

## FACTOR ANALYSIS OF THE PHENOMENON OF MASS LAYOFFS AT STARTUPS: MIXED METHOD APPROACH WITH STRUCTURAL EQUATION MODELING

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### Article Info

#### Article History:

Received 4 Okt, 2022

Accepted 10 Nov, 2022

#### Keywords:

Startup

Layoff

Venture capital

PLS SEM

### ABSTRACT

Massive layoffs have occurred amid the rapid growth of startup companies in recent years. This study aims to explore the factors that play a role in the phenomenon of massive startup layoffs. This research use mixed method approach because it is still early to understand the problem. Structured approach is used to construct phenomena through secondary data. From the research results on these variables, results and conclusions are drawn that the phenomenon of startup layoffs is multifactor. The business model that relies on venture capital funding, the priority of growth at the expense of cash flow, and the high cost of startup employees are factors that trigger startups to adopt a mass layoff strategy when macroeconomic factors make venture capital reduce funding and make market conditions unfavourable to grow. While from statistical analysis using PLS-SEM show that funding and startup industry have significant effect on the number of layoff. This research can be a starting point for describing the phenomenon of mass startup layoffs, but it is only limited to exploratory studies related to variables that contribute to the phenomenon. Further research is needed to delve deeper into other factors that make startups more vulnerable to adopting layoff strategies

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### INTRODUCTION

The growth of Indonesian startups in 2019 was ranked fifth in the world after Canada, India, the UK, and the United States. This growth is also accompanied by the growth of startups based on unicorns and decacorns from Indonesia, meaning that the quality of startups in Indonesia can compete globally with a valuation of more than 1 million US dollars and more than 10 million US dollars (Kominfo, 2020). However, recently there has been a reverse phenomenon, namely the termination of employment (layoffs) and changes in the business strategy of several Indonesian startups. Some startups that do

massive layoffs include Tanihub, Link aja, etc. This phenomenon is interesting to study in more depth, seeing the relatively short business cycle and changes in investor behavior to invest in new startups. Based on CNBC (2022), the phenomenon of layoffs or layoffs at startups can be seen from several aspects, including: first, a business strategy that is not right at the beginning, such as burning too much money. Second, there are not many skilled IT human resources in Indonesia, so high costs are needed, and global issues such as the outbreak of the Russia-Ukraine war and the dynamics of covid 19 are still present.

The declining performance of startups can be seen as impacting the decline of all businesses that use technology-based. Therefore this phenomenon can be categorized as a revolution in the startup world, which will filter out what startups can survive and cannot. Initial startup growth was driven by ample funding from investors and powerful strategies to encourage growth in various ways, even at high costs (Djaja, 2019). However, the condition of available human resources is still limited, so the financing offer is also high. The phenomenon of massive startup growth is not balanced with the availability of qualified human resources. Macroeconomic factors such as the spread of the COVID-19 virus and the Ukraine-Russia war outbreak have influenced the development of startups globally. The fluctuating virus has both opportunities and threats to startup survival, such as changes in consumer behavior toward health, hygiene, and lifestyle mindsets (A. Ika, Fahrika. Juliansyah, Roy, 2020). The macroeconomic factor that has been very prominent lately is the outbreak of war between two countries which has resulted in the supply of raw materials for wheat and mining as well as supply chain relationships for other raw materials between several countries. It triggers economic contraction in several countries, affecting global investors' purchasing power and behavior (Nikensari, 2018).

On the other hand, the bubble burst phenomenon is said to be the driving force behind many startups that have gone out of business lately. The bubble burst is the emergence of many new startups and high economic growth but a relatively rapid decline in market supply. So that the supply in the market no longer gets a response / high purchasing power, which causes the product/company to experience a decrease in demand (Nurhadi, 2022). These factors need to be studied in depth to discover startups' growth and defense patterns. Then conclusions can be drawn as to what kind of startups can survive amid the layoff phenomenon that is currently happening, even though startups have an essential role in the growth of MSMEs and the economy in Indonesia. Although several things threaten and disrupt MSMEs, there are also positive roles, such as helping MSME business growth and processes increase rapidly, according to the type of business suitable for similar startups (Sharma, 2020).

This study will be carried out by observing the startup layoffs phenomenon and make confirmation of the factors that affect the startup layoff phenomenon. Observations for this study focused on general cases in public to better understand influencing factors. In addition, researchers try to understand how these layoff factors impact changes in startup strategy behavior. So it can be concluded that the startup strategy is to quickly adapt to increasingly uncertain global conditions.

## **LITERATURE REVIEW**

### **Startup Companies**

A startup is a technology-based startup company that is relatively new in operation. According to (Mardi Arya Jaya, Ridi Ferdiana, and Silmi Fauziah, 2017), a startup is a company that is initiated and designed to find a new or appropriate business model for market conditions or the intended stakeholders. Some startups in Indonesia can be classified in several fields, such as agriculture, travel-accommodation, and education. Startups engaged in agriculture, such as Tanihub, Vegetablebox, and Igrow. Startups in the accommodation travel sector include traveloka and tiket.com. Educational startups such as Quipper, Zenius, and Ruangguru. The role of a startup in business development is vital as a medium for expanding market expansion and even facilitating the management of a business. Few startups become businesses that can improve the community's economy because of the large number of workers absorbed (Nastiti, P., Nugroho, E., & Ferdiana, R., 2015).

### **Business Model Startup**

The startup business model is generally a technology-based company that produces software to create, deliver, and capture added value (Alesander, 2010). A startup's business model is needed to provide a view of the business processes that will be carried out and planned or even explain the ongoing business. An example is a startup that is engaged in the form of a business to help analyze problems and find solutions.

New startups can use business models to design forms that sync with their startup conditions (Mardi Arya Jaya, Ridi Ferdiana, Silmi fauziah, 2017). A startup needs a perfect example of business to increase competitiveness and achieve its ultimate goal (Uzzaman, 2015). Supporting factors for startup success mean good business examples that can convey companies' views about how the market responds to their products, weaken the competitiveness of competing companies, and encourage alliances to use competing companies (mutualism) to form products that can meet market needs. These factors can be the key for the company to win the competition in the market.

### **Macroeconomic Factors**

Macroeconomics is the study of economic discourse as a whole. Macroeconomics describes economic changes that affect many societies, companies, businesses, and markets. Macroeconomics can be used to analyze how best to influence policy goals such as economic growth, price stability, employment, and achieving a sustainable balance sheet. Macroeconomics is closely related to state finance issues. Economic changes in a country will impact a company and its market. Macroeconomics can affect economic growth, employment, price stability, and the achievement of equilibrium (Veritia, S.E., M.M. et al., 2019). Global issues currently influence global policies, such as covid-19, the Russia-Ukraine war, and other environmental issues. Since the emergence of Covid-19, various countries have taken policies to reduce the number of spreads so that it affects all forms of business and business in a country. The Russia-Ukraine war is not expected to involve other countries. However, the global impact is the primary raw materials these countries have, such as wheat, mining, and oil. Hence, some countries have to take a strategy to keep supplies running without getting involved in a war between the two countries. The next global issue is the environmental issue currently being felt globally, such as the reduction in green space and the demand for

behavior change to reduce carbon so that environmental sustainability is maintained (Berry A. Harahap et al., 2018).

## **RESEARCH METHODS**

This study uses a combination of the qualitative-quantitative sequential exploratory design method, which aims to map the problem qualitatively and is strengthened by quantitative analysis (Sugiyono, 2017). This study uses qualitative and quantitative secondary data. Qualitative data comes from journal articles, books, news, interviews, and personal opinions from startup actors in public spaces such as social media. Quantitative data was obtained from the data aggregator website and search engines. Quantitative data complement qualitative data, which aims to strengthen qualitative data. The quantitative data is panel data on startup layoffs from 2020 – 2022 from various startup companies worldwide.

To identify qualitative data that is relevant to the research problem, the researcher uses a structured approach from Webster and Watson (2002), which includes

1. Searching using relevant keywords on well-known journal/news sites;
2. Selecting publications/data that match the criteria;
3. Quickly scan publications/articles through titles, abstracts, and content relevant to the research problem; and
4. Study and analyze in detail the selected publications/articles.

Search using keywords including but not limited to “Startup layoffs,” “Startup Bubble,” and “layoff.” The scope of the search is limited to reputable journal databases, search engines, and data mining from social media, LinkedIn, and Twitter.

The collected qualitative data is then categorized into three main categories, namely:

1. Literature review on startups: publications related to startups covering business models, nature, and mechanisms of startups. This information becomes the basis for researchers as a starting point for obtaining an overview of startups as research objects.
2. Information related to layoff phenomena: publications related to startup layoff phenomena and related matters regarding startup layoffs. This information provides insight into the variables related to the research problem.
3. Relevant macroeconomic information: publications related to external macroeconomic factors related to the startup business climate. This information is helpful in providing an overview of macroeconomic dynamics in the phenomenon being studied

After the data is collected, the stages of data analysis are as follows:

1. Qualitative Analysis

Qualitative analysis is carried out by studying the variables formed from the literature study and the qualitative data collected. The opinions of startup actors and those related to the mass layoff phenomenon are observed, filtered, and synthesized to form a narrative of factors that play a role in the mass layoff phenomenon.

2. Formulating variable framework

The variable framework is needed to determine the logical structure of the research and determine hypotheses between variables. The variable framework is determined based on previous research and empirical evidence from observation and expert opinion obtained from qualitative data collection. The formed variable framework shows a description of the relationship between variables, which will be used as the

basis for quantitative analysis. Based on the observations and data analysis, a variable framework is formed as follows:

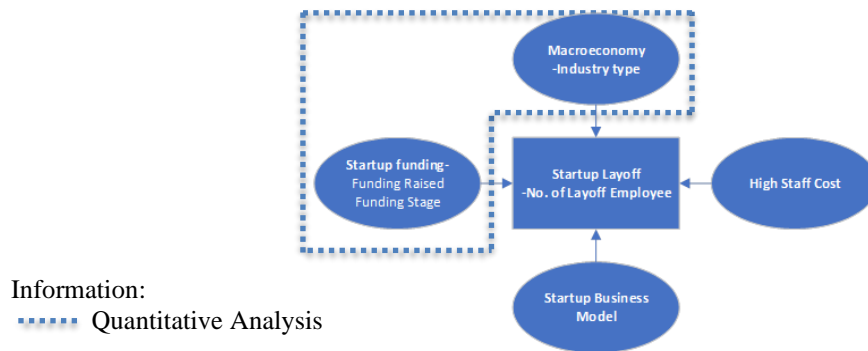


Figure 1. Variable Framework

### 3. Quantitative Analysis

Quantitative analysis to be carried out is descriptive analysis and statistical analysis. Statistical analysis was conducted to test the variables using Partial Least Squares - Structural Equation Modeling (PLS-SEM). This method was chosen because the research is predictive and exploratory (Yamin, 2021). Furthermore, the advantages do not require a normal distribution (Harahap, 2020). The statistical analysis stage uses the smartPLS application with the following stages:

#### a. Predictive Relevance Test

Predictive Relevance is useful for testing the accuracy of the model. Predictive relevance is measured using the value of  $Q^2$ . The value of  $Q^2 > 0$  describes the data point the model can predict well. A predictive relevance test is carried out using the blindfolding technique in smartPLS

#### b. Hypothesis test

The research hypothesis was formed after knowing the factors involved; the hypothesis was obtained after qualitative analysis as follows:

Hypothesis 1: There is a significant effect of funding aspects on the number of startup layoffs.

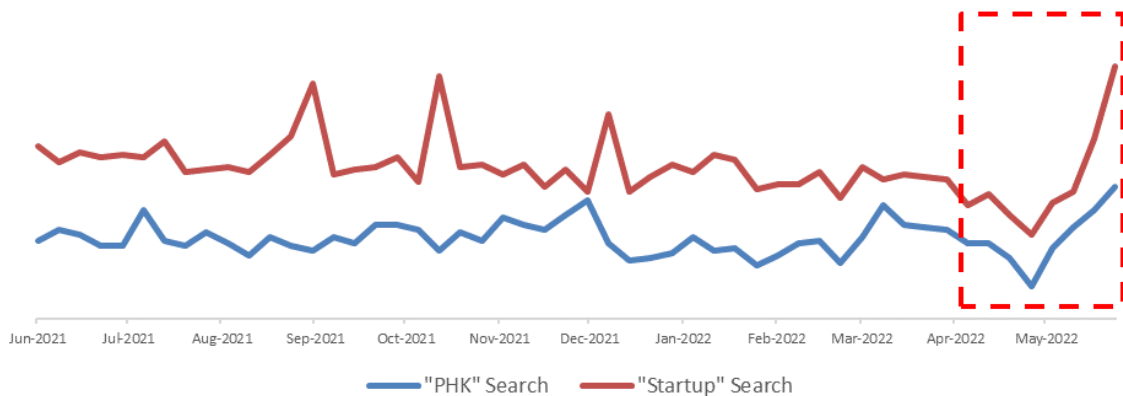
Hypothesis 2: There is a significant effect of the type of industry on the number of startup layoffs.

## RESULTS AND DISCUSSION

### Qualitative Analysis

#### 1. Layoff Strategy is Implications from Multifactor

The upward trend of startup layoffs began to rise this May. The increase in searches for the words "PHK" and "Startup" rose sharply in May in line with the hectic news regarding layoffs in the startup industry.



Sumber: (Google, 2022)

Figure 1. Number of Searches "PHK" and "Startup" keyword in Google

This public interest in the issue of startup layoffs led to various discussions from various sides. The government and several business leaders in the startup and conventional businesses have various points of view regarding the layoff strategy taken by startups. The Minister of Communication and Informatics argues from the point of view of the adaptation phase. Businesses that are still trying to form a good concept must make various adjustments to survive in the era of digital competition that is constantly evolving (Haryanto, 2022). Meanwhile, the CEO of MNC Group believes that the cash flow management strategy at the expense of profit has failed to gain market share, so funds from investors have decreased and forced startups to adopt a downsizing strategy (Nurrahman, 2022). CNBC believes that the cause of the layoffs is an attempt to reduce operating costs amid the declining flow of funds from investors over fears of a spike in inflation in the United States (Dewi, 2022). This opinion is in line with Wheelen et al. (2018), where the retrenchment strategy is taken when the company has a weak competitive position and is restructuring by reducing employees. This strategy is the choice for several reasons. Companies that implement employee reduction in their retrenchment strategy to narrow their business focus are proven to be able to improve their performance. However, the reduction of employees must be carried out carefully because situations can occur where the retrenchment strategy will further weaken the company (Wheelen et al., 2018).

## 2. Venture Capital Funding and Growth Priority Over Sustainability

The venture capital funding model of startups that dominates the technology sector today focuses on exit strategies – namely, how founders and funders sell their investments in startups (Lemley et al., 2021). In line with Blank's definition of a startup, it is a temporary organization that is not planned to continue to exist (Blank, 2013). This is because most startup business cycle planning adopts the entrepreneurial innovation model from Aulet, which consists of 4 stages: startup, transitioning, scaling, and exit (Aulet, 2013). In contrast to conventional business, which is more in line with more classic models such as business life cycle theory. Although the decline stage is mentioned, the focus of business establishment is not at the decline stage. A funding model that focuses on an exit strategy gives venture capitalists a clear focus on the time limit of their funding (Gomper, 1999). This will pressure the startup to grow at a predetermined scale quickly. So startup growth indicators, especially those using venture capital funding models, are more focused on non-financial indicators such as

the number of employees (Davila et al., 2003). Currently, a more contemporary startup valuation method is being developed to solve the regular harmful cash flow practice to gain market shares, such as Cost to Duplicate, acquisition rate, and Market Multiple (McLure, 2021).

Focus on increasing growth above profits for early-stage startups, forcing startups to adopt a cash-burning strategy to meet investors' growth expectations. As a result, they have minimal restrictions on spending behavior. This strategy has been very successful in the era of abundant liquidity for startups in the last five years. The high operating costs put pressure on the balance sheet so that startup liquidity must be adequate in the future until they make a profit or get new funding. The startup's resilience to negative cash flows is measured by the burn rate ratio, liquidity divided by costs over a certain period (Kemell, 2020). The availability of this liquidity is highly dependent on external parties such as venture capital when the company has not yet posted profits, so it is very vulnerable to adopt a retention strategy if funding is unstable. While venture capital invests less in good ideas and teams, it invests more in good markets (Zider, 1998), so the availability of startup funding from venture capital is highly vulnerable to macroeconomic volatility.

### **3. High Staff Cost**

The IT and computer sector is an industrial sector with a salary above the average of other industries and is ranked 2nd in salary based on the industry sector. It is mainly dominated by startups (Jobstreet, 2021). For C-Level itself, the average startup sector salary is the highest compared to other sectors. Based on startup job positions sourced from the Monk's Hill Ventures Southeast Asia Tech Talent Compensation Report, the lowest salary for junior-level UI/UX designers reaches 8.7 million per month. The highest is for data scientists at 16.7 million per month. From the same source, the average salary for professionals in the startup industry is higher than in other industries due to several factors, including intense talent competition, high workload and demands, higher risk than established companies, and higher salaries for technical workers than workers non-technical (Monk's, 2021). Bank Indonesia predicts Indonesia's digital economy to grow 650% by 2030 (BI, 2021), so it requires digital talent to play a role in developing the digital economy.

The availability of digital talent in Indonesia is still not sufficient. Research from AWS and Alphabet, only about 19% of the entire workforce has digital skills. Meanwhile, 110 million new digital talents will be needed by 2025 (Burhan, 2022). Input from universities is also not optimal, considering that only 20% of universities in Indonesia have study programs in the fields of Information, Communication, and Technology. Tech Manager Robert Walters Indonesia also mentioned that apart from the lack of talent availability, the high turnover rate of up to 30% in startups causes high employee costs. A standard industrial practice when employees apply for salary at a new company is a salary increase of 15%-30% (Avego, 2021). The high turnover in the startup sector causes salaries to rise very quickly for the same position. So there is an increase in the market salary for job positions in high demand. High liquidity in startups and pressure to improve non-financial metrics for startups that have not yet recorded finances have given startups more financial space in offering salaries. Not infrequently, this more space causes the hijacking of startup employees because one of the causes of employee hijacking is the high demand accompanied by the scarcity of supplies in specific

industries, which in this context is very visible in the technology industry (Indeed, 2021).

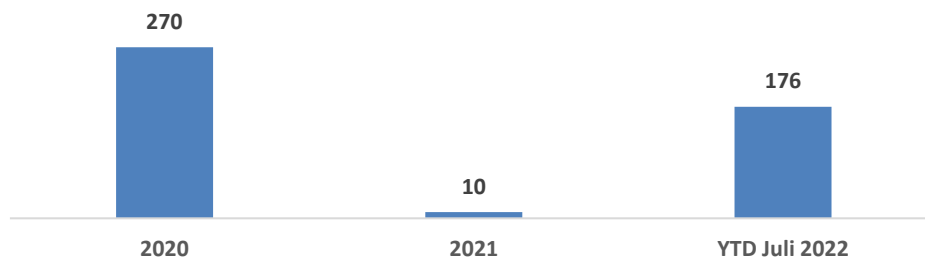
#### 4. Macroeconomic Factors

Macroeconomic factors affect all aspects of business, especially internal variables related to changes in external variables. Concerns about uncontrolled inflation caused the American central bank to adopt a tight monetary policy by raising interest rates. Along with a tighter interest rate policy, in December 2021, the Central bank announced it would indefinitely stop buying debt securities at the end of March 2022. The cessation of buying bonds, called tapering, has been proven in developing economies to cause global risk aversion, sharp and rapid exchange rate depreciation, price corrections for risky assets such as stocks, and capital returns to developed countries (Mishra, 2014). Rising interest rates make investors more risk-averse and adopt defensive strategies. Consequently, investors reconsider their investment decisions to move funds from riskier assets to safer ones. This makes investors rethink investing in venture capital, a venture capital portfolio that is a high-growth industry with high risk. The above factors cause a liquidity crisis in venture capital, making it difficult for startups to get funds.

### Quantitative Analysis

#### 1. Descriptive Analysis

- a. Startups companies executing layoff by year

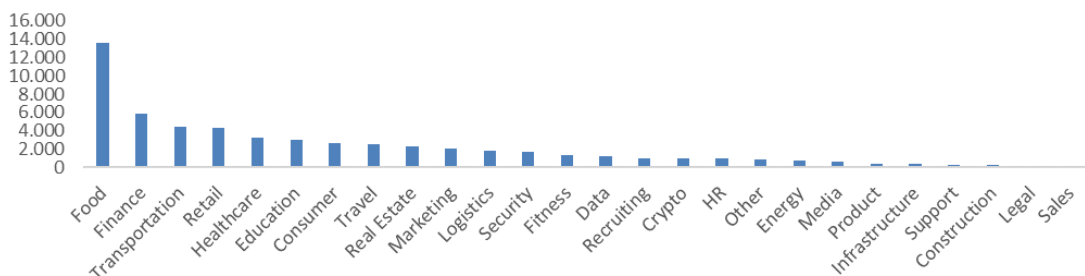


Source: layoff.fyi, 2022

Figure 2. Number of Startups Companies Executing Layoff by Year

In 2020 and YTD July 2022, the number of companies that made layoffs was higher than in 2021. This is because in 2020, startups were affected by the pandemic crisis, and in YTD July 2022, mass layoffs were due to the shadow of the global crisis. The low number of companies making layoffs in 2021 is because, by 2020, the pandemic has already been absorbed, so that in 2021 there will not be many layoffs.

- b. Employee laid off by startup industries



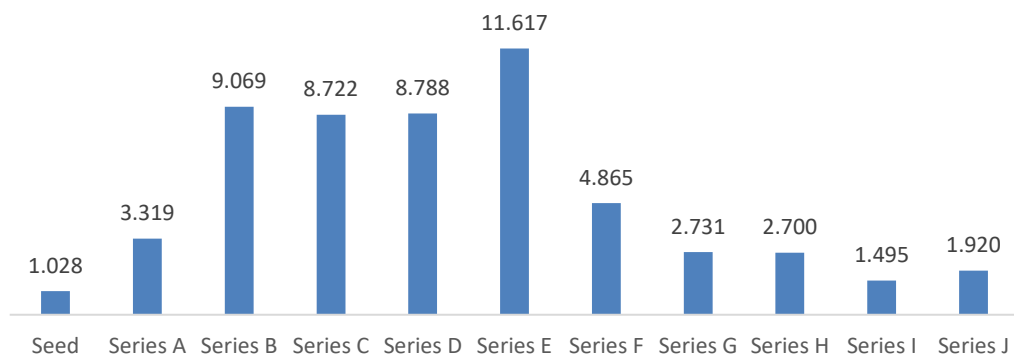
Source: layoff.fyi, 2022

Figure 3. Number of Employee Laid off by Startup Industries January 2020 - July 2022



The food industry ranks first in the number of laid-off employees. This is due to the accommodative barrier to entry for food startups if they are going to expand overseas. Rapid growth causes rapid employee growth, so the impact will be felt if a layoff occurs. One of the most significant contributors to the layoff of food startups is Getir, a food delivery startup from Turkey with 4,500 employees, almost 30% of the total layoff. The second largest position by industry is the financial sector. This is because the fintech sector initially was not as tightly regulated as the conventional financial sector, causing the high growth of fintech startups. The most significant layoff contributor from the financial sector is Paisabazaar digital bank from India, with 1,500 employees. The two companies implemented a layoff strategy to cut costs to maintain business continuity.

c. Employee laid off by funding stage



Sumber: layoff.fyi, 2022

Figure 4. Number of Employee Laid off January 2020 - July 2022

The number of startups that make layoffs based on funding shows that the most significant number of layoffs is in series E, followed by series B and series D. This data shows that startups that receive much funding do not have a layoff impact as significant as series J. This could be due to companies receiving series B funding to series E funding, which is medium-sized companies, so the financial resilience and customer base are still not firm. So startups are vulnerable to adopting a layoff strategy for cost efficiency. while companies that are more advanced in the funding stage mostly already have a mature market, so they can afford to avoid cost efficiencies to survive.

## 2. Statistical Analysis

This research employs the Partial Least Square – Structural Equation Modeling method. Based on the previous analysis, the following model was formed to illustrate the relationship between variables.

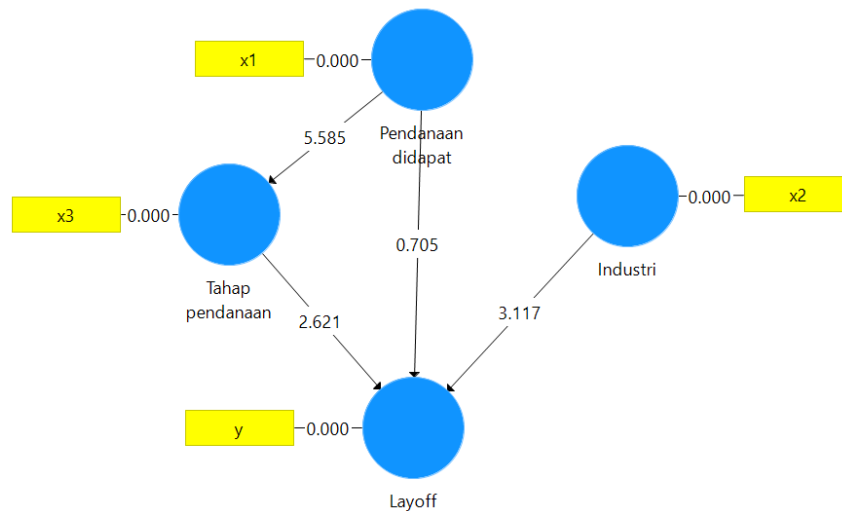


Figure 5. Startup Layoff SEM Model

**a. Uji Predictive Relevance**

Predictive relevance in smartPLS result shown in table 1:

Table 1. Predictive Relevance Test Result

	<b>Estimated Model</b>
SRMR	0.017
d_ ULS	0.003
d_ G	0.001
Chi-Square	1.535
NFI	0.991

The test results show the Standardized Root Mean Square Residual (SRMR) < 0.1 and the Normed Fit Index (NFI) > 0.8. This means that the model is a good fit.

**b. Hypothesis Test**

Result from hypothesis test using regression in PLS model show in table 2:

Table 2. hypothesis test result

	<b>Original Sample (O)</b>	<b>Sample Mean (M)</b>	<b>Standard Deviation (STDEV)</b>	<b>T Statistiks ( O/STDEV )</b>	<b>P Values</b>
Industry -> Layoff	-0.098	-0.089	0.031	3.117	0.002
Funding received -> Layoff	0.107	0.179	0.152	0.705	0.481
Funding received -> Funding stage	0.419	0.466	0.075	5.585	0.000
Funding stage -> Layoff	0.296	0.274	0.113	2.621	0.009
Funding received -> Funding stage -> Layoff	0.124	0.122	0.048	2.563	0.011

From the results of bootstrapping, it can be concluded that for hypothesis 1, there is a significant influence related to the funding aspect on the number of layoffs. Although the P value of funding is obtained for layoff above 0.05, the results of funding obtained -> Funding stage -> layoff shows a P value <0.05. So based on the results, it can be concluded that Hypothesis 1 H0 is rejected. Meanwhile, for Hypothesis 2, it can be concluded that H0 is rejected because the P value layoff

for the industry variable is  $< 0.05$ . Hence it can be concluded that there is a significant effect of the type of industry on the number of layoffs.

Industries have a significant impact because, during specific crises, some industries are more severely affected. The global pandemic crisis that has caused restrictions on mass mobility has affected industries that depend on the real sector, for example, the food industry, retail sector, property, travel, and logistics (ECB, 2021). Meanwhile, in 2022, the global economic slowdown caused by the Russian war, supply chain bottlenecks, and the shadow of inflation in developed countries led to rising interest rates which impacted the financial sector and slowed investment (World Bank, 2022) so that the results of statistical tests show that the type of industry significantly affects the number of employees in layoffs.

The funding aspect has a significant influence on the number of layoffs. Startups that receive operational funding from venture capital have a faster growth rate than companies that do not (Inderst et al., 2009). Prominent startups can potentially have more employees and a more significant impact if the company adopts a layoff strategy to save costs.

## CONCLUSION

Based on the results and data collected, it can be analyzed that high operational costs, startup dependence on venture capital funding, rapidly rising employee costs, difficulty in funding due to macroeconomic factors, and weak demand have caused startup companies to adopt a retention strategy, namely reducing the business volume to be able to grow their business. Macroeconomic factors became the initial trigger for the mass layoff. Macroeconomic factors cause difficulty in liquidity in the venture capital market and cause startups to adopt a retention strategy by cutting the number of employees. Cutting the number of employees is the most rational considering the high employee costs for startups due to several factors.

From the quantitative analysis, it can be concluded that the variable aspect of funding and the variable of the industrial sector has a significant influence. The funding aspect plays a role in the size of the startup related to the number of employees, so the impact of the layoff will be significant if the number of employees owned is also large. Meanwhile, the industrial sector has a significant impact because specific industrial sectors will be affected depending on the type of macro influence, so industrial sectors that are sensitive to the global crisis will be affected more strongly than those less sensitive to crises.

This research can be a starting point for describing the phenomenon of the fall of startups but is only limited to exploratory studies related to variables that play a role in this broad sense. In the future, it is necessary to conduct further research related to the variables discussed, such as the startup business model and macroeconomic factors on startup resilience. It is also necessary to conduct further research on the variables that make startups survive during unfavorable macroeconomic conditions.

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