

The Application of Risk-Based New Venture Technique for Startup Valuation (Case Study: Vee Naturals)

Maulidyah Nursaadah
School of Business and Management, Institut Teknologi Bandung

Taufik Faturrohman*
School of Business and Management, Institut Teknologi Bandung

— *Review of* —
**Integrative
Business &
Economics**
— *Research* —

ABSTRACT

The growth and evolution of the natural and organic cosmetics industry in Indonesia offers great opportunities for the natural-based cosmetics business, especially for Vee Naturals. Currently, Vee Naturals Company wants to increase its business scale. However, Vee Naturals is facing funding constraints. To overcome this issue, the valuation is done to calculate the selling value of the company to be offered to investors. In this paper, a new risk-based business assessment technique was conducted to provide objective calculation results. The method of new risk-based new venture technique can combine the points of view of investors in terms of risk and innovators in terms of company potential. The results of calculations using this technique show that the Vee Naturals company is at milestone 3 (sales channel acquisitions) after completing milestones 1 (market survey and prototype) and 2 (beta testing) with a valuation value of IDR 41.840.626 in pessimistic conditions, IDR 74.826.724 in most likely conditions, and IDR 273.686.759 in optimistic conditions. And when normal risk is applied, the valuation of the Vee Naturals company will reach IDR 199.266.252 for pessimistic conditions, IDR 525.164.130 for most likely conditions, and IDR 1.609.059.546 for optimistic conditions.

Keywords: risk-based new venture technique, startup valuation, cosmetics industry, Indonesia

1. INTRODUCTION

1.1. Background

In contrast to some business sectors that have suffered setbacks, the cosmetics sector has risen significantly in recent years. According to Forbes, the cosmetics industry earns approximately US \$445 billion a year. The value of the world cosmetics industrial market from year to year has continued to rise since 2018 and is predicted to continue to rise until 2025. The data below shows the market value of the world's

cosmetics industry stands at 507.8 billion U.S. dollars in 2018 and is expected to rise to 758.4 billion U.S. dollars by 2025 (Statista, 2018).

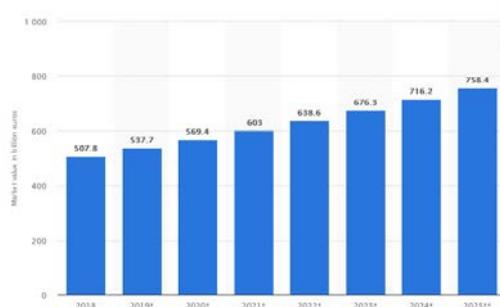


Figure 1. Value of the cosmetics market 2018-2025

According to Grandviewresearch.com (2019), the global demand for organic personal care is increasing every year, along with consumer knowledge of organic care products, including skin care, oral care, body care, and cosmetics. MRFR predicts that the Global Natural and Organic Cosmetics Market will witness a stellar CAGR of 9.60% during the forecast period (2018-2023) and reach a valuation of over USD 25.10 Billion (Marketresearchfuture.com, 2021). Based on L'oreal research (2018), 75% of Indonesian women prefer to buy brand beauty products made with organic ingredients, for all cosmetic categories.

The continued growth and evolution of the natural and organic cosmetics industry offers good opportunities for the natural-based cosmetics business, especially Vee Naturals. Currently, Vee Naturals Company is in the stage of wanting to increase the scale of their business; therefore, it is necessary to conduct a valuation to calculate the selling value of the company to be offered to investors by taking into account the potential business and risk of the Vee Naturals company using the risk-based new venture technique. Currently, Vee Naturals is at milestone 3 (sales channel acquisition) after completing milestones 1 (market survey and prototype) and milestones 2 (beta testing).

1.2. Objectives

This research's objective is to value the business run by Vee Naturals Company at milestones 3 (sales channel acquisition) and to find out the results of the valuation of the business run by Vee Naturals Company at milestone 4 (normal risk).

2. LITERATURE REVIEW

There are several methods to evaluate a company's startup. However, some methods are used for pre-revenue valuations, meaning valuations will be made before startup companies receive revenue, while others are more relevant to post-income valuations. The assessment methods reviewed in this paper are the Berkus Method, the Scorecard Valuation Method, the Venture Capital Method, the Risk Factor Summation Method, the First Chicago Method, the Discounted Cash Flow Method, and the Risk-Based New Venture Technique.

2.1 Berkus Method

The berkus method is a valuation based on the assessment of five key success factors. This method emerged in the mid-1990s for the valuation of early-stage companies. This method takes into account some of the most important risk factors and attempts to assign an arbitrary value to each of the criteria listed (Mahajan, Nallari, and Vyas, 2021). This method no longer applies, as most people will use actual revenue to project value over time. Therefore, this irrelevant method is used in this paper because the case presented wants to capture value not only for pre-income but also for future value.

2.2 Scorecard Valuation Method

The scorecard Valuation method or bill payne method, is a method that considers six criteria in its assessment, which are the following: management (30%), size of opportunity (25%), product or service (10%), sales channels (10%), stage of business (10%), and other factors (15%) resulting in a total of 100% (Stéphane Nasser, 2016). Therefore, this method was not chosen in this paper because it is for pre-money valuation. Therefore, this method is not used to valuation Vee Naturals companies.

2.3 Venture Capital Method

The venture capital method is a method that does not rely on subjective judgment different from the methods that have been described before, because this method depends on the investor's point of view. As stated by demodaran (2001). Investor will determine the maximum price is willing to pay or known as terminal value by considering the estimated company's income based on data from the same industry and is running. However, this method is not used in this paper for the same reason as the scorecard valuation method.

2.4 Risk factor summation Method

The Risk Factor Summation Method is a development of the Berkus method. The valuation calculation of this method is based on a base value adjusted for 12 standard risk factors (Almanza, 2017). Each factor is rated with +2 very positive for growing the company and executing a wonderful exit, +1 positive, 0 neutral, -1 negative for growing the company and executing a wonderful exit, and -2 very negative. For each +1, a positive of \$250,000 is added to the company. +2 adds a positive of \$500,000, and -1 adds a negative of \$250,000; +2 adds a negative of \$500,000 (Payne, 2011). Because it has similarities to the Berkus method, it is also irrelevant to use in this paper as it uses too much subjectivity in judgment and sets a number limit for each factor in print.

2.5 First Chicago Method

The First Chicago Method is a method of calculating post-income valuation based on the weighted average of three valuation scenarios. This method creates three assessment scenarios. Stephane Nasser (2016) defines the worst case scenario, the normal case scenario, and the best case scenario. Each assessment is done by the DCF method or, if not possible, can use the internal return rate of the formula or with multiples to decide the percentage that reflects the probability of each scenario that will occur. However, this method is not suitable for the valuation assessment of this paper, because in the case of this paper the company assumed pre-revenue.

2.6 Discounted Cash Flow Method

Discounted cash flow (DCF) is a valuation method that uses predicted future cash flows to determine the value of an investment (Investopedia, 2021). This method is the basis of the risk-based new venture valuation technique. This method uses only one amount of discount rate and applies it along with the future cash flow projection by emphasizing the weighted average cost of capital (WACC). Therefore, the use of discounted cash flow methods in this paper will only be limited to basic concepts.

2.7 Risk-Based New Venture Technique

Risk-based new venture techniques are a development of discount cash flow methods. This risk-based valuation technique is considered a win-win solution for investors and entrepreneurs by using financial modeling to bind market-based assumptions through cash flow and is suitable for application to early-stage companies or new ventures. However, this method will analyze the risk of each stage of new business development and include it in the valuation calculation. This method involves an agreement between investors and entrepreneurs to reduce asymmetrical information between the two parties. Asymmetry is an obstacle that investors and entrepreneurs can face in new business value agreements (Vara, 2013). Therefore, it is necessary to minimize this information gap so that the perceived commercialization risk is similar for both parties.

3. CONCEPTUAL FRAMEWORK

The number of startups that managed to get funding at a very fantastic value is so large that the term "startup valuation" is tightly discussed by the community. Until now, there has been no absolute calculation to determine the valuation because, on the other hand, valuation also requires proof. However, in determining the startup value, one must take into account what components can be listed in the determination of

startup value. Because startups bring more complexity to assessment methodologies due to limited amounts of information, each startup has a unique process between each other, so they have different approaches to valuation calculations. Therefore, this paper is equipped with the conceptual framework presented in Figure 2, which serves as the basis of the method used as a guideline for the valuation assessment of Startup.

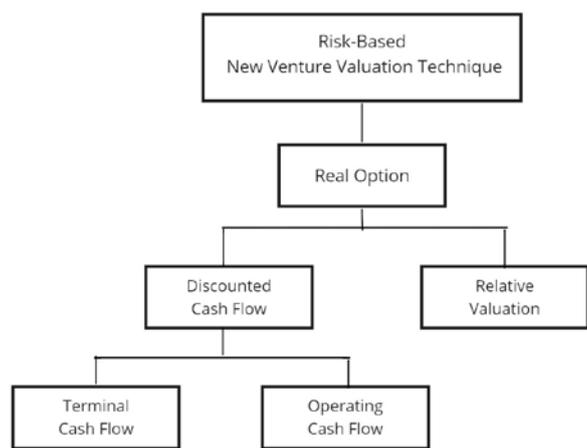


Figure 2. Conceptual Framework

3.1 Real Option

In general, the theory of real options is about decision making and uncertain value creation (Ruffino, 2014). The real option gives the right but not the obligation to make a decision. The implementation of this model comes with several limitations, namely (Damodaran, The Promise and Peril of Real Options, 2000). Because valuable underlying assets are not traded, they should be a tangible option such as a project. Asset prices are not discrete, and the model's variance is assumed to be known and stable over a finite number of lifetime options. And exercise is instantaneous.

3.2 Discounted Cash flow

Discounted cash flows is a fundamental valuation technique that underpins all other valuation techniques (Damodaran, Investment Valuation: Second Edition, 2001). Generally, the following equation can be used to express the present value of a single number:

$$PV = \frac{FV_n}{(1+i)^n}$$

This equation should be modified for valuation purposes, as the asset value is essentially the present value of all future cash flows (Damodaran, Investment Valuation: Second Edition, 2001). The equation is shown below:

$$DCF = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_n}{(1+r)^n}$$

3.3 Terminal Cash flow

Terminal cash flow is cash flow acquired at the time A project ends with residual value and working capital (Linda and S.B.Z. Fazli, 2005). In this paper, we will use the basic scenario model of stable growth, whereas the equation can be written as follows:

$$\text{Terminal Value} = \frac{CF_{t+1}}{r - g}$$

3.4 Operating Cash flow

According to Financial Accounting Standard Number 2 from 2004, operating cash flow is the cash inflows and cash outflows generated by operational activities, investment, and funding over a given time period. OCF has the following general equation:

$$\text{OCF} = \text{NOPAT} + \text{Depreciation}$$

While NOPAT is net operating profit after tax, It should be noted that OPAT is also known as earnings before interest and after tax which can be written in the equation as shown below.

$$\text{NOPAT} = \text{EBIT} \times (1 - T)$$

3.5 Relative Valuation

Relative valuation is the most common valuation approach used in the real world due to the fact that most valuations use a discounted cash flow basis (Damodaran, Investment Valuation: Second Edition, 2001). The basis of the relative valuation method is that the value of an asset is derived from the valuation of other comparative assets, which are standardized using common accounts such as income, cash flow, and book value. (Damodaran, Investment Valuation, 2002).

4. METHODOLOGY

4.1 Research Design

Start this research by describing the business issue identification within the scope of business work itself. Once business issues are identified, To take into account the valuation value of the company, research needs to go through many literature reviews before finally choosing which valuation techniques to use in this paper. Based on the literature review, the risk-based new venture valuation technique method was chosen as the best method to be used for this research. The author chose this method because, based on the Vee Naturals business cases, this is a new venture with limited historical financial data. The risk-based new venture valuation technique can minimize the

subjectivity within the valuation compared to other pre-revenue valuation methods such as the Berkus method, risk factor summation, and scorecard by adding the risk factor through the real option approach. The data needs to be collected for the specified valuation technique. Therefore, the data that will be required is the financial history of Vee Naturals, the growth rate of the cosmetics industry, revenue and cost of sales models for each product, assets acquired by the company, projected operating costs, and a summary of milestones. After collecting all the data, the author will process each piece of data gradually, and finally get a valuation result. Overall, the method is shown in Figure 3.

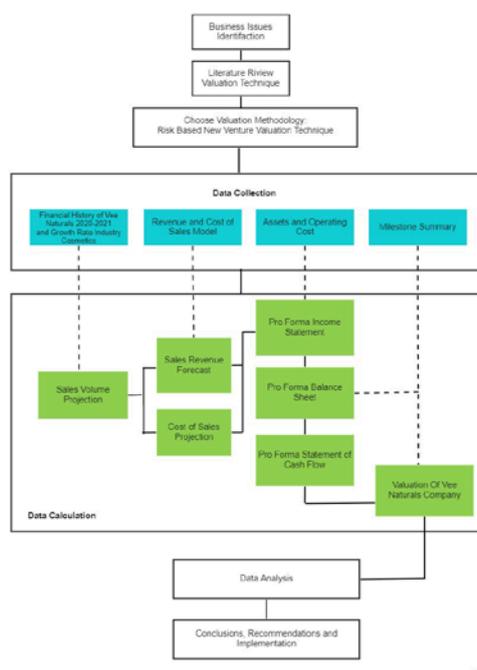


Figure 3. Research Design

4.2 Risk-Based New Venture Techniques

The chance of experiencing a loss as a result of an event is referred to as "risk." Risk is a phrase that refers to the likelihood of financial loss as a result of a specific incident (Widyatini, 2017). To apply risk-based valuation techniques, financial modeling and commercialization risks must be identified first. All risks are assumed into three categories along with how to be risk resolved by using possible milestones as shown in table 1.

Table 1. Classification of Commercialization Risk

Type of risk	Nature of risk	How is risk resolved	Possible milestones
Development	Can the product or service be built or delivered?	Features and benefits are measurable	Feasibility study Market Survey Prototype Pilot Manufacturing Patent
Customer acceptance	Is the right thing being built?	Target market's unmet needs match with features and benefits of product or service	Focus Groups Beta and/or pilot testing is complete Regulatory approval
Marketing & sales	Is the product or service available for purchase to meet sales goals?	Sales targets are met resulting in consistent positive operating cash flow	Sales channel in place Promotional programs Strategic sales partners Specific sales goals met

In assessing using a risk-based new venture valuation technique, cash flows are used to determine the value of the company. Operating cash flow is a key indicator of how well the new venture's business model is working. There are several steps included in the risk-based technique, which are (Vara, 2013):

1. determining the time period during which commercialization risk is considered to be minimal and normal risk can be applied (tn),
2. Determine the future value of the new venture at tn using DCF technique,
3. validating the result computed future value by using comparable.
4. Using real option principles to assign the risk factor for calculating the new venture's value at a specified time,
5. Modify and adapt the financial model for the specific new venture.

The purpose of this paper is to build a model that only considers the first until four of the six factors included in the revised Black Scholes Model (Vara, 2013). This is done using four steps, namely: (Vara, 2013):

1. DCF method as a first step to valuing the company.
2. Present the exercise price as an investment stage.
3. Presents an expiration time option using milestone.
4. measure value uncertainty using the discount rate factor.

One of the important points for using this technique is that the company must reach within three years because the projected financial model is set for 60 months.

5. DISCUSSION AND RESULT

5.1. Sales forecast

The calculation of sales volume is the most important thing to start the valuation process. However, in the forecasting process involving several possibilities that may occur in the future, so many calculations use assumptions to demonstrate things related to the possibility of the future.

5.1.1. Sales Volume Projection

In conducting sales volume projections, three assumptions are made in presenting sales volume projections, namely pessimistic, most likely, and optimistic. For pessimistic scenarios, the author targets growth of less than 20% of the most likely, and for optimistic scenarios, the author targets growth of more than 20% of the most likely. For most likely, The authors use historical data the average sales growth of Vee Naturals over the last one year to estimate the sales volume projection for the first year. For the second year to the fifth year, Vee Naturals' sales growth was assumed to use the assumption of monthly average growth data for the cosmetics industry from statista.com. In table 2, Vee Naturals' sales growth target is presented for each product.

Table 2. Sales Target Growth of Vee Naturals

Year	Veegloss			Veebalm		
	P	ML	O	P	ML	O
1	21,6%	27%	32,4%	19,2%	24%	28,8%
2	0,53%	0,66%	0,79%	0,53%	0,66%	0,79%
3	0,52%	0,65%	0,78%	0,52%	0,65%	0,78%
4	0,42%	0,52%	0,62%	0,42%	0,52%	0,62%
5	0,41%	0,51%	0,61%	0,41%	0,51%	0,61%

5.1.2. Pricing Model

After the sales projections are identified, the authors describe the pricing model that has been determined and set by Vee Naturals company. Veegloss and Veebalm are products offered by Vee Naturals, namely Veegloss at Rp. 55.000,00 and VeeBalm at Rp. 89.000,00 in the first year. From the second year to the fifth year, it is assumed that product prices will increase according to the inflation rate of 6.6% for personal care products.

5.2. Pro forma Income Statement

5.2.1. Cost of sales Vee Naturals

The cost of sales consists only of direct material use and direct labor costs. Overall cost of sales shown in table 3, 4 and 5.

Table 3. Cost of sales pessimistic

Cost of sales Pessimistic	Y1 M1	Y1 M2	Y1 M3	Y1 M4	Y1 M5	Y1 M6
Veebalm	Rp 475.310	Rp 566.570	Rp 675.351	Rp 805.018	Rp 959.582	Rp 1.143.821
Veegloss	Rp 822.858	Rp 1.045.030	Rp 1.327.188	Rp 1.416.628	Rp 1.722.619	Rp 2.094.705
Total	Rp 1.298.168	Rp 1.611.600	Rp 2.002.539	Rp 2.221.646	Rp 2.682.201	Rp 3.238.526

Y1 M7	Y1 M8	Y1 M9	Y1 M10	Y1 M11	Y1 M12	Y1
Rp 1.363.435	Rp 1.625.215	Rp 1.937.256	Rp 2.309.209	Rp 2.752.577	Rp 3.281.072	Rp 17.894.416
Rp 2.547.161	Rp 3.097.348	Rp 3.766.375	Rp 4.579.912	Rp 5.569.173	Rp 6.772.114	Rp 34.761.112
Rp 3.910.596	Rp 4.722.563	Rp 5.703.631	Rp 6.889.121	Rp 8.321.750	Rp 10.053.186	Rp 52.655.528

Cost of sales Pessimistic	Y2 M1	Y2 M2	Y2 M3	Y2 M4	Y2 M5	Y2 M6
Veebalm	Rp 3.197.757	Rp 3.214.705	Rp 3.231.743	Rp 3.248.871	Rp 3.266.090	Rp 3.283.401
Veegloss	Rp 6.956.987	Rp 6.993.859	Rp 7.030.926	Rp 7.068.190	Rp 7.105.652	Rp 7.143.312
Total	Rp 10.154.744	Rp 10.208.564	Rp 10.262.670	Rp 10.317.062	Rp 10.371.742	Rp 10.426.712

Y2 M7	Y2 M8	Y2 M9	Y2 M10	Y2 M11	Y2 M12	Y2
Rp 3.300.803	Rp 3.318.297	Rp 3.335.884	Rp 3.353.564	Rp 3.371.338	Rp 3.389.206	Rp 39.511.659
Rp 7.181.171	Rp 7.219.232	Rp 7.257.493	Rp 7.295.958	Rp 7.334.627	Rp 7.373.500	Rp 85.960.908
Rp 10.481.974	Rp 10.537.528	Rp 10.593.377	Rp 10.649.522	Rp 10.705.965	Rp 10.762.706	Rp 125.472.566

Cost of sales Pessimistic	Y3 M1	Y3 M2	Y3 M3	Y3 M4	Y3 M5	Y3 M6
Veebalm	Rp 3.406.830	Rp 3.424.545	Rp 3.442.353	Rp 3.460.253	Rp 3.478.247	Rp 3.496.333
Veegloss	Rp 7.411.842	Rp 7.450.384	Rp 7.489.126	Rp 7.528.069	Rp 7.567.215	Rp 7.606.565
Total	Rp 10.818.672	Rp 10.874.929	Rp 10.931.479	Rp 10.988.323	Rp 11.045.462	Rp 11.102.898

Y3 M7	Y3 M8	Y3 M9	Y3 M10	Y3 M11	Y3 M12	Y3
Rp 3.514.514	Rp 3.532.790	Rp 3.551.160	Rp 3.569.626	Rp 3.588.188	Rp 3.606.847	Rp 42.071.688
Rp 7.646.119	Rp 7.685.879	Rp 7.725.846	Rp 7.766.020	Rp 7.806.403	Rp 7.846.996	Rp 91.530.466
Rp 11.160.634	Rp 11.218.669	Rp 11.277.006	Rp 11.335.646	Rp 11.394.592	Rp 11.453.844	Rp 133.602.154

Cost of sales Pessimistic	Y4 M1	Y4 M2	Y4 M3	Y4 M4	Y4 M5	Y4 M6
Veebalm	Rp 3.621.996	Rp 3.637.208	Rp 3.652.484	Rp 3.667.825	Rp 3.683.230	Rp 3.698.699
Veegloss	Rp 7.879.954	Rp 7.913.050	Rp 7.946.285	Rp 7.979.659	Rp 8.013.173	Rp 8.046.829
Total	Rp 11.501.950	Rp 11.550.258	Rp 11.598.769	Rp 11.647.484	Rp 11.696.403	Rp 11.745.528

Y4 M7	Y4 M8	Y4 M9	Y4 M10	Y4 M11	Y4 M12	Y4
Rp 3.714.234	Rp 3.729.834	Rp 3.745.499	Rp 3.761.230	Rp 3.777.027	Rp 3.792.891	Rp 44.482.157
Rp 8.080.625	Rp 8.114.564	Rp 8.148.645	Rp 8.182.870	Rp 8.217.238	Rp 8.251.750	Rp 96.774.641
Rp 11.794.859	Rp 11.844.398	Rp 11.894.144	Rp 11.944.100	Rp 11.994.265	Rp 12.044.641	Rp 141.256.798

Cost of sales Pessimistic	Y5 M1	Y5 M2	Y5 M3	Y5 M4	Y5 M5	Y5 M6
Veebalm	Rp 3.808.442	Rp 3.824.056	Rp 3.839.735	Rp 3.855.478	Rp 3.871.285	Rp 3.887.157
Veegloss	Rp 8.285.582	Rp 8.319.553	Rp 8.353.663	Rp 8.387.913	Rp 8.422.304	Rp 8.456.835
Total	Rp 12.094.024	Rp 12.143.609	Rp 12.193.398	Rp 12.243.391	Rp 12.293.589	Rp 12.343.993

Y5 M7	Y5 M8	Y5 M9	Y5 M10	Y5 M11	Y5 M12	Y5
Rp 3.903.095	Rp 3.919.097	Rp 3.935.166	Rp 3.951.300	Rp 3.967.500	Rp 3.983.767	Rp 46.746.078
Rp 8.491.508	Rp 8.526.323	Rp 8.561.281	Rp 8.596.383	Rp 8.631.628	Rp 8.667.017	Rp 101.699.991
Rp 12.394.603	Rp 12.445.421	Rp 12.496.447	Rp 12.547.683	Rp 12.599.128	Rp 12.650.784	Rp 148.446.070

Table 4. Cost of Sales Most Likley

Cost of Sales Most Likely	Y1 M1	Y1 M2	Y1 M3	Y1 M4	Y1 M5	Y1 M6
Veebalm	Rp 494.450	Rp 613.118	Rp 760.266	Rp 942.730	Rp 1.168.985	Rp 1.449.542
Veegloss	Rp 822.858	Rp 1.045.030	Rp 1.327.188	Rp 1.685.529	Rp 2.140.622	Rp 2.718.590
Total	Rp 1.317.308	Rp 1.658.148	Rp 2.087.455	Rp 2.628.259	Rp 3.309.608	Rp 4.168.132

Y1 M7	Y1 M8	Y1 M9	Y1 M10	Y1 M11	Y1 M12	Y1
Rp 1.797.432	Rp 2.228.816	Rp 2.763.732	Rp 3.427.027	Rp 4.249.514	Rp 5.269.397	Rp 25.165.009
Rp 3.452.609	Rp 4.384.814	Rp 5.568.713	Rp 7.072.266	Rp 8.981.778	Rp 11.406.858	Rp 50.606.857
Rp 5.250.041	Rp 6.613.630	Rp 8.332.445	Rp 10.499.293	Rp 13.231.292	Rp 16.676.255	Rp 75.771.866

Cost of Sales Most Likely	Y2 M1	Y2 M2	Y2 M3	Y2 M4	Y2 M5	Y2 M6
Veebalm	Rp 5.142.234	Rp 5.176.173	Rp 5.210.336	Rp 5.244.724	Rp 5.279.339	Rp 5.314.183
Veegloss	Rp 11.733.408	Rp 11.810.849	Rp 11.888.801	Rp 11.967.267	Rp 12.046.251	Rp 12.125.756
Total	Rp 16.875.643	Rp 16.987.022	Rp 17.099.136	Rp 17.211.991	Rp 17.325.590	Rp 17.439.939

Y2 M7	Y2 M8	Y2 M9	Y2 M10	Y2 M11	Y2 M12	Y2
Rp 5.349.256	Rp 5.384.562	Rp 5.420.100	Rp 5.455.872	Rp 5.491.881	Rp 5.528.127	Rp 63.996.787
Rp 12.205.786	Rp 12.286.344	Rp 12.367.434	Rp 12.449.059	Rp 12.531.223	Rp 12.613.929	Rp 146.026.105
Rp 17.555.042	Rp 17.670.905	Rp 17.787.533	Rp 17.904.931	Rp 18.023.104	Rp 18.142.056	Rp 210.022.892

Cost of Sales Most Likely	Y3 M1	Y3 M2	Y3 M3	Y3 M4	Y3 M5	Y3 M6
Veebalm	Rp 5.564.060	Rp 5.600.227	Rp 5.636.628	Rp 4.992.508	Rp 5.024.959	Rp 5.747.258
Veegloss	Rp 12.695.919	Rp 12.778.443	Rp 12.861.503	Rp 12.945.102	Rp 13.029.246	Rp 13.113.936
Total	Rp 18.259.980	Rp 18.378.669	Rp 18.498.131	Rp 17.937.610	Rp 18.054.205	Rp 18.861.194

Y3 M7	Y3 M8	Y3 M9	Y3 M10	Y3 M11	Y3 M12	Y3
Rp 5.784.616	Rp 5.822.216	Rp 5.860.060	Rp 5.898.150	Rp 5.936.488	Rp 5.975.075	Rp 67.842.246
Rp 13.199.176	Rp 13.284.971	Rp 13.371.323	Rp 13.458.237	Rp 13.545.715	Rp 13.633.763	Rp 157.917.334
Rp 18.983.792	Rp 19.107.186	Rp 19.231.383	Rp 19.356.387	Rp 19.482.204	Rp 19.608.838	Rp 225.759.579

Cost of Sales Most Likely	Y4 M1	Y4 M2	Y4 M3	Y4 M4	Y4 M5	Y4 M6
Veebalm	Rp 6.006.146	Rp 6.037.378	Rp 6.068.772	Rp 6.100.330	Rp 6.132.052	Rp 6.163.938
Veegloss	Rp 13.704.658	Rp 13.775.922	Rp 13.847.557	Rp 13.919.564	Rp 13.991.946	Rp 14.064.704
Total	Rp 19.710.804	Rp 19.813.300	Rp 19.916.329	Rp 20.019.894	Rp 20.123.998	Rp 20.228.642

Y4 M7	Y4 M8	Y4 M9	Y4 M10	Y4 M11	Y4 M12	Y4
Rp 6.195.991	Rp 6.228.210	Rp 6.260.597	Rp 6.293.152	Rp 6.325.876	Rp 6.358.771	Rp 74.171.211
Rp 14.137.841	Rp 14.211.357	Rp 14.285.257	Rp 14.359.540	Rp 14.434.209	Rp 14.509.267	Rp 169.241.824
Rp 20.333.831	Rp 20.439.567	Rp 20.545.853	Rp 20.652.692	Rp 20.760.086	Rp 20.868.038	Rp 243.413.035

Cost of Sales Most Likely	Y5 M1	Y5 M2	Y5 M3	Y5 M4	Y5 M5	Y5 M6
Veebalm	Rp 6.391.200	Rp 6.423.795	Rp 6.456.557	Rp 6.489.485	Rp 6.522.582	Rp 6.555.847
Veegloss	Rp 14.583.265	Rp 14.657.639	Rp 14.657.639	Rp 14.732.393	Rp 14.732.393	Rp 14.807.528
Total	Rp 20.974.465	Rp 21.081.435	Rp 21.114.196	Rp 21.221.878	Rp 21.254.975	Rp 21.363.375

Y5 M7	Y5 M8	Y5 M9	Y5 M10	Y5 M11	Y5 M12	Y5
Rp 6.589.282	Rp 6.622.887	Rp 6.656.664	Rp 6.690.613	Rp 6.724.735	Rp 6.759.031	Rp 78.882.676
Rp 14.807.528	Rp 14.883.047	Rp 14.883.047	Rp 14.958.950	Rp 14.958.950	Rp 15.035.241	Rp 177.697.622
Rp 21.396.810	Rp 21.505.934	Rp 21.539.710	Rp 21.649.563	Rp 21.683.685	Rp 21.794.272	Rp 256.580.299

Table 5. Cost of Sales Optimistic

Cost of sales Optimistic	Y1 M1	Y1 M2	Y1 M3	Y1 M4	Y1 M5	Y1 M6
Veebalm	Rp 513.590	Rp 661.504	Rp 852.017	Rp 1.097.398	Rp 1.413.449	Rp 1.820.522
Veegloss	Rp 857.846	Rp 1.135.788	Rp 1.503.784	Rp 1.991.009	Rp 2.636.097	Rp 3.490.192
Total	Rp 1.371.436	Rp 1.797.292	Rp 2.355.801	Rp 3.088.407	Rp 4.049.545	Rp 5.310.714

Y1 M7	Y1 M8	Y1 M9	Y1 M10	Y1 M11	Y1 M12	Y1
Rp 2.344.832	Rp 3.020.144	Rp 3.889.945	Rp 5.010.249	Rp 6.453.201	Rp 8.311.723	Rp 35.388.573
Rp 4.621.014	Rp 6.118.222	Rp 8.100.527	Rp 10.725.097	Rp 14.200.029	Rp 18.800.838	Rp 74.180.443
Rp 6.965.846	Rp 9.138.366	Rp 11.990.472	Rp 15.735.346	Rp 20.653.230	Rp 27.112.561	Rp 109.569.016

Cost of sales Optimistic	Y2 M1	Y2 M2	Y2 M3	Y2 M4	Y2 M5	Y2 M6
Veebalm	Rp 8.121.617	Rp 7.678.966	Rp 8.250.446	Rp 8.315.624	Rp 8.381.318	Rp 8.447.530
Veegloss	Rp 19.364.036	Rp 19.517.012	Rp 19.671.196	Rp 19.826.599	Rp 19.983.229	Rp 20.141.096
Total	Rp 27.485.653	Rp 27.195.978	Rp 27.921.642	Rp 28.142.223	Rp 28.364.546	Rp 28.588.626

Y2 M7	Y2 M8	Y2 M9	Y2 M10	Y2 M11	Y2 M12	Y2
Rp 8.514.265	Rp 8.581.528	Rp 8.649.322	Rp 8.717.652	Rp 8.786.521	Rp 8.855.935	Rp 101.300.724
Rp 20.300.211	Rp 20.460.582	Rp 20.622.221	Rp 20.785.137	Rp 20.949.339	Rp 21.114.839	Rp 242.735.496
Rp 28.814.476	Rp 29.042.111	Rp 29.271.543	Rp 29.502.788	Rp 29.735.860	Rp 29.970.774	Rp 344.036.220

Cost of sales Optimistic	Y3 M1	Y3 M2	Y3 M3	Y3 M4	Y3 M5	Y3 M6
Veebalm	Rp 8.925.011	Rp 8.994.626	Rp 9.064.784	Rp 9.135.490	Rp 9.206.746	Rp 9.278.559
Veegloss	Rp 21.279.535	Rp 21.444.230	Rp 23.337.567	Rp 23.503.548	Rp 23.670.813	Rp 23.852.846
Total	Rp 30.204.546	Rp 30.438.857	Rp 32.402.352	Rp 32.639.037	Rp 32.877.559	Rp 33.131.405

Y3 M7	Y3 M8	Y3 M9	Y3 M10	Y3 M11	Y3 M12	Y3
Rp 9.350.932	Rp 9.423.869	Rp 9.497.375	Rp 9.571.455	Rp 9.646.112	Rp 9.721.352	Rp 111.816.311
Rp 24.036.173	Rp 24.220.806	Rp 24.406.858	Rp 24.594.340	Rp 21.809.417	Rp 24.973.636	Rp 281.129.769
Rp 33.387.105	Rp 33.644.675	Rp 33.904.233	Rp 34.165.795	Rp 31.455.530	Rp 34.694.988	Rp 392.946.080

Cost of sales Optimistic	Y4 M1	Y4 M2	Y4 M3	Y4 M4	Y4 M5	Y4 M6
Veebalm	Rp 9.781.624	Rp 9.842.270	Rp 9.903.292	Rp 9.964.693	Rp 10.026.474	Rp 10.088.638
Veegloss	Rp 25.128.472	Rp 25.284.269	Rp 25.415.747	Rp 25.547.909	Rp 25.680.758	Rp 25.814.298
Total	Rp 34.910.097	Rp 35.126.539	Rp 35.319.039	Rp 35.512.602	Rp 35.707.232	Rp 35.902.936

Y4 M7	Y4 M8	Y4 M9	Y4 M10	Y4 M11	Y4 M12	Y4
Rp 10.151.187	Rp 10.214.125	Rp 10.277.452	Rp 10.341.173	Rp 10.405.288	Rp 10.469.801	Rp 121.466.017
Rp 25.948.532	Rp 26.083.465	Rp 26.219.099	Rp 26.355.438	Rp 26.492.486	Rp 26.630.247	Rp 310.600.722
Rp 36.099.720	Rp 36.297.590	Rp 36.496.551	Rp 36.696.611	Rp 36.897.774	Rp 37.100.048	Rp 432.066.739

Cost of sales Optimistic	Y5 M1	Y5 M2	Y5 M3	Y5 M4	Y5 M5	Y5 M6
Veebalm	Rp 10.533.666	Rp 10.597.922	Rp 10.662.569	Rp 10.727.611	Rp 10.793.049	Rp 10.858.887
Veegloss	Rp 26.792.692	Rp 26.956.127	Rp 27.120.560	Rp 27.285.995	Rp 27.452.440	Rp 27.619.900
Total	Rp 37.326.358	Rp 37.554.049	Rp 37.783.129	Rp 38.013.606	Rp 38.245.489	Rp 38.478.786

Y5 M7	Y5 M8	Y5 M9	Y5 M10	Y5 M11	Y5 M12	Y5
Rp 10.925.126	Rp 10.991.769	Rp 11.058.819	Rp 11.126.278	Rp 11.194.148	Rp 11.262.433	Rp 130.732.278
Rp 27.788.381	Rp 27.957.890	Rp 28.128.433	Rp 28.300.017	Rp 28.472.647	Rp 28.646.330	Rp 332.521.410
Rp 38.713.507	Rp 38.949.659	Rp 39.187.252	Rp 39.426.295	Rp 39.666.795	Rp 39.908.762	Rp 463.253.688

5.2.2. Operating Expenses

Operational costs are projected based on monthly. It must be noted that some assumptions must be made to obtain the operating expenses shown in table 8. These assumptions are that research and development expenses increase by 50% annually and do it every six months, utility expenses and facilities and maintenance Expenses will increase in accordance with the historical average inflation rate of 2.51%. Vee Naturals' marketing expenses will increase by 50% annually. And employee salaries will increase by 75% per year. In addition, the depreciation method used in this study uses a straight-line method. The net asset value is calculated in accordance with the Minister of Finance Regulations No. 96/PMK.03/2009. In the case of the Vee Naturals Company, the assets owned by the company are categorized as group number one and thus can be depreciated within four years.

5.2.3. Pro Forma Income Statement Result

In this paper, the tax expense is calculated based on government regulation number 23 of 2018. The final income tax rate of 0.5% of gross turnover applies to MSMEs whose income is still below IDR 4,800,000,000,- per year. Vee Naturals income is still below IDR 4,800,000,000,- in a year. Therefore, Vee Naturals' uses a final PPH rate of 0.5%.

5.3. Pro Forma Balance Sheet

Based on table 9, it looks at the net assets that Vee Naturals have. Vee Naturals has no land or intangible assets. Therefore, Vee Naturals only has current assets in the form of equipment. Vee Naturals has no liabilities on its pro forma balance sheet because Vee Naturals does not make loans to third parties. In the equity account, there is a common stock held by the fund provider that retained earnings from the proceeds of the sale profit.

5.4. Pro Forma Cash flow

Based on cash flow established by the Vee Naturals Company, operating cash flow generates positive cash flow in Y2M5 for pessimistic, Y1M12 for most likely, and Y1M10 for optimistic. According to Vara (2013), the normal risk of 20% will apply 12 months after generating positive cash flow. Therefore, it is known that normal risks will be applied, ranging from Y3M5 for pessimistic, Y2M12 for most likely, and Y2M10 for optimistic. Furthermore, this cash flow projection will be the basis of valuation calculations carried out in the paper and will be discussed in the next section.

5.5. Valuation using Risk-Based New Venture Valuation Technique

5.5.1. Milestone Detail

Before applying risk-based new venture techniques, it is important to define milestones that have been or will be completed by Vee Naturals companies. Currently, Vee Naturals Company is in the miletone 3, sales channel acquisition validated stage after completing milestone 1, customer validation, and milestone 2, product validation and business model validation. Therefore, the milestone is formed based on three types of risk, namely development risk, customer acceptance risk, and marketing and sales risk. This milestone can be summarized as a Gantt chart, shown in Table 10.

Table 6. Milestones Gantt Chart

Description	YO M0	YO M1	YO M2	YO M3	YO M4	YO M5	Y1 M1	Y1 M2	Y1 M3	Y1 M4	Y1 M5	Y1 M6	Y1 M7	Y1 M8	Y1 M9	Y1 M10	Y1 M11	Y1 M12	Y2 M10	Y2 M12	Y3 M5	Y5 M12
Type of Risk	Milestone (s)																					
Development Risk (BM)	Prototype																					
	Market Survey																					
Customer Acceptance Risk (BM)	Beta Testing																					
Marketing & Sales Risk (MV)	Product Launch Promotion																					
	Sales Channel Acquisition																					
Stages	Milestone																					
business Initiation	[Yellow bar from YO M0 to YO M1]																					
Market Survey & Prototype completed	[Green bar from YO M2 to YO M3]																					
Beta test completed	[Green bar from YO M3 to YO M4]																					
First Revenue Generated	[Yellow bar from YO M4 to YO M5]																					
Sales Channel Acquisition	[Green bar from Y1 M10 to Y1 M12]																					
Normal Risk Starting to be Applied	[Red bar from Y2 M10 to Y2 M12]																					
Terminal Value Applied	[Yellow bar from Y5 M12 to Y5 M12]																					

5.5.2. Discount rate

In the risk-based new venture technique paper, using different discount rates for each milestone. The discount rate difference is different due to the risk assessment experienced by Vee Naturals Company at each milestone. According to a new risk-based new venture technique by Whittington P. Vara, the discount rate applied to normal risk is milestone 4, which is 20%, which will occur in Y3M5 for pessimistic, Y2M12 for most likely, and Y2M10 for optimistic. For milestone 3, the discount rate was increased by 10% to 30%. For milestone 2, the discount rate was increased by 15% to 45%, and for milestone 1, the discount rate was also increased by 20% to 65%.

5.5.3. Terminal Growth Rate

To complete the assessment calculation, the author needs to set a terminal growth rate to obtain the assessment after the projected years are over. To find the terminal growth rate, the authors used the revenue growth rate trend data for the 47 cosmetics market in Indonesia from 2017 to 2025 from statista.com, as shown in table 7.

From Table 7, it is shown that the five-year projection produces an average growth rate of 7.46%. Meanwhile, the minimum growth rate in the five-year projection is expected to occur in 2025, while the growth rate will reach 6.30%. However, in this paper, the authors use the minimum growth rate that will be applied as a terminal growth rate because of the conventionality it produces. This decision is based on Vara (2013), who argues that the more conventional the assumption of terminal growth rate, the better

Table 7. Projected Sales Revenue Growth Rate Cosmetics Market in Indonesia (2017-2025)

Year	Growth Rate
2017	6,40%
2018	6,50%
2019	6,60%
2020	1,70%
2021	8,30%
2022	8,20%
2023	8,10%
2024	6,40%
2025	6,30%
5 Year Avarage	7,46%
Minimum Growth Rate in 5 year	6,30%

5.5.4. Valuation Result

After determining the discount rate for each milestone and the terminal growth rate, the Vee Naturals Company's valuation can be determined using the calculation tools. The Vee Naturals Company's valuation results are presented in Table 8 for pessimistic, Table 9 for most likely, and Table 10 for optimistic. In addition to the table, the graphs presented in Figure 4 for pessimistic, Figure 5 for most likely, and Figure 6 for optimistic, will help illustrate the assessment's summary.

Table 8. Valuation Summary Pessimistic

Vee Naturals					
Milestone Summary (IDR)					
	Milestone 1	Milestone 2	Milestone 3	Milestone 4	
Discount Rate	65,0%	45,0%	30,0%	20,0%	
Net Present Value of Cash Flows from Pro Forma F/S	Rp	- Rp	- -Rp	61.184.268 Rp	111.826.021
Growth into Perpetuity of 6,3%	Rp	- Rp	- Rp	19.343.642 Rp	87.440.231
Valuation	Rp	- Rp	- -Rp	41.840.626 Rp	199.266.252
Date	Yr 0 Mth 3	Yr 0 Mth 4	Yr 1 Mth 12	Yr 3 Mth 5	

Table 9. Valuation Summary Most Likely

Vee Naturals					
Milestone Summary (IDR)					
	Milestone 1	Milestone 2	Milestone 3	Milestone 4	
Discount Rate	65,0%	45,0%	30,0%	20,0%	
Net Present Value of Cash Flows from Pro Forma F/S	Rp	- Rp	- -Rp	13.336.434 Rp	252.171.600
Growth into Perpetuity of 6,3%	Rp	- Rp	- Rp	88.163.158 Rp	272.992.529
Valuation	Rp	- Rp	- Rp	74.826.724 Rp	525.164.130
Date	Yr 0 Mth 3	Yr 0 Mth 4	Yr 1 Mth 12	Yr 2 Mth 12	

Table 10. Valuation Summary Optimistic

Vee Naturals					
Milestone Summary (IDR)					
	Milestone 1	Milestone 2	Milestone 3	Milestone 4	
Discount Rate	65,0%	45,0%	30,0%	20,0%	
Net Present Value of Cash Flows from Pro Forma F/S	Rp	- Rp	- Rp	55.090.655 Rp	620.926.393
Growth into Perpetuity of 6,3%	Rp	- Rp	- Rp	219.682.736 Rp	993.045.123
Valuation	Rp	- Rp	- Rp	274.773.391 Rp	1.613.971.516
Date	Yr 0 Mth 3	Yr 0 Mth 4	Yr 1 Mth 12	Yr 2 Mth 10	

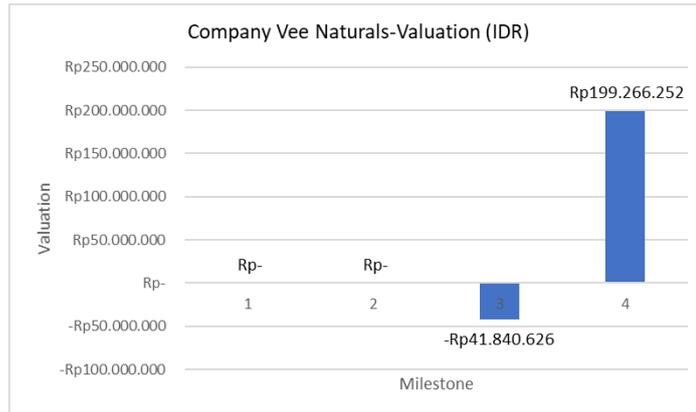


Figure 4. Valuation Per Milestones Pessimistic (in IDR)

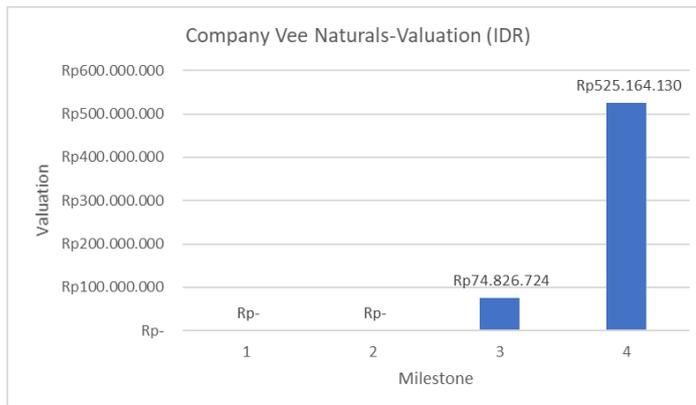


Figure 5. Valuation Per Milestones Most Likely (in IDR)

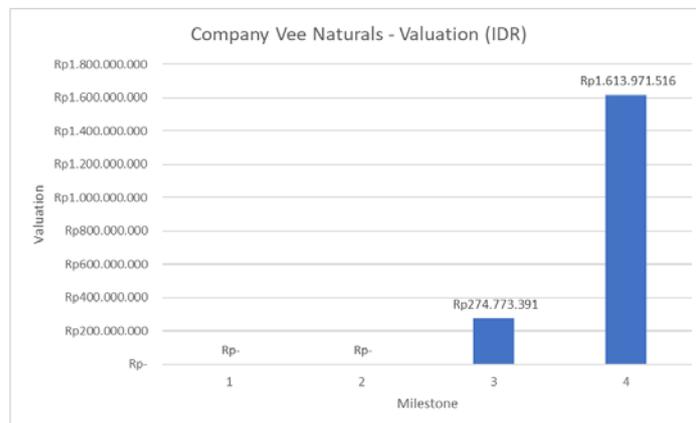


Figure 6. Valuation Per Milestones Optimistic (in IDR)

6. CONCLUSION

Based on the results of calculations using a risk-based new venture technique, the Vee Naturals company is at milestone 3 (sales channel acquisitions) after completing milestones 1 (market survey and prototype) and milestone 2 (beta testing) with a valuation value of IDR 41.840.626 in pessimistic conditions, IDR 74.826.724 in most likely conditions, and IDR 273.686.759 in optimistic conditions. The result of the estimated valuation of Vee Naturals company when normal risk is applied will be IDR

199.266.252 for pessimistic conditions, IDR 525.164.130 for most likely conditions, and IDR 1.609.059.546 for optimistic conditions.

In this research, there are several recommendations. First, the discount rate applied in this study still refers to the example of the Risk-Based New Venture Valuation Technique paper by Whittington P. Vara. It is recommended for further research to add a comprehensive assessment for each risk. Second, the assessment indicators can be a benchmark of a successful business. It is recommended for further researchers to research companies or business fields that are different from the Vee Naturals company. Third, the Risk-Based New Venture Technique Valuation process must compare the business field under study with other similar business fields. However, this research was not carried out due to time constraints and lack of publicly available data. It is recommended for further research to be able to compare the business field under study with other similar business fields. Fourth, this research is only up to the calculation of the valuation. Further research is recommended to analyze the sensitivity to find out which variables are quite sensitive to the results of the assessment from the Vee Naturals company. And last, the cosmetic industry trends should be updated in the next research to improve the accuracy of the assessment.

ACKNOWLEDGEMENTS

I am especially grateful to Mr. Taufik Faturohman, S.T, MBA, Ph.D. as my supervisor, who always gives the best advice during the completion of this paper and provides his time during the making of this research. Thank you for all the guidance, knowledge, and feedback. And also to those who have provided endless support and inspiration.

REFERENCES

- [1] Almanza, L. (2017). *Understanding Startup Valuation Methods - Luis Almanza - Medium*. [online] Medium. Available at: <https://medium.com/@lmalmanza/understanding-startup-valuation-methods-957d74881371>.
- [2] Bps.go.id. (2018). *Badan Pusat Statistik*. [online] Available at: <https://www.bps.go.id/indicator/3/1904/2/inflasi-2018-100-menurut-kelompok-dan-sub-kelompok-11-perawatan-pribadi-dan-jasa-lainnya.html> [Accessed 20 Juny Aug. 2021].
- [3] Damodaran, A. (2001). *Investment Valuation: Second Edition*. New York: NYUStern.
- [4] Damodaran, A. (2002). *Investment Valuation Tools and Techniques for Determining the Value of Any aset (2 ed.)*. New York: John Willey & Sons, Inc..
- [5] Grandviewresearch.com. (2019). *Organic Personal Care Market Size Worth \$25.11 Billion By 2025*. [online] Available at: <https://www.grandviewresearch.com/press-release/global-organic-personal-care-market>
- [6] Investopedia. (2021). *Discounted Cash Flow (DCF)*. [online] Available at: <https://www.investopedia.com/terms/d/DCF.asp> [Accessed 10 July. 2021].
- [7] Linda dan S.B.Z. Fazli (2005). Hubungan Laba Akuntansi, Nilai Buku dan Total Arus Kas dengan Market Value: Studi Akuntansi Relevansi Nilai, *Jurnal Riset Akuntansi indonesia*, Vol. 8, No. 3, Hlm. 286-306.
- [8] Mahajan, A., Nallari, S. and Vyas, H. (2021). Analysis of Key Factors Contributing Towards Valuation of Pre-Revenue Start-ups by Means of the Berkus

- Method. *International Journal of Scientific & Engineering Research*, [online] 12(2).
- [9] Marketresearchfuture.com. (2021). *Natural and Organic Cosmetics Market Share, Growth, Trend Analysis to 2027 / MRFR*. [online] Available at: <https://www.marketresearchfuture.com/reports/natural-organic-cosmetics-market-7257>.
- [10] Payne, B. (2011). *The Gust Blog*. [online] The Gust Blog. Available at: <https://blog.gust.com/valuations-101-the-risk-factor-summation-method/> [Accessed 21 July. 2021].
- [11] Ruffino, D. (2014). Real Options. 1.
- [12] Sorvino, C. (2017). Why The \$445 Billion Beauty Industry Is A Gold Mine For Self-Made Women. *Forbes*. [online] 24 May. Available at: <https://www.forbes.com/sites/chloesorvino/2017/05/18/self-made-women-wealth-beauty-gold-mine/?sh=2cec68a92a3a>.
- [13] Statista. (2018). *Cosmetic market value worldwide, 2018-2025 / Statista*. [online] Available at: <https://www.statista.com/statistics/585522/global-value-cosmetics-market/>
- [14] Stéphane Nasser (2016). Valuation For Startups -9 Methods Explained. (2016). [online]. Available at: <http://ictstrategicservices.com.au/wp-content/uploads/2017/05/Valuation-for-Startups-9-Methods-Explained.pdf>.
- [15] Vara, W. P. (2013). Risk-Based New Venture Valuation Technique: Win-Win for Entrepreneur and Investor.
- [16] Widyatini, I. (2017). The Effect of Risk Taking Behavior Performed by The Economic Agents Toward The Risk of the Bankruptcy of Banks. *Review of Integrative Business and Economics Research*, [online] 6(2), p.234.