

# **MARKET INFORMATION ACCESSIBILITY AND SUCCESSFUL COLLABORATION INNOVATION: MEDIATION EFFECT ON START-UPS SALES GROWTH**

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## **ABSTRACT**

Several people turned or changed to entrepreneurs and established start-ups during COVID-19. Limited access allows them to use the network competence and access market information to improve sales growth. Therefore, this research aims to contribute to a conceptual model of market information accessibility and successful collaboration innovation to ensure start-ups achieve superior sales growth. The analysis results with SEM-AMOS using the normality test resulted in 192 start-ups in Indonesia from the initial data of 280. The results showed that the level of suitability (significant) meets all the requirements and supports the hypothesis. However, market information accessibility and successful collaboration innovation play an important role in mediating the relationship between network competence and sales growth. This research contributes to the body of knowledge in the development of relational marketing theory. Moreover, start-ups' actors need fast adaptation because their business lasts longer by seeking access to information and collaboration innovation.

**Keywords:** Network Competence, Market Information Accessibility, Successful Collaboration Innovation, Sales Growth, Start-Up.

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## **1. INTRODUCTION**

Start-ups are small and new companies that always change and have limited sales growth. To overcome this limited growth, they are required to create a business network and access external resources. According to the Indonesian Ministry of Information and Communication Technology, Indonesia is having one of the top five start-ups in Southeast Asia. These new companies always have several problems including being unable to build access to relational

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information with other parties, naturally undeveloped norms of cooperation, unbalanced demand and supply, the lack of innovation development, and others. The Ministry of Cooperatives and Small and Medium Enterprises (Kemenkop UKM) reported that 3.79 million micro small and medium enterprises normally used network platforms, specifically online. Meanwhile, about 8% or 59.2 million SMEs are in Indonesia, indicating that the country has large start-ups supporting the economy.

The development of network competence starts up through market access, technology, reconfiguration of innovation, and business integrity becomes one of the ways to reduce the weaknesses that occur in start-ups (Cenamor, Parida, & Wincent, 2019; Kale, Singh, & Perlmutter, 2000). Empirical research showed an insignificant relationship between network competence and company sales growth, which is caused by the poor use of technology and the internet (Nuryakin, Retno Widowati, & Fatmawati, 2018; Nuryakin, Widayanti, Damayanti, & Susanto, 2021). Research (Mu, 2014) emphasized that the ability to build and manage networking competencies becomes the key to generating revenue. Companies that build relationships of fairness seek to establish cooperation relationships that lead to increased sales (Terpend et al., 2011). In this competitive era, SMEs survive by having the capability to collaborate with networks, relational skills, knowledge of partners, and internal communication (Shah, Yasir, Majid, & Javed, 2019). The contradiction provoked the idea for a need to discover a mediating variable that can bridge the relationship between the capability of developing business networking and sales growth. Various studies have shown that variables which contain the definition of collaboration, alliance (Jones, Fawcett, Fawcett, & Wallin, 2010) are often used as an incentive for mutualistic cooperation (Smart & Dudas, 2007). This is in line with (Mitrega, Ramos, Forkman, & Henneberg, 2012) that being competent to create networks is one of the company's competitive advantages during COVID-19.

According to (Human & Naudé, 2009) SMEs need to build superior network competence to generate revenue. Research (Parida, Pesämaa, Wincent, & Westerberg, 2017) and (Peemane, 2022) emphasized that small companies or start-ups need to have these capabilities with external parties to enable them to increase consumers, sales, and innovation. Network competence helps in generating revenue when there are mutual relationship, management, internal communication, and knowledge-sharing partners (Ganjeh, Khani, & Tabriz, 2020). Research (Nuryakin, 2020) showed that this capability also helps companies to achieve superior sales growth by making market information accessible. This shows that start-ups need market information accessibility for markets, consumers, and suppliers (Rochiyati, Herning, & Jati, 2022). To develop creative and competitive ideas, SMEs need to collaborate on product innovation. Investigation by (Nuryakin et al., 2021) indicated that access to an external environment makes companies always understand market trends and new ideas. Therefore, this research provides a theoretical and conceptual contribution to the development of knowledge about start-ups to achieve superior sales growth. This result helped new companies deploy resources and improve their efficiency, as well as contribute to relational marketing-theory.

The important thing on the above thoughts, the research objective is to identify the important role of network competence to achieve start-up sales growth. There are several paths to achieve sales growth through several intervening variables such as market information accessibility and successful collaborative innovation. By using some statistical analysis, it will be known how important the role of market information accessibility and successful collaboration as a bridge to

achieve sales growth indicators through increased product sales, increased sales volume, increased market coverage, and sales revenue. Finally, some recommendations for start-ups in developing collaboration product sales and market accessibility are proposed.

## **2. LITERATURE REVIEW**

### **2.1. *Market Information Accessibility***

In this research, market orientation theory which is regarded as information sharing and exchange between two parties was used to explain the accessibility of information. Knowledge and information sharing are important because it increases competitiveness and also provide links to individuals or organizations transformed into economic value (Jian & Wang, 2013).

Dissemination of information to various parties becomes one of the ways to increase the superior competitiveness of a company. Based on market orientation theory, the relationship between consumer and competitor as well as their functions focuses on information processes (Kohli & Jaworski, 1990). (Tsai & Ghoshal, 1998) used structural, relational, and cognitive variables to carry out social interactions as well as build trust between resources. According to (Royo-Vela, Amezcua Salazar, & Puig Blanco, 2022) and (Solano Acosta, Herrero Crespo, & Collado Agudo, 2018), consumer and competitor orientations as well as the relationship between clusters tend to affect company performance. The market orientation which refers to consumer-driven, competitor-focused, and inter-functionally tends to generate innovation, competitive advantage, profitability, as well as sales growth (Slater & Narver, 1994, 2000).

According to (Nuryakin et al., 2021), market information accessibility is how companies actively cooperate with participants, market their products, and reach out to consumers through the internet. SMEs needed this accessibility to discover customers' wants, relate with suppliers of raw materials, share information on access to capital, and collaborate with financial players (Rochiyati et al., 2022).

Analysis (Baker & Sinkula, 2005) indicated that market information is a way to obtain, disseminate, and ultimately use information, particularly to achieve successful product innovation. Its usefulness is a way of presenting congruent meaning to make decisions in a marketing strategy (Amentie, Sogbossi, & Amoussouga, 2017). In SMEs, the success of product innovation depends on dissemination, acquisition, and utilization processes. Research by (Cillo, De Luca, & Troilo, 2010) explained that market information is also executed by sharing and using the data collected. Therefore, it tends to affect innovation and company performance. The use of market information helps with creating new products and meeting current as well as future customer needs. Based on this first discussion, a hypothesis is determined as follows:

H1a: The market information accessibility positively influences successful collaboration innovation.

H1b: The market information accessibility positively influences a sales growth.

### **2.2. *Networking Competence***

Relationship marketing departs from the theory of social exchange and discusses the factors that encourage collaboration and maintain competence with others to an organization. In the Resource Based View, networking is a distinctive subset of dynamic capabilities (Barney, 2001; Eisenhardt & Martin, 2019; McGrath, Medlin, & O'Toole, 2019). Dynamic capabilities show product innovation and creative strategy for alliances. Also, networking is related to social capital theory such as relational marketing, which discusses how a particular company collaborates with others. According to relational-based theory, it is the interaction between alliance partners to create knowledge transfer (Kale et al., 2000). Networking helps the growth of SMEs to become strong. Furthermore, it enables companies to collaborate and form coalitions with various external actors and parties (Ganjeh et al., 2020; Ritter & Gemunden, 2002; Sayekti & Soliha, 2016). Networks allow start-ups to coordinate, communicate, and share knowledge with other parties (Shah et al., 2019). Therefore, network competence is how companies deploy tangible and intangible assets that are interconnected with others, to be part of relational marketing theory because can explain collaborative, alliance partner, share knowledge, coalitions, communicate between Stars up SMEs actors.

According to (Setiawan & Hanfan, 2017) it improves start-ups' performance by collaborating with customer needs. Network competence focuses on SMEs with relationship skills, knowledge, and internal communication that help in achieving innovation and sales growth (Parida et al., 2017). Although, sales growth is part of start-ups' performance but is influenced by successful collaboration innovation, market information accessibility, and network competence (Ardyan, 2016; Nuryakin, 2020; Rochiyati et al., 2022).

Network competence is defined as the company's ability to develop and utilize internal - external organizations, by developing a strong network that will benefit the company in the future, especially small companies (Zacca, Dayan, & Ahrens, 2015). Strong belief in network competence provides organizations with commitment and trust in their relationships by promoting inter-organizational competencies, sharing information, collaboration and problem solving (Charoenwiriyaikul & Suntornwanawesshaw, 2019). Competence of external network and intrafirm network affect firm performance (Ren, Wang, Yang, & Wei, 2013). Network competence focuses on how start-ups collaborate, communicate, create new values, maintain shared commitments, as well as share knowledge and information with internal and external parties. We therefore construct our second hypothesis as follows:

H2a: The network competence positively influences market information accessibility.

H2b: The network competence positively influences a sales growth.

### **2.3. *Successful Collaboration Innovation***

Innovation is a company's ability to adapt to market and technological developments. Successful innovation is when the competitors adopt the product and achieve the SMEs' sales target. Meanwhile, it is disrupted while there is high adoption of competitors. Collaboration becomes one of the solutions in the marketing world. Successful collaboration innovation is the combination of consumer needs, competencies, knowledge, and technical opportunities carried out between business actors. It is also the cornerstone of success across all complementary companies. (McNally, Cavusgil, & Calantone, 2010) indicated that the failure of collaboration innovation is influenced by technology, marketing, and customer discontinuity. A company tends to have

competitive advantages when they successfully create a new product. Therefore, a collaboration innovation strategy is needed to address product vacancies, uncertain demand, ever-changing technology, and increasingly fierce competition. Much literature has discussed the importance of collaborative networks in explaining corporate innovation. These studies particularly confirm that a firm's specific position in its network shapes access to information and resources that support innovation to reduce the uncertainty associated with the creation of new knowledge (Ozer, Demirkan, & Gokalp, 2013) and (Ahuja, 2000).

In SMEs, collaboration innovation help to make a product unique (Sugiyarti et al., 2017) Also, it is indicated by sharing activities with other business actors. In small companies (Sulistyo & Siyamtinah, 2016), collaboration innovation has strong, flexible, agile, and adaptive potential to expand the market as well as technology coverage because of its small scope. Collaborative knowledge base is created together with the development of social capital through knowledge experience to share information and resources with partners so that it will increase commitment, trust and organizational awareness (Charoenwiryakul & Suntornwanawesshaw, 2019). It is carried out due to network competence and market information accessibility that complement each product sold by start-ups. According to (Ardyan, 2016) and (Heng, Ferdinand, Afifah, & Ramadania, 2020) it assists companies to achieve superior sales growth by examining the product value, market share, customer revenue, market coverage, and innovation success. The ability to influence sales growth can develop new products and services for customer needs, allocate resources to research new innovations, use new technologies to develop work efficiency, and regularly adjust management according to changes, leading to high performance and competitiveness company (Peemane, 2022). In an effort gauge this relationship more specifically we construct our final hypothesis:

H3: The success of collaboration innovation positively influences a sales growth

The hypothesis is indicated by creating a new model with market information accessibility and successful collaboration innovation followed by its antecedents and consequences. Figure 1 shows the conceptual model of network competency, market information accessibility, successful collaboration innovation, and sales growth of start-ups. It also indicates the five hypotheses built from previous research.

**Figure 1:** Research Model

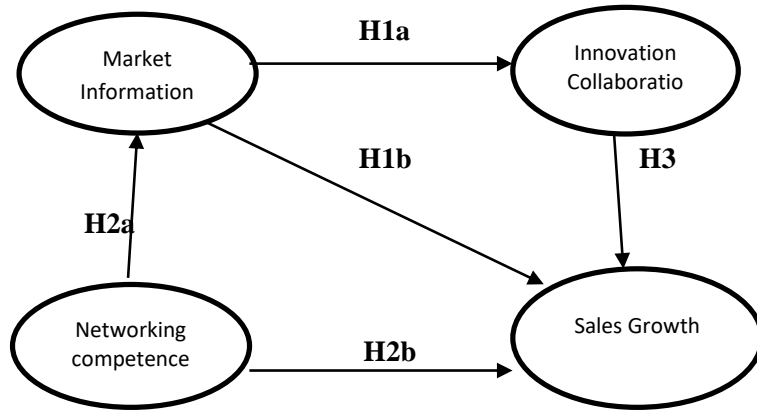


Figure 1: Conceptual model between network competence, market information accessibility, successful collaboration innovation, sales growth.

### 3. RESEARCH METHODOLOGY

#### 3.1. Data Collection

This research focuses on start-ups in East Kalimantan that are participating in entrepreneurship training under the Indonesian government's Ministry of Technology and Communication. A purposive sampling technique was used to obtain data from the company owner that has been operating for at least two years and a total of 192 out of 280 start-ups were examined. Theoretically and empirically, the selection of this sample has a strong dependence characteristic with buyers. This shows start-ups must become sensitive to the relationship between their marketing and network.

The research samples comprise 29.1% male and 70.8% female. Women, who instinctively have the desire to survive for their families, encourage them to become entrepreneurs. Also, about 57%, 68%, and 19% of the participants are between the age of 30-40, 20-30, and over 50 years, respectively. About 58.8%, 11.4%, 2.6%, and 29.7% are in Senior High School, Junior High School, Elementary School, and Undergraduate, respectively. Furthermore, 72% and 28% of the participants are married and still single, while 42% and 58% have an income below and above 5 million, respectively. A total of 39%, 44%, and 17% have spent at least 2 - 3, 4 - 5, and more than 5 years in the company, respectively.

**Table 1.** Sample demographic (n = 192).

Characteristics	Group	Frequency	Percentage
Gender	Male	56	29.1
	Female	136	70.8
Age	20 - <30	68	35.4
	30 - <40	57	29.6
	40 - <50	48	25
	>50	19	9.8
Income	2 - <3 million IDR	5	2.6
	3 - <4 million IDR	26	13.5
	4 - <6 million IDR	68	35.4
	>6 million IDR	93	48.43
Education	Elementary School	5	2.6
	Junior High School	22	11.4
	Senior High School	113	58.8
	Undergraduate	57	29.7

This research measures four variables including network capability, market information accessibility, successful collaboration innovation, and sales growth of start-ups. Data were analyzed using SEM-AMOS. The measurement uses a unidimensional test because the indicator is in the form of the goodness of fit generated directly or indirectly, or causally. This is followed by the maximum estimation technique. Convergent validity is also used to test the validity, while regression analysis was used to examine the one-way arrow relationship.

### 3.2. *Operational and Indicator Development*

This research has four variables including network competence, market information accessibility, successful collaboration innovation, and sales growth. Network competence is how start up deploy tangible and intangible assets that are interconnected with others. It has a three items scale consisting of sharing information, creating new value, and unifying commitment (Ganjeh et al., 2020; Parida et al., 2017; Peemanee, 2022). Also, market information accessibility is how companies actively cooperate with participants, market their products, and reach out to consumers. It has a six-item scale including establishing cooperation, seeking for latest market information, using information technology to reach consumers, creating products that are easily accessible, seeking access to share knowledge with SMEs, sharing access to information on capital and raw materials (Kumar, Singh, & Shankar, 2016) and (Connell & Voola, 2007). Successful collaboration innovation successful collaboration innovation is the combination of consumer needs, competencies, knowledge, and technical opportunities carried out between business actors. It has a six-item scale comprised of offering products according to market demand, designing products with customer adaptation, using current technology, creating popular products in the market, joint service to customers, and developing new ideas (Amentie et al., 2017; Sugiyarti et al., 2017). Furthermore, sales growth is how to increase sales of start-up SME. It has a five-item scale consisting of an increase in product sales, sales targets, market coverage in three years, the number of customers, and revenue (Hendrayati & Gaffar, 2016; Sin, Tse, Yau, Chow, & Lee, 2005). The measurement uses a Likert scale with a range of 1-10 from strongly disagree to strongly agree.

#### 4. RESULT AND DISCUSSION

The first step is to prepare AMOS software by eliminating abnormal data from the sample list, then make a screening, trimming, and outliers on respondents' answers. A total of 192 out of 280 respondents are selected to obtain the goodness of fit data. The AMOS Normality value and Table 1 show that the scale requirements for the *c.r* skewness and kurtosis are  $< -2.548$  and  $< +2.548$ , respectively. The multivariate normality of 2.543 indicated that the normal data are 192 start-ups through the AMOS SEM process.

**Table 2: Construct Validity**

Indicators	Normalized		Factor loading	$\alpha$ -Cronbach	CR	AVE
	<i>c.r.</i> skewness	<i>c.r.</i> kurtosis				
Network competence				0.861	0.917	0.715
1. Always share information	-0.213	-1.842	0.770			
2. Always create new value	-0.579	-2.569	0.680			
3. Always join the commitment	-1.417	-2.440	0.680			
Market Information Accessibility				0.815	0.942	0.759
1. Looking for the latest market information	-1.246	-1.996	0.630			
2. Establish cooperation to find potential market access	-0.973	-2.471	0.730			
3. Use information technology to reach consumers	-0.757	-2.367	0.660			
4. Create products that are easily accessible to consumers	-0.084	-1.734	0.760			
5. Find access to share knowledge with SME	-1.030	-1.671	0.710			
6. Sharing information on access to capital and raw materials	-0.127	-2.345	0.760			
Successful Collaboration Innovation				0.821	0.938	0.722
1. Offer products according to market demand	-0.924	-1.224	0.700			
2. Design products with customer adaptation	-1.501	-0.639	0.720			
3. Use current technology	-0.735	-1.665	0.720			
4. Create a popular product in the market	-1.046	-1.461	0.700			
5. Joint service to customers	-0.769	-1.586	0.740			
6. Develop new ideas for product development	-1.367	-0.562	0.670			
Sales Growth				0.756	0.922	0.718
1. Product sales increase	-1.215	-2.202	0.720			
2. Sales volume increases	-2.200	-2.354	0.670			
3. Market coverage increases	-1.266	-1.816	0.740			
4. The number of customers is increasing	-1.288	-2.283	0.750			
5. Income increased	-1.620	-1.383	0.680			
Multivariate normality		2.543				

##### 4.1. Construct Validity

The minimum loading factor and Cronbach values are 0.6 and 0.7, respectively. Table 1 shows that the loading factor is used to measure the AMOS model and the Cronbach is obtained through SPSS. To measure the questionnaire, it is necessary to test the validity because the variables indicators are built based on theoretical research. The smallest loading factor and Cronbach values are 0.630 and 0.756, respectively. This shows the data can proceed to the next step of measurement. The results showed that network competence had a Cronbach Alpha, composite reliability, and AVE of 0.861, 0.917, and 0.715  $> 0.70$ , respectively, while market information accessibility had 0.815, 0.942, and 0.759  $> 0.70$ . Furthermore, successful collaboration innovation had a Cronbach Alpha, composite reliability, and AVE of 0.821, 0.938 and 0.722  $> 0.70$ , respectively, while sales growth had 0.756, 0.922, and 0.718  $> 0.70$ .



Table 2 shows that the AMOS model test has a significance, chi-square, and probability value of  $< 0.05$ , 199,074, and 0.36, respectively. This indicates the assumptions met or fulfilled the requirements. The TLI, GFI, AGFI, CFI, and RMSEA values are 0.975, 0.908, 0.883, 0.978, and 0.33, respectively. All values are within the specified limits, indicating that the research model is accepted and meets the standards set to examine the relationship between network competence, market information accessibility, successful collaboration innovation, and sales growth. The adequacy of the data processing shows a holster value of 189 to 202, which means there is a goodness of fit suitability between the empirical and hypothesized model.

In the AMOS model, the results of the critical ratio parameter support all hypothesized relationships. H1a shows that market information accessibility positively affects the successful of collaboration innovation. (Peemane, 2022) and (Amentie et al., 2017) emphasized the search for new market information makes start-ups compete for collaboration innovation. Also, the use of information technology is needed to expand consumer desires (Omar, Lo, Tan, & Siron, 2010). In product innovation, start-ups collaborate with others to make it easier for them to reach consumers in various parts of the world, particularly through the internet (Li, Li, Suomi, & Liu, 2021). Sharing access to knowledge makes it easier for new companies to innovate and expand their market (Slater & Narver, 2000). Moreover, sharing access to capital and raw materials, which is the biggest problem for start-ups tends to automatically strengthen collaboration innovation (Gelderman, Semeijn, Ter Avest, & Peeters, 2020). H1b shows that all these indicators help new companies to achieve superior sales growth, sales volume, market coverage, and increase the number of customers, as well as income (Nuryakin, Aryanto, & Setiawan, 2018).

H2a shows there is a positive influence between network competence and market information accessibility. This indicates that business actors who share information tend to increase market information accessibility (Chierici, Tortora, Del Giudice, & Quacquarelli, 2020). Research by (Aleksić, Rangus, & Gomez, 2021) emphasized the ability to create new values help to improve the accessibility of market information among entrepreneurs. According to (Li et al., 2021), enthusiasm to build a shared commitment creates strong market information for start-ups. H2b indicates that network competence positively affects sales growth. The ability of entrepreneurs to form a broad network by sharing information tends to make start-ups achieve superior sales growth (Nuryakin, et al., 2018). According to (Ferreira, Braun, Carvalho, Abrantes, & Sydow, 2022), the increase in new values tend to develop the breadth of the network and make companies sell their products on various platforms. The formation of a shared commitment, allows start-ups to work together, particularly in terms of suppliers, consumers, and sales (Nuryakin, 2020).

H3 shows a successful collaboration innovation positively affects sales growth. This can be executed by offering products according to market demand, designing products with customer adaptation, using the latest technology to expand sales and consumer coverage, creating popular products in the market, providing maximum service, and developing new ideas for products. All these indicators affect sales growth with an increased product sales, sales volume, market coverage, number of customers, and revenue (Ferreira et al., 2022).

**Table 3:** Results of the relationship between variables

No	Relationship between variables	Standardized Regression	P	Results
1	Market information accessibility → collaboration Innovation	0.269	0.026	H <sub>1a</sub> supported
2	Market information accessibility → sales Growth	0.216	0.003	H <sub>1b</sub> supported
3	Network competence → market information accessibility	0.274	0.000	H <sub>2a</sub> supported
4	Network competence → sales growth	0.171	0.000	H <sub>2b</sub> supported
5	Collaboration innovation → sales growth	0.336	0.000	H <sub>3</sub> supported

Notes: chi-square: 199.074, p: 0.36 AGFI: 0.883, GFI: 0.908, TLI: 0.975, CFI: 0.978, RMSEA: 0.033, Hoelter: 189

#### 4.2. Pathway Analysis

There are two paths to measure the indirect relationship between the three variables to ensure start-ups achieve superior sales growth. Based on the sequence, the first is through network competence, market information accessibility, and sales growth having a mediating effect value of 0.238. The second path is through market information accessibility and successful collaboration innovation with a mediation effect value of 0.166.

**Table 4:** Intermediation effect to improve marketing performance

No	Pathway to improve marketing performance	Direct effect value			Intermediation effect
		1	2	3	
1	Network Competence (1) → Market Information Accessibility (2) → Sales Growth	0.461	0.210		0.238
2	Market Information Accessibility (1) → Successful Collaboration Innovation (2) → Sales Growth	0.522	0.359		0.166

## 5. CONCLUSION

In this research, market information accessibility is proposed as a new concept, and it is supported by successful collaboration innovation bridges the gap between network competence and sales growth. This model is defined as a relational marketing guide that maximizes the network, particularly the internet to ensure start-ups achieve superior sales growth. To develop the internet, entrepreneurs need to share information, create shared value, and always maintain a commitment to seek and access new markets. This makes it easier for start-ups to have access to banking, raw materials, and consumers. Network competence plays an important role in creating interaction and convenience for business actors. This research is supported by (Mu, 2014) and (Parida et al., 2017) that SMEs have competence and strategies to achieve superior sales growth.

Market information accessibility and rapid technology tend to enhance successful collaboration innovation. The openness of this information makes it easier for start-ups to gain new knowledge by using networks, particularly online platforms to fulfill customer desires and develop new ideas for the product. However, successful collaboration innovations help SMEs to increase sales targets,

market size, customer coverage, and revenue. The result is in line with (Shah et al., 2019) and (Amentie et al., 2017).

This research aims to show the theoretical and empirical models built on theories related to network competence, market information accessibility, and successful collaboration innovation as well as how they help start-ups achieve superior sales growth. Research (Awang, Said Asghar, & Subari, 2010) indicated that market information accessibility improves business networks when collaboration capabilities are unique. Accessibility is an alliance partner and reconfiguration of business performance (Czakov, 2009). According to (Sharma & Sheth, 1997) and (Sheth & Atul Parvatiyar, 2002), relational start-ups become successful when it builds relationships between suppliers and consumers with symbiotic marketing as well as alliance strategies.

## 6. MANAGERIAL IMPLICATION AND FUTURE RESEARCH

This research aims to analyze the relationship between network competencies to ensure start-ups achieve superior sales growth and survive in intense competition. Also, it examines market information accessibility and the success of collaboration innovation as intervening variables. The results showed that market information accessibility and successful collaboration innovation positively affect the sales growth of start-ups. The empirical model also provides theoretical and conceptual contributions to ensure Indonesian SMEs achieve superior performance by disseminating network resources and accessing information. This shows that it is important for start-ups to always maintain their social relations in accessing market information and product innovation capabilities.

There are several limitations and suggestions because this research was only conducted on start-ups in East Kalimantan, Indonesia. Start-ups in East Kalimantan are just developing, needing support to be able to increase their sales from stakeholders. Some of the weaknesses of this study can be further developed and used as role models for further research, such as further review needs to be carried out on SMEs in all provinces of the country. Also, it needs to be thoroughly executed because there are limited samples and several problems in the data can be detected in the outlier and normality tests. This research is still heterogeneous in all start-ups encountered. Further review needs to focus on companies with homogeneous characteristics.

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