly affected collaborative knowledge creation, innovation, and organizational agility. Meanwhile, collaborative knowledge creation has no significant impact on organizational agility. Furthermore, strategic flexibility was not a moderating variable of the relationship between innovation and organizational agility. Based on these findings, this study produced recommendations for managers to strengthen organizational agility.

**Keywords:** social capital; collaborative knowledge creation; innovation; strategic flexibility; organizational agility



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## 1. Introduction

Encountering market turbulence, competitor challenges, and even devastating effects of the pandemic, an organization requires the capability and agility to respond to changes, perform certain adjustments [1] and strengthen its innovation ability [2–4] to maintain performance and sustainable competitiveness [5,6]. Moreover, in the current COVID-19 pandemic situation, everything has become unpredictable, causing turbulence in multiple sectors. Thus, the conventional competitive strategy was no longer effective [7]. The pandemic prompted the organization to continuously innovate by maintaining good relationships with the customers [8], optimizing available resources [6], and focusing on their product development [9]. The managers strived to identify opportunities through innovation. However, many failed to utilize precious resources to achieve strategic competitiveness [2]. Therefore, the business organization needs resistance ability by enforcing a variety of scenarios under uncertain contexts [1,10–12]. However, innovation was considered vital during a crisis, and how the company had laid the foundation for a resilient organization through increasing the role of innovation needed further empirical evidence [7,13]. Nevertheless, it was urgently needed given the intense disturbance that required anticipation and exploitation of innovation ability towards sustained competitive advantages [14].

The present study attempted to close research gaps as follows. First, the role of social capital and collaborative knowledge creation in the turbulence caused by the pandemic remained unexplored [7]. Although social capital and collaborative knowledge creation

have contributed to sustaining competitive advantages, the empirical evidence between this construct and innovation remained limited [15,16]. Second, the previous research disregards the effect of collaborative knowledge creation on organizational agility [7]. After all, by building adequate collaborative knowledge, an organization will have the critical notion of developing dynamic capabilities [17], creating a culturally resilient culture [18], thus enduring each potential crisis scenario. Third, while strategic value from collaborative knowledge creation practice was evident, most companies could not understand how this practice can be adapted to enhance their innovation abilities in the face of crisis, especially in SMEs. Moreover, SMEs have limited resources [19].

The existing literature described organizational agility as a complex construct. It can be impacted by many drivers such as organizational culture value [18], organizational flexibility [11], collaborative knowledge creation [5], and innovation [7,9,20]. However, there was still a scarcity of insight into the mechanism underpinning innovation that strengthens agility. Thus, the role of moderation should be considered. Furthermore, it was hoped to enrich the understanding of innovation's role in building agility. Hence, this study aimed to explore the predictor of organizational agility using a relevant variable called strategic flexibility that had not been extensively studied yet. Therefore, strategic flexibility has become the key element to making changes in organizational strategic planning so that the impact on innovation and organizational agility will be even more substantial in the future.

Motivated by the research gaps, the present study aimed to examine the nexus between social capital and collaborative knowledge creation towards innovation and organizational agility by proposing a structural equation model for SMEs in Indonesia, based on three primary reasons. First, SMEs were grown exponentially with a total of 64.5 million units that potentially became the backbone of the economy [21]. Therefore, it indicated the magnitude of the potential of social capital that needed to be empowered as the strength to build resilience in facing the turbulences. Second, Indonesian SMEs had a weak internal driver in a business dynamic; hence they required knowledge collaboration to improve innovation [22] for the employees from the grassroots level up to the organization [23,24]. Third, SMEs need to prepare strategic flexibility when facing turbulence caused by market shifts or the pandemic [25] so that they can survive in difficult situations [18]. The Section 2 of the article discusses the literature and hypotheses development, followed by method and result to propose a scenario and discussion about agility.

## 2. Literature Review

### 2.1. Organizational Agility and Dynamic Capabilities in SMEs

Organizational agility was the brainchild of [26] that was rooted in two primary concepts called adaptation (reactive) and organizational flexibility (proactive). Organizational agility reveals the ability to recognize environmental transition and counter it quickly by reshaping the resource set, business processes, and strategies [27,28]. In the SME sector, adapting to change was essential to reduce resource issues for future development [6]. Consequently, ensuing the inclusive approach brought out by previous researchers [7,29,30], this study conceptualized organizational agility as responsive capabilities aiming for a more efficient approach in a complex environment [31]. This approach involved rapid responses to changing situations [32] and the ability to predict and take opportunity, primarily by innovation and learning [12,30].

The indicators used to measure organizational agility were (1) seizing possibilities in potential [33], markets, and minimizing threats so that they have a strategic intent to build production stability [34,35]; (2) exhibit sensitivity to environmental changes [36] in order to deal with dynamics [37–39]; (3) increase decision-making agility [6,25,40]; (4) resource, process, and technology adaptation to address changing environmental needs [34,41–43]; and (5) taking into account new price, marketing, manufacturing, and/or partnership actions [23,33,34,44]. Organizational agility in woodcraft SMEs occurred because they produced highly artistic products that were high quality, hard to imitate, and of high value,

and they had export shares in various European and American countries [23]. In addition, the present study adopted the study of [7,45,46] in measuring organizational agility.

Furthermore, the dynamic capabilities theory was employed to frame this study, considering the recent turbulence of the business landscape. This theory was the expansion of the resource-based view [47], which stated that the reason for the difference among organizations was their competitive advantage attributed to being unique, valuable, non-replicable, non-reproducible, and non-replaceable [48]. Dynamic capabilities theory center on the organizations' ability to respond to a constantly changing business environment. In other words, organizations must be sensitive in sensing, seizing, and shaping internal and external opportunities and threats for the purpose of the right strategic decisions and reconfigure and reuse all potential and resources [19,42,49]. As a fact, over the past decade, dynamic managerial competencies and capabilities have resulted from the increasing quality of knowledge [16,50] that formed from a collaborative process that was implemented as an essential feature of the organization [17,39,51]. Furthermore, dynamic capabilities were hard for competitors to imitate based on particular characteristics, cultural values [52], and complex imitability [49]. Therefore, strong dynamic capabilities served as a solid foundation for organizational agility.

## 2.2. Social Capital and Collaborative Knowledge Creation

Previous research revealed the function of social capital in supporting knowledge management to achieve sustainable performance [53]. The literature also explored how collaborative knowledge creation is considered as a dynamic process that happens during social interaction between organizations and their partners [5,7]. The social network in the organization served as a channel for transmitting and integrating knowledge, thus could optimize the role of sharing and creating dynamic ideas and new values [54]. Collaborative knowledge creation was seen as a collaborative mechanism [55] to create and develop knowledge between partners to improve insight into changes [56]. Collaboration described a knowledge transfer mechanism that was harmonized and unified through dynamic social interactions [38] and thus could produce collaborative knowledge [57] both directly and indirectly between partners [53]. Social capital allowed the organization to survive a crisis by pooling expertise and resources [56]. Furthermore, [38] revealed that collaborative knowledge creation was reflected in the knowledge of organizations that develop sustainably, resulting in adjustment to environmental changes and rapidly changing market needs. Meanwhile, social capital formed a synergistic and coordinated network that allowed the company to adopt the necessary changes swiftly by means of knowledge [25]. Finally, social capital produces relational and cognitive skills, increasing organizational agility to respond to environmental changes briskly, flexibly, and in a structured way [58] to manage challenges, seize new opportunities, create value and ensure long-term viability [46]. Based on this, the hypothesis is formulated as follows:

**Hypothesis 1 (H1).** *Social capital is significant to collaborative knowledge creation.*

**Hypothesis 2 (H2).** *Social capital is significant to organizational agility.*

## 2.3. Social Capital and Firm Innovation

Social capital describes the interaction process between organizations and stakeholders that can affect the exchange of knowledge, ideas and resources among organizations [15]. The literature showed that building strong bonds with business affiliations through social interaction dynamically affected favorable outcomes in acquiring resources and capacity for innovation [59]. Experts already highlighted that the social approaches supply a fundamental basis for describing the impact of external and internal relationships on innovation [4,53,60]. Moreover, social capital has been considered a vital contributor to the success of innovation [61,62] because it involves collaboration-oriented leadership behavior in the achievement of innovation [63]. Furthermore, substantial social capital

promotes efficiency and ensures the quality of knowledge flow, thereby encouraging innovation activities without agonizing about risks and barriers [15]. Thus, interaction among organizations helped reduce knowledge limitations and updated the knowledge base, providing a high-quality source of motivation for innovation. Based on the discussion above, the hypothesis is formulated as follows:

**Hypothesis 3 (H3).** *Social capital is significant to firm innovation.*

#### 2.4. Collaborative Knowledge Creation and Organizational Agility

In building organizational agility, the role of collaborative knowledge creation has not been studied extensively [7]. At the same time, organizational agility was seen as the ability to govern and apply knowledge beneficially [53,64] in responding and adapting organizations to market turbulence and competition dynamics [59,65]. In order to achieve existence, agility requires applying knowledge, idea quality and collaboration to explore new opportunities in a volatile market [59]. Furthermore, Tu [53] claimed that the creation and dissemination of knowledge reflect the value chain of knowledge capital in building agility [66]. Furthermore, organizational agility requires more dynamic learning and collaborative knowledge creation strategies than competitors [67] to transform new ideas into responsive activities [5,6,11]. Hence, the proposed hypothesis was as follows:

**Hypothesis 4 (H4).** *Collaborative knowledge creation is significant to organizational agility.*

#### 2.5. Innovation and Organizational Agility

Innovative and less innovative organizations differed in terms of adaptation, risk management, and perspectives on uncertainty [20]. Innovative companies focus on learning and experimentation, overcoming uncertainty, and encouraging risk-taking [68]. In contrast, less innovative organizations are afraid of taking risks and uncertainty and tend to be weak in preparing business strategies [12]. It indicated that innovative companies had an organizational climate open to new ideas that affected their ability to identify new market opportunities and products than competitors [9,33,69]. Thus, organizations built new business models to pool existing resources into more dynamic mobile capital [68]. Thus, the changes brought about by innovation make organizations more agile [12,20,70]. Thus, we positioned:

**Hypothesis 5 (H5).** *Innovation is significant to organizational agility.*

#### 2.6. The Mediating Role of Collaborative Knowledge Creation

Social capital has a pivotal role in transferring and integrating knowledge and was vital in forming collaborative knowledge [54], and therefore increased adaptation to rapid change [56]. This mechanism was the implementation of the interaction of all social resources [38], which produced collaborative knowledge both directly and indirectly [53]. In a crisis, whether due to market turbulence or other disturbances, social capital contributes to the organization's survival [56] and optimizes the diffusion of skills and resources [71]. Moreover, collaborative knowledge creation becomes the foundation for organizations to adapt to environmental changes and dynamic markets [38]. In order to build agility, organizations need to form a coordinated network to collect ideas and turn them into knowledge [25]. It produced relational skills that ultimately improved organizational agility, especially in responding to changes flexibly [58]. It ultimately enabled organizations to manage challenges and opportunities, and also value and sustainability [46,65,72]. Predicated on the discussion above, the hypothesis was proposed as follows:

**Hypothesis 6 (H6).** *Collaborative knowledge creation mediates social capital and organizational agility.*

### 2.7. Mediating the Role of Firm Innovation

The existence of social capital was as a liaison between organizations and stakeholders through the exchange of ideas, knowledge and resources [15]. Therefore, it was necessary to develop strong ties with partners to generate resources and capabilities for innovation [59]. Experts' findings revealed that social capital provided the foundation of the relationship between partners [4,53,60] and was an essential driver of successful innovation [61,64]. Furthermore, innovative organizations focused on learning and risk-taking [68], indicating an organizational climate that was open to new ideas [9,33,69], and ultimately made the organization more agile [12,20,70]. Thus, innovation provided the power to face the risk of uncertainty [12] to have sustainable performance and competitive advantage [22]. Formulated on the discussion, the hypothesis was as follows:

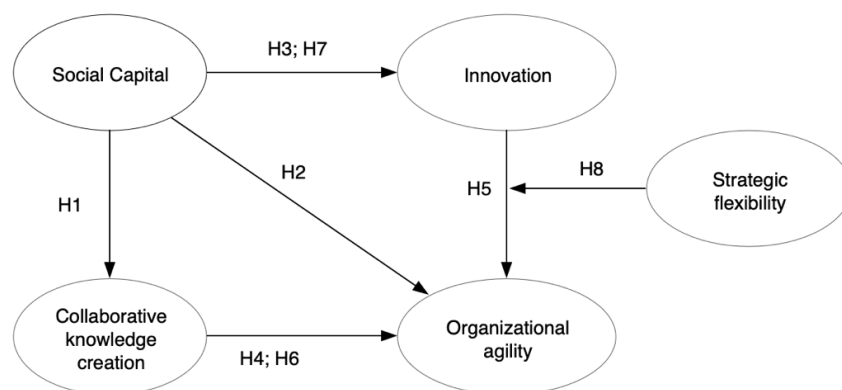
**Hypothesis 7 (H7).** *Innovation mediates social capital and organizational agility.*

### 2.8. The Moderating Role of Strategic Flexibility

According to dynamic capabilities theory [52], organizations must be sensitive to opportunities and threats to develop and configure plans and strategic decisions [17,39,73]. Therefore, the organization must have a strategy that can adapt the organizational conditions to the changes that occur [1]. Strategic flexibility was the ability to quickly combine and reconfigure the company's stock of resources [49] and carry out the actions taken by the company in real-time [12,74]. In compliance with [3,75,76], strategic flexibility was achieved through optimizing resource flexibility. If the resource was scarce, the organization must find other resources; meanwhile, if the resource was sufficient, it allowed the company to use resources more efficiently for new purposes [6,9]. In addition, high strategic flexibility allowed companies to build, transfer, and integrate ideas quickly and prepare new patterns according to the current situation [77]. As a result, a company with strategic flexibility can reduce response time to dynamic changes [78] by creating, expanding, or modifying knowledge bases [79] that enable the company to process its knowledge resources effectively, thereby increasing the value of knowledge for organizational agility [75,76]. Hence, we recommend that:

**Hypothesis 8 (H8).** *Strategic flexibility positively moderates innovation and organizational agility, so innovation is linked with better organizational agility in companies with high levels of strategic flexibility.*

Therefore, the present study examined the relationships between social capital, collaborative knowledge creation, firm innovation, organizational agility, and strategic flexibility in direct, mediation, and moderation. The conceptual framework is shown in Figure 1.



**Figure 1.** Conceptual framework.



### 3. Methodology

#### 3.1. Data and Sampling Method

This study involved SMEs, which were the backbone of the Indonesian economy. In order to obtain the initial sample, we used the local government database of the Bali province to identify SMEs for research purposes. The population of this study was 450 woodcraft SMEs in Bali Province, Indonesia. Accordingly, the sample was determined by a simple random sampling method called the lottery method, meaning that each member of the population received the same opportunity as the sample once. The formula determined the total number of sample frames [80]; hence, 207 SMEs were asked to complete the research questionnaire. Research respondents were managers and assistant managers as the ideal targets as they have a strategic view of organizational characteristics related to organizational practices. The data was collected for 6 months from February to July 2022 via email, Google Forms, and a direct visit by first sending a prior email notification regarding this study. We obtained a total of 414 responses, which can be analyzed to achieve the objectives of this study.

#### 3.2. Measurements

Since previous studies had evaluated the construct variables used for this study, the construct measurement was adopted from the existing literature. Social capital was measured by 5 indicators adopted from [7,45,76]. Collaborative knowledge creation was measured by 8 indicators adopted from [7,38,59,81]. Firm innovation had 10 indicators adopted from studies by [54,55,82]. Organizational agility was measured by 5 indicators adopted from [7,83,84]. Lastly, strategic flexibility with 6 indicators adopted from [3,74].

To evaluate the constructs, we employed A 7-point Likert scale ranging from “1: strongly disagree to 7: strongly agree”. For ensuring clarity of instructions and statements, the questionnaire written in the Indonesian language was piloted on 30 SME managers who were experienced in corporate strategic planning. This process caused minor changes to the wording of instructions and questions of the questionnaire. The constructs measurement are presented in Table 1.

**Table 1.** Constructs measurement.

Variable	Sources
Social capital	[7,45,46]
Collaborative knowledge creation	[7,38,59,81]
Firm innovation	[54,55,82]
Organizational agility	[7,83,84]
Strategic flexibility	[3,74]

This present study employed partial least square based on variance (PLS-SEM) to estimate the proposed organizational agility model and assess the relationship between variables, either directly or indirectly. In order to evaluate the validity and reliability of the construct variables, as recommended by [85], this study evaluated the measurement model. Furthermore, to test the hypothesis about the relationship between variables, this study assessed the structural model. Since the research objective was to validate the theory of dynamic capabilities in building organizational agility models, using SEM-PLS was acceptable [86].

### 4. Results

#### 4.1. Respondent Profile

Table 2 showed the demographic outline of the sample. It showed that the respondents mostly had a higher education background. It was one of the critical pillars of how managers earned quality knowledge [15,87] to develop plans and strategies for dealing with various turbulences [79].

**Table 2.** Demographical facts.

Description		Frequency	Percentage (%)
Age	<25	35	8.5
	25–30	142	34.3
	31–35	135	32.6
	36–40	79	19.1
	41–45	23	5.5
Gender	Male	239	57.7
	Female	175	42.3
Education	Bachelor	277	66.9
	Master	126	30.4
	Doctor	11	2.7
Experiences	<5	2	0.5
	6–10	181	43.7
	11–15	129	31.2
	16–20	102	24.6

4.2. The Assessment of the Measurement Model

Table 3 showed that all indicators had a loading factor value higher than 0.6. Furthermore, the CR value was more than 0.7, while the AVE value was more than the recommended level of 0.5. Furthermore, data analysis determined that the square root value of AVE was more than the construct correlation value, indicating that the discriminant validity requirement was met. These indicators showed that the validity and construct reliability requirements were met [85]. Furthermore, the value of VIF was between 1.437–4.468 (smaller than the recommended level of 5), indicating it did not exhibit any issues connected to the variance of the general method [86].

**Table 3.** Measurement Model Indicators.

Indicators	Loading	CR	AVE
Social capital		0.928	0.725
1. Social networks enhance the opportunities, ideas and insights	0.940		
2. Bond connections and collective with partners	0.904		
3. Partners actively involved in decision making	0.935		
4. Social networks’ feedback and recommendations.	0.752		
5. Social networks influence processes, products, and services	0.696		
Collaborative knowledge creation		0.911	0.564
1. Getting novel ideas and technologies	0.691		
2. Collaborating with partners to gain new knowledge	0.639		
3. Launching and exchanging creative ideas	0.626		
4. Sharing repositories of knowledge and best practices	0.862		
5. Reconfiguring new knowledge.	0.783		
6. Sharing new values and thoughts	0.757		
7. Collaborative learning experiments	0.788		
8. Strengthening knowledge and experience transfer	0.831		

Table 3. Cont.

Indicators		Loading	CR	AVE
Firm innovation			0.932	0.582
1.	Developing new products using available of resources	0.830		
2.	The company pursues up-to-date strategy to do things	0.775		
3.	Respond to activities that involves technology	0.775		
4.	Availability of knowledge to develop new products	0.718		
5.	Company continually explores new ideas	0.634		
6.	Competency to process technologies	0.692		
7.	The company's creativity in its methods of operation	0.817		
8.	Adopting the products and processing technologies to accomplish future needs	0.834		
9.	Company often sells its new products and services	0.836		
10.	The perception about innovation as something risky and resisted	0.687		
Organizational Agility			0.921	0.701
1.	The opportunities produced by the crisis is pursued	0.732		
2.	Recognizing dynamic environmental transition	0.835		
3.	Improvement in terms of the agility of decision making	0.849		
4.	Adaption for resources to accommodating the changing environment	0.911		
5.	New strategies were taken into consideration	0.849		
Strategic flexibility			0.919	0.657
1.	If there is change of circumstances, our organization can adjust its current plans effortlessly	0.888		
2.	If there is change of circumstances, our organization is well-prepared to act accordingly	0.888		
3.	If there is change of circumstances, organization can adjust the strategy changes	0.898		
4.	If there is change of circumstances, organization has the required competency to modify daily routines and practices	0.723		
5.	If there is change of circumstances, our organization can generate a new project proactively	0.737		
6.	If there is change of circumstances, our organization can prioritize projects with the highest likelihood to succeed	0.702		

#### 4.3. Structural Model Testing

This study applied the bootstrap method with 5000 samples to evaluate the significance of the indicators and path coefficients [88]. The results showed that the goodness-of-fit (GoF) model had a value of 0.675, which indicated that the fitness model was significant. In conclusion, these findings indicated that the proposed organizational agility model could be applied to the woodcraft SME sector. In addition, testing on the standard residual root mean square (SRMR) and normed fit index (NFI) showed that the SRMR value was 0.086, while the NFI was 0.687, indicating that the model was fit [89]. Furthermore, the examination of R2 revealed that social capital, collaborative knowledge creation, and innovation described a 0.295 (29.5%) variance in organizational agility. Finally, all Q2 had positive values, which indicated that all variables had good relevance predictions [88].

#### 4.4. Hypotheses Testing

The analysis results showed that four of the five hypotheses of the direct relationship were confirmed (Table 4). The relationship between social capital and collaborative knowledge creation was significant ( $\beta = 0.442$ , STDEV 0.054, T Statistic 8.323 > 1.96); hence hypothesis 1 was accepted. The relationship between social capital and organizational agility was significant ( $\beta = 0.198$ , STDEV 0.058, T Statistic 3.413 > 1.96); hence hypothesis 2 was accepted. The relationship between social capital and innovation was significant ( $\beta = 0.534$ , STDEV 0.047, T Statistic 11.287 > 1.96); hence hypothesis 3 was accepted. The relationship between collaborative knowledge creation and organizational agility was not significant ( $\beta = 0.062$ , STDEV 0.053, T Statistic 1.177 < 1.96); hence hypothesis 4 was rejected. Lastly, the direct relationship between innovation and organizational agility was significant ( $\beta = 0.375$ , STDEV 0.054, T Statistic 7.012 > 1.96); hence hypothesis 5 was accepted.



**Table 4.** Path Coefficients.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	p Values	Decision
SC → Collaborative K C	0.442	0.446	0.054	8.232	0.000	Sig
SC → Org Agility	0.198	0.194	0.058	3.413	0.001	Sig
SC → Firm Innovation	0.534	0.535	0.047	11.287	0.000	Sig
Collaborative K C → Org Agility	0.062	0.059	0.053	1.177	0.240	Non-sig
Firm Innovation → Org Agility	0.375	0.376	0.054	7.012	0.000	sig

*4.5. Mediation Testing*

Following the identification of the direct relationship between variables, the next stage was to test the positions of mediating variables. In this study, we tested two mediation pathways. According to [85,86], the method used was to measure the VAF value < 0.20, meaning that mediation was not found, while 0.20–0.80 indicates partial and VAF value > 0.80, meaning that there was full mediation. In order to test the mediating effect of the model, non-parametric bootstrap was used [90]. Finally, the variance accounted for (VAF) was calculated to obtain the indirect link and total sizes. When the VAF was greater than 80%, it indicated full mediation; between 20 to 80% was partial; below 20% indicated no mediating effect [86]. Furthermore, the results were presented in Table 5.

**Table 5.** Mediation Analysis.

Link	Mediator	Independent Variable-Mediator	Mediator-Dependent Variable	Direct	Indirect	Total Effect	VAF (%)	Decision
SC-OA	CKC	0.442	0.062	0.198	0.274	0.472	0.581	Partial mediation
SC-OA	Innov	0.534	0.375	0.198	0.200	0.398	0.503	Partial mediation

The role of mediation in the causal relationship between social capital, collaborative knowledge creation, and organizational agility, along with social capital, innovation, and organizational agility, was examined using the VAF test. Because this study examined two mediation pathways, we assumed that collaborative knowledge creation partially mediates the relationship between social capital and organizational agility, where the VAF value was 58.1%, indicating that hypothesis 6 was accepted. Furthermore, innovation partially mediated the relationship between social capital and organizational agility with a VAF value of 50.3%, indicating that hypothesis 7 was accepted.

Finally, we analyzed the moderating variable in this research model. Multigroup analysis using PLS examined the moderating role of strategic flexibility [91]. However, the analysis showed that strategic flexibility did not mediate the relationship between innovation and organizational agility ( $\beta = 0.084$ , STDEV 0.044, T Statistic 1.912 < 1.96, PV 0.056); hence hypothesis 8 was rejected. The analysis results were presented in Table 6 and Figure 2.

**Table 6.** Moderating testing.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	p Values	Decision
Firm_in → Stra_Flex → Org Agility	0.084	0.086	0.044	1.912	0.056	Non-sig

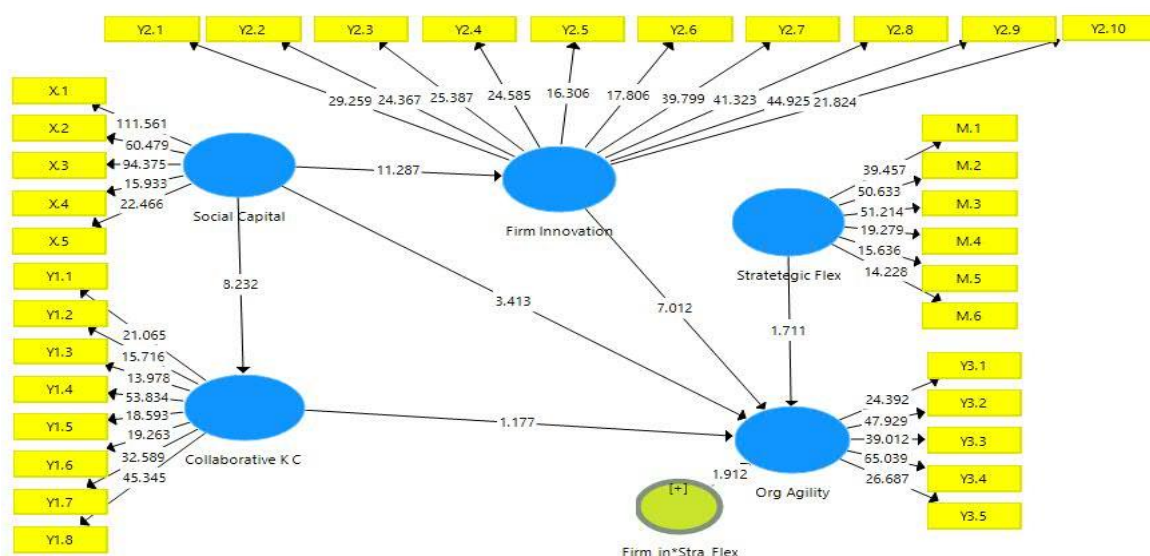


Figure 2. Output Analysis.

### 5. Discussion and Research Implications

This study examined the factors that affect organizational agility in anticipating the turbulence and challenges of globalization. Using PLS-SEM analysis, this study revealed that organizational agility was significantly influenced by innovation, followed by social capital. These results validated previous research in the context of SMEs by [7,15,16], which found the critical role of social capital in building innovation. Furthermore, these results implied that social capital was essential in building knowledge collaboration that led to innovation capabilities, further enhancing organizational agility. This finding strengthened previous research on organizational efforts, especially SMEs, in improving organizational agility [5,7,20,70].

In woodcraft SMEs, the social capital construct was adopted from previous research [7,45,46]. The social capital involved was (1) the ability to increase opportunities, ideas, and concepts, called exploration, aimed to increase contribution in the international market because it has unique and high-value products; (2) close partners and collaborations included suppliers, producers, governments, and competitors. Woodcraft SMEs had mutually beneficial collaborations [92–94], especially in the provision of high artistic value handcraft products [23]; (3) partners could make decisions, especially when confronted with varied market factors [6,40]; as a result, social capital was strengthened as a source of strength in developing long-term performance [95]; (4) recommendations from the social networks built between them [96] became a strength in facing market turbulence [97]; and (5) social networks influenced processes, products, and services [29]; thus, SMEs stability and productivity were strengthened.

Contrary to what was expected, collaborative knowledge creation did not significantly affect organizational agility. This result contradicted the study conducted by [7], which found that collaborative knowledge creation was an essential driver in building organizational agility because knowledge was the principal capital in building agility [31,98]. Therefore, a possible explanation for the insignificant effect of collaborative knowledge creation on organizational agility could be that SMEs were still not open to building collaborative knowledge. SMEs viewed knowledge as exclusive capital and were unwilling to share it, fearing that it could increase the competitiveness of the competitors [99].

In a mediating path, collaborative knowledge creation and innovation mediated the relationship between social capital and organizational agility. Social capital has a pivotal role in transferring and integrating knowledge and was vital in forming collaborative knowledge [7] and therefore increased adaptation to rapid change [56]. This mechanism was the implementation of the interaction of all social resources which produced collaborative knowledge both directly and indirectly. Moreover, collaborative knowledge creation

becomes the foundation for organizations to adapt to environmental changes and dynamic markets [38]. In order to build agility, organizations need to form a coordinated network to collect ideas and turn them into knowledge [25]. In addition, innovative organizations focused on learning and risk-taking [68], indicating an organizational climate that was open to new ideas [9], and ultimately made the organization more agile [4,70]

Furthermore, strategic flexibility was not an MV of the relationship between innovation and organizational agility. This result was contrary to a study conducted by [100], which found that strategic flexibility strengthened the strategic orientation of SMEs. A possible explanation was that woodcraft SMEs already had agility because they had unique, distinctive products that competitors could not imitate. Furthermore, they could anticipate and seize opportunities when the market appetite changes [4]. These findings also refuted the statement from [19] that SMEs had limited resources. Instead, SMEs could anticipate and seize opportunities and reconfigure their resource sets, business processes, strategies, and innovations [27,28,32].

### 5.1. Theoretical Implications

The present study contributed to enhancing the literature on organizational agility and dynamic capabilities theory in four main elements. First, this study proposed and examined an integrated model of supporting social capital, collaborative knowledge creation, and innovation in woodcraft SMEs, where the combination of these three drivers was the key to building organizational agility. It turned out that the organizational agility model had good compatibility and explanatory power. Thus, it confirmed that social capital, collaborative knowledge creation, and innovation were generally accepted [7,25], especially in the SME sector [25]. More specifically, social capital played a vital role in increasing collaborative knowledge creation and innovation and encouraging SMEs to increase agility to face challenges and turbulences. The results proved that social capital and collaborative knowledge creation were the basis for forming innovations that ultimately made SMEs more agile. Furthermore, this study assessed organizational agility by integrating social capital into the organizational agility model. The results of analysis showed that the organizational agility integration model for SMEs was fit. In addition, the inclusion of innovation in the organizational agility model increased its explanatory power. Conceptually, the results of this study strengthened the social capital–organizational agility model in the SME sector [7]. This finding showed that in SMEs, social capital and collaborative knowledge creation could simultaneously strengthen the influence of innovation on organizational agility. Thus, the organizational agility model in the context of SMEs was conceptually extended to the social capital–innovation–organizational agility model. Furthermore, these findings provided further evidence for the conclusions of previous studies [8,70], which claimed that innovation was an essential determinant of organizational agility.

Second, this study revealed that collaborative knowledge creation and innovation mediated the relationship between social capital and organizational agility. Although the mediation relationships tested were significant, the relationship between social capital, collaborative knowledge creation, and organizational agility had a greater value. These results proved that SMEs were highly focused on establishing practical collaborative knowledge [98,101] to develop potential and quality knowledge [15,24]. Furthermore, managers' involvement was required in knowledge-sharing practices [24] to generate knowledge capability [102] and knowledge application [54,98]. Therefore, SMEs must take notice of knowledge and prioritize it for organizational sustainability, productivity improvement, innovation, and competitiveness.

Third, organizational agility was an interesting topic for researchers, policymakers, and practitioners, but the existing literature on how Indonesian SMEs can build agility, especially in a crisis, was not yet comprehensive. Most relevant research focused on European countries, while this study contributed to the organizational agility literature in developing countries. The results showed that social capital and innovation affected organizational agility. Furthermore, it was the first study to link social capital, collaborative

knowledge creation, and innovation as antecedents of organizational agility when it was majorly studied in developed countries such as Germany [17], Taiwan [6], and Spain [18].

Fourth, this study increased insights into dynamic capabilities related to the ability of SMEs to respond to the rapidly changing business environment. The results showed that social capital was the key element of dynamic capabilities used for capturing new opportunities through strengthening collaborative knowledge creation to improve managerial competence [12], designing and improving business model innovation to build organizational agility [27,29,52]. Notably, social capital triggers the emergence of collaborative knowledge creation in SMEs, which positively affect the emergence of innovation. Furthermore, from the perspective of dynamic capabilities, the results showed the importance of integrating these drivers into a competitive advantage [73] because the better performance was a combination and interaction between knowledge resources and their capabilities [7,39,52]. Finally, this study showed the urgency of organizational agility as a performance evaluation measure in countering to turbulence and other similar pandemics [7]. This evaluation helped to gain new theoretical insights to investigate advanced knowledge about the value of collaborative knowledge creation and innovation to anticipate risks due to turbulence.

### *5.2. Managerial Implications*

In managerial implication, this research provided insight into three elements. First, understanding the critical role of social capital and collaborative knowledge creation in attaining innovation and its impact on organizational agility provides managers with valuable insight into governing severe turbulence. Achieving innovation required investing in social capital and collaborative knowledge creation to answer the crisis. Managers had to realize that abundant and measurable quality of collaborative knowledge enabled the development of innovation in products, processes, and methods to strengthen innovation capabilities. Second, the organization had to provide a robust mechanism for building ties, social networks, and collaboration with all stakeholders (such as suppliers, business partners, government, and even competitors) who offered renewable knowledge resources to sense and seize the opportunities that enabled innovation under an unprecedented and highly volatile environment. Eventually, the research model presented a paradigm for achieving organizational agility that guides organizations on the implementation to thriving social capital, collaborative knowledge creation, and high cruising range on the ability of innovation to overcome challenges and turbulence.

## **6. Conclusions and Future Study**

Most previous studies examined organizational agility but did not focus on integrating firm innovation drivers, namely social capital and collaborative knowledge creation, especially in an emerging country such as Indonesia. Organizational agility provides opportunities and encourages every country, industry, and business entity to adapt with market turbulence, even a pandemic, to maintain organizational performance and build sustainable competitive advantage. The present study examines the role of social capital, collaborative knowledge creation, and firm innovation on organizational agility in the SMEs sector. Furthermore, it examined strategic flexibility as a moderating variable.

Three important conclusions can be drawn from the present study. First, organizational agility is a complex construction, which consists not only of social capital but also firm innovation. Second, collaborative knowledge creation and firm innovation have a mediating variable relationship between social capital and organizational agility. Furthermore, two mediating patterns acted as a strategic path to enhance organizational agility. Finally, strategic flexibility did not act as a moderating variable in the relationship between innovation and organizational agility.

### *Limitations and Further Study*

Although the present study provided theoretical and managerial contributions, this study had several limitations that are worth examining and urges for research in the future.

First, this present study was conducted while the pandemic was still occurring in Indonesia, but the world began to accept and make peace with COVID-19. Undeniably at this point, mobility was still limited by rules such as regional lockdowns and health protocols. Under these conditions, collecting a large sample of data was difficult, especially from SMEs in Indonesia. Therefore, the discoveries of the present study cannot be generalized conclusively to different industries or countries. Consequently, the research model in the present study should be assessed in further studies, targeting a substantial amount of samples from different sectors, countries, and regions to authenticate these results. Second, the measurement of the variables in the present study was chosen at the enterprise level, while the development of capabilities and the realization of increased agility began at the level of individual business processes in different departments or units. Therefore, future research can be completed at the individual or team level within the organization. Finally, the present study was conducted only in woodworking SMEs; therefore, the results cannot be generalized to other SMEs or industries. For this reason, future studies about the organizational agility model must be conducted in more diverse sectors or organizations.

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