

## **Internal Growth Strategy of Firms and Its Financial Logic: A Comparative Study Between SMEs and Large Algerian Companies.**

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### ***Abstract:***

*This study addresses the financial logic underpinning the growth strategy of Algerian economic enterprises from 2019 to 2024. It attempts to analyse economic enterprises' financing of internal growth and examine the impact of firm size on this behaviour. Multivariate statistical analysis methods were employed to investigate the phenomenon. The study found that the financial strategies*

*adopted to support growth in small and medium-sized enterprises differ from those employed by large enterprises. Furthermore, the study revealed the internal factors governing the financial logic of growth in both small and medium-sized enterprises and large enterprises.*

**Keywords:** *Growth strategy, financial decisions, financial logic of growth, small and medium-sized enterprise, large enterprise.*

## **La stratégie de croissance interne des entreprises et sa logique financière : Une étude comparative entre les PME et les grandes entreprises algériennes.**

### **Résumé :**

*Cette étude aborde la logique financière qui sous-tend la stratégie de croissance des entreprises économiques algériennes de 2019 à 2024. Elle tente d'analyser le financement de la croissance interne des entreprises économiques et d'examiner l'impact de la taille de l'entreprise sur ce comportement. Des méthodes d'analyse statistique multivariée ont été utilisées pour étudier le phénomène. L'étude a révélé que les stratégies financières adoptées pour soutenir la croissance des petites et moyennes entreprises diffèrent de celles employées par les grandes entreprises. En outre, l'étude a révélé les facteurs internes qui régissent la logique financière de la croissance tant dans les petites et moyennes entreprises que dans les grandes entreprises.*

**Mots-clés :** *Stratégie de croissance, décisions financières, logique financière de la croissance, petites et moyennes entreprises, grandes entreprises.*

## Introduction

The increasing trend towards globalisation is an unavoidable reality, and it is evident that this trend is closely and vitally linked to the profound influence on the evolution of managerial thought within economic enterprises. Whereas profit was formerly the primary objective in the previous phase, it has become imperative for enterprises to associate this goal with the priority of survival and adaptation to the new economic environment. Integration into the global economy necessitates that economic enterprises strive to ensure the continuity of their activities within a context where the enterprise struggles for survival and growth. Accordingly, the growth strategy is necessary today for economic enterprises aiming at survival and continuity and to face the escalating competition prevalent in most global markets.

In this new reality, and given the expansion and comprehensiveness of economic enterprises' activities alongside their desire to encompass global markets, the need for financing sources to support this expansion and growth has intensified. The issue of growth financing is among the most significant challenges faced by economic enterprises.

It has become evident that an enterprise's growth is closely linked to its financial capabilities. The enterprise must utilise its available resources in the best possible manner to achieve the desired objectives. Since internal growth occurs due to the interaction of various internal variables, chiefly those related to the financial aspect, it is crucial to analyse and regulate these variables to attain balanced growth rates.

In the following pages, we seek to answer the following question:

**How can the behaviour of Algerian economic enterprises in financing their internal growth be analysed, and to what extent does the size of the enterprise affect its financial decisions related to its internal growth?**

This issue leads us to pose the following subsidiary questions:

- Is size an effect on the financial logic of enterprise growth?
- How can the behaviour of small and medium-sized enterprises in financing their internal growth be analysed?
- How can the behaviour of large enterprises in financing their internal growth be analysed?

### **Research Hypotheses**

Analysing the issue under study requires testing the validity of the following hypotheses:

- The financial behaviour of small and medium-sized enterprises in financing their internal growth differs from that of large enterprises;
- Small and medium-sized enterprises rely on trade policy decisions to finance their internal growth;
- Due to their larger capacities, large enterprises depend on their economic performance and financial profitability because of their significant borrowing capacity.

### **Study Objectives**

The main objectives of the study can be summarised as follows:

- To attempt an analysis of the economic, strategic, and financial aspects of the concept of enterprise growth, which is characterised by its multidimensionality, complexity, and interrelatedness;

- To attempt an analysis of the financial logic of growth in economic enterprises by highlighting and explaining the internal factors controlling growth;
- To test the effect of size on the behaviour of economic enterprises in financing their internal growth, that is, to attempt to demonstrate the specificity of the financial behaviour of both small and medium-sized enterprises and large enterprises in supporting their internal growth.

## 1. Previous Studies

### 1.1. The study by Robert B., Josée S., and Jacques B. (1997) entitled:<sup>i</sup>

*“La croissance soutenable du chiffre d'affaires des entreprises: stratégies financières et effet de taille”*

The researchers conducted a field study on a sample comprising small and medium-sized enterprises (SMEs) and large enterprises, performing a comparative analysis of the two financial strategies adopted to achieve growth rates. The aim was to test the existence of a size effect, with the researchers seeking to propose a model to determine the supported growth rate compatible with the specificities of SMEs.

The study sample consisted of industrial enterprises in Canada, including 158 small and medium-sized enterprises employing between 50 and 500 workers and with annual turnover not exceeding 100 million Canadian dollars. For the large enterprises, 104 firms were selected, each employing more than 500 workers and with annual turnover exceeding 10 million Canadian dollars.

The study demonstrated that SMEs adopt financial strategies that differ from those employed by large enterprises to

support their growth. Moreover, in response to pressures resulting from growth, SMEs significantly modify their initial financial strategies compared to large firms. The study concluded that the pace of growth influences the factors that change an enterprise's financial strategy. It also revealed that changes in the financial structure, whether short-term or long-term, depend on the financial details managed by decision-makers, with SMEs preferring short-term financing sources over long-term ones.

### **1.2. The study by Michel Montebello (1981) entitled:<sup>ii</sup>**

*“Logiques financières de la croissance dans les firmes asiatiques”*

The researcher aimed in this study to reveal the internal factors that led Asian enterprises to achieve significant growth based on their increasing turnover. The researcher observed considerable expansion and development in Asian enterprises, particularly in Japan, South Korea, Hong Kong, Singapore, and Malaysia.

To investigate the financial logic behind the growth of the enterprises under study, the researcher analysed the financial characteristics of a sample of firms based on information published in the *Asian Finance* magazine in October 1980, which classified 426 of the largest and best-performing Asian enterprises. The researcher used a sample of 150 companies for European firms, with data obtained from *Fortune* magazine in August 1980, where large European enterprises were ranked according to their turnover. The researcher relied on average financial ratios per country and began analysing commercial profitability, asset turnover, financial leverage, maximum growth rate, and reinvestment policy, elucidating the relationship between the retention rate of earnings and the sustainable growth rate.

The researcher concluded that financial strategies in enterprises across the studied Asian countries were not homogeneous. The study identified three distinct growth logics:

- Growth logic in Japan and Korea is characterised by low profit margins, substantial asset turnover, high borrowing, and earnings reinvestment, enabling a high growth rate.
- Growth logic in Hong Kong and Malaysia: characterised by strong profit margins, weak asset turnover, low borrowing, and significant dividend distribution, reflecting a profit-oriented growth logic.
- Growth logic in Formosa (Taiwan) balances net margin with asset turnover and debt with the reinvestment rate of earnings.

### **1.3. The study by Pierre-Xavier Meschi (1998) entitled:<sup>iii</sup>**

*“Les Logiques financières de la croissance dans les firmes d’Europe centrale”*

The researcher followed the same approach as the previous study, seeking to understand the financial logic of growth in a group of enterprises from Central European countries. These enterprises possessed two strategic advantages for success: low labour costs compared to other firms and a high level of innovation and technical qualification, which enabled them to achieve elevated growth rates.

The researcher employed a financial growth model derived from the competitive and enterprise growth analysis methodology. This model is based on analysis at three levels: commercial, economic, and financial. The commercial level is determined by two ratios: net margin and asset turnover; the return on assets ratio determines the economic lev-

el; and leverage ratios and equity profitability determine the financial level.

The researcher based his study on a sample of 257 enterprises from six Central European countries to reveal the financial logic of growth in the firms of the countries under study, identifying three types of logic:

- A substantial net margin, high asset turnover, and significant leverage
- Characterise the aggregate logic.
- A weak net margin, substantial asset turnover, and high leverage characterise the selective logic.
- The exclusive logic: where enterprises following this growth logic rely solely on net margin.

## **2. Study Boundaries**

To address the issue under investigation and to attempt to reach precise conclusions, the study was confined within the limits of the adopted concepts as well as the spatial and temporal framework as follows:

### **2.1. Conceptual Boundaries:**

Given that enterprise growth has many dimensions that are difficult to cover in a single study, this research was limited to analysing the financial logic of growth in economic enterprises, focusing on the impact of enterprise size on this logic. Thus, this study constitutes a comparative analysis of the financial logic of growth between small and medium-sized enterprises and large enterprises.

#### **▪ Spatial Boundaries:**

The field study included a sample of economic enterprises of varying sizes from different provinces across Algeria.

### ▪ **Temporal Boundaries:**

This study covers the period from 2019 to 2024, relying on the accounting balance sheets of the enterprises included in the study sample during this timeframe.

## **2.2. Concept of Enterprise Growth:**

Definitions of growth have varied over time, depending on economic conditions and different thinkers' perspectives. Below, we attempt to present what we consider significant. Bienaymé (1973) posits that an enterprise's actual inclination is growth and expansion, considering it the most important phenomenon capable of transforming. <sup>iv</sup>Its life.

Moreover, enabling it to stand out in its competitive environment. <sup>v</sup> Bienaymé defined growth as a multidimensional phenomenon affecting the size of the enterprise, which consequently leads to multiple criteria for measuring size. <sup>vi</sup> Growth can thus be defined as an increase in the size of the enterprise over a given period. This period may be extended if growth is based on production or short due to temporary expansion linked to the acceleration of capital turnover or the increase in production capacity. Growth is also a relative phenomenon measured by the rate of increase in size over a specific period compared with competing enterprises. <sup>vii</sup>

In line with Bienaymé's logic, Gasmi (1988) defines growth as "an increase in the size of the enterprise over time." <sup>viii</sup> For Penrose (1959), enterprise growth denotes expansion activity and its implications. It signifies an increase in the enterprise's quantitative factors (such as production, turnover, workforce, facilities, and equipment), accompanied by internal changes in the enterprise's characteristics (such as organisational structure, management system, corporate culture, technology used, etc.). <sup>ix</sup> Growth is an evolu-

tionary process based on the cumulative development of collective knowledge and experience.<sup>x</sup>

Starbuck (1965) explains that enterprise growth is neither a spontaneous nor automatic phenomenon but rather the result of a significant managerial decision. The decision to increase the production level stems from an increase in demand and a decision to stimulate and activate demand. Growth, therefore, is attributed to the rising demand for the enterprise's products and services. Initially, this requires boosting sales, which leads to increased profits and enables the enterprise to invest in other production factors to adapt to the new level of demand.<sup>xi</sup>

Torres (1998) considers growth a multidimensional and complex phenomenon marked by intermittent transformations and crises. Managerial orientations, strategy, and the environment influence this phenomenon.<sup>xii</sup>

Sammut (1996) emphasises that enterprise growth relates to managers' awareness and perceptions and the totality of internal and external organisational components. Growth is thus a composite result of various phenomena arising from the environment, financial characteristics, organisational structure, productivity, and individual attributes.<sup>xiii</sup>

Leurquin (2004), meanwhile, views growth as an indicator of an enterprise's favourable position, whether it results from meeting its needs or seizing opportunities in the environment. Growth, therefore, is not merely desirable but a necessary course of action.<sup>xiv</sup>

Enterprise growth manifests in two dimensions: quantitative growth and qualitative development.<sup>xv</sup>

- **Quantitative growth** has three characteristics:
  - An increase in the volume of production factors used (such as labour, intermediate consumption, etc.);

- An increase in the volume of products (sales, market share, etc.);
- An improvement in achieved results (profits, capacity for self-financing, etc.).
- **Qualitative development** refers to significant changes in the enterprise's characteristics during its growth stages, which are difficult to comprehend fully. An enterprise cannot grow without substantially changing its structure, activities, internal organisation, and technology and integrating creativity and innovation into its culture.

From the foregoing, it can be stated that enterprise growth is a dynamic expression of an economic phenomenon reflecting the extent of an enterprise's success in developing its overall capacities with the aim of continuity and survival. This phenomenon entails changes in the enterprise's outcomes as well as in its organisational characteristics.

### **3. Models of Internal Growth (Modèle de croissance interne)**

Numerous studies have developed models to explain the internal growth of enterprises. Under certain conditions, these models enable an understanding of the strategies employed by enterprises to achieve desired growth levels. The internal growth model is an analytical tool to reveal the financial logic behind internal growth.

#### **3.1 Higgins Model (1977)<sup>xvi</sup>**

Higgins defined potential growth as "the percentage growth in turnover consistent with the enterprise's current financial policy, which aims to maintain the same dividend

payout ratio and achieve the targeted financial structure without resorting to additional permanent financial resources."

If the enterprise's sales grow faster than expected, this leads to an imbalance in some of its financial objectives, especially when it is in a deteriorated financial state. Conversely, if sales grow slower than the potential growth rate, the enterprise can increase its dividend distributions, reduce its debts, or increase its liquidity.

Occasionally, discrepancies arise between the enterprise's growth objectives and financial policy. This often occurs when these objectives are externally imposed (for example, in the case of small subcontracting enterprises). In such situations, managers must alter the financial policy if they are required to operate at a growth pace beyond the enterprise's capacity.

Managers can implement various changes to determine the potential growth rate, including:

- Increasing the efficiency of collection policies;
- Improving inventory management methods;
- Reducing the relative importance of investments by lowering investment rates and ensuring increased production through optimal use of assets (e.g., expanding existing facilities, increasing working hours, leasing instead of purchasing);
- Enhancing profitability and productivity;
- Reducing dividend distributions;
- Increasing leverage;
- Raising permanent capital.

### 3.1.2 *Kyd Model (1981)*<sup>xvii</sup>

Kyd proposed the following formula to estimate the potential growth rate of an enterprise that does not wish to increase its capital by issuing new shares:

$$g = (\Delta S / S) \times (1 - D) \times (1 - T) \times [\text{ROTA} + L \times (\text{ROTA} - r)]$$

Where:

- g: Potential growth rate
- $\Delta S$ : Change in sales during the estimated period
- S: Current sales
- D: Target dividend payout ratio
- T: Average tax rate on profits
- ROTA: Return on total assets, defined as operating profit divided by total assets
- L: Target financial leverage ratio, calculated as total debt divided by shareholders' equity
- r: Average interest rate on debt

This model relies more on profit than cash flows. It assumes that the turnover of economic assets remains constant and is independent of depreciation, the pace of fixed asset renewal, and potential changes in current short-term assets. It does not distinguish between interest-bearing debt and trade payables as sources of enterprise financing.

### 3.1.2. *Bourgeois and Lavallée Model (1993)*<sup>xviii</sup>

Bourgeois and Lavallée proposed a simplified model for potential growth that yields results very close to those of the previous model. It is measured as follows:

$$g = \text{RFP} - \text{RFP} \times (\text{dividends} / \text{profits})$$

Where:

- • RFP: Return on equity (profitability of shareholders' funds)

This model is applied more frequently in large enterprises than in small and medium-sized ones. It relies on relationships between balance sheet items and income statement accounts and does not consider other factors affecting the enterprise's liquidity. It also assumes a fixed capital structure.

### 3.1.3. *Olson et al. Model (1992)<sup>xix</sup>*

This model relies on liquidity variables. Olson et al. criticised the previous two models for their dependence on accounting ratios that must remain constant and for ignoring liquidity and its sensitivity to inflation rates, the enterprise life cycle, and other external factors. They also emphasised using information reflecting the current financial situation, which they believe encapsulates all elements influencing enterprise growth. The model proposes the following formula to calculate the potential growth rate:

$$g = [ (F + D + O + X + W - E + I - S\_E) / PR ]$$

Where:

- F: Net expected increase in investments
- D: Expected dividend distribution
- O: Movement of funds allocated to the enterprise's external activities
- X: Expected change in collections
- W: Expected change in current assets excluding collections
- E: Expected costs that do not result in cash outflows
- I: Expected revenues that do not result in cash inflows
- S\_E: Expected external financing sources
- PR: Net profit margin
- R: Previous period sales

The researchers neglected to link each cash inflow and outflow item to turnover, which requires estimating the ex-

pected amount for each model element. This makes the model challenging to apply to managers of small and medium-sized enterprises.

### **3.1.4. Robert B., Josée S., and Jacques B. Model<sup>xx</sup>**

This model differs from the Bourgeois and Lavallée (1993) model and the Kyd (1981) model in its greater reliance on liquidity rather than profit. It assumes that total assets are not constant and allows for changes in the enterprise's financing structure. It expands upon Olson et al.'s (1992) model by incorporating the relationship between various variables and the enterprise's turnover. The potential growth rate is defined as follows:

$$g = [(V (\pi + Am + D\pi) - Divid (1 + D)) / (V (CC + St + Imm - CF - \pi - Am - D\pi))]$$

Where:

- V: Sales of the last year
- $\pi$ : Net profit as a percentage of sales
- Am: Depreciation as a percentage of sales
- D: Additional interest-bearing debt as a percentage of reinvested earnings for the current year
- Divid: Dividend distribution amount
- CC: Accounts receivable as a percentage of sales
- St: Inventory as a percentage of sales
- Imm: Total investments as a percentage of sales
- CF: Accounts payable as a percentage of sales

According to this model, debt is determined relative to reinvested earnings to reach the desired debt-to-total-assets ratio. This model can be applied to small, medium, and large enterprises and thus can be used to study the impact of size on financial strategies employed to achieve desired growth rates.

## **4. Design of the Field Study**

### **4.1 Presentation of the Study Population:**

This study includes a sample of large economic enterprises and small and medium-sized enterprises (SMEs) for which accounting data were obtained from the National Centre of Commercial Registration in Algiers, specifically from the Publication Department of the centre. This source was relied upon after initial attempts to collect accounting data directly from the enterprises and some private offices, which proved challenging. These difficulties led us to consider a source that could provide the necessary data while saving time and effort on the one hand and ensuring the diversity of the sample in terms of geographic location across various provinces of the country on the other.

To ensure that the sample is a good representation of the target statistical population, the following conditions were carefully ensured:

- Verification of proper classification of the study enterprises as either large or small and medium-sized;
- Confirmation that these enterprises achieved positive results during the study years;
- Diversity of these enterprises regarding sector type, geographic location, legal form, and capital ownership.

Accordingly, a sample comprised 106 observations for large enterprises and 312 observations for small and medium-sized enterprises from 2019 to 2024. The study relied on these enterprises' accounting and financial data.

### **4.2 Study Variables:**

The analysis relied on 18 financial ratios believed to explain the phenomenon of internal financing for enterprise growth. These ratios are divided into those explaining in-

vestment, financing, and dividend distribution decisions, considering these decisions to explain the financial logic behind enterprise growth.

In reality, the selection of these ratios is not random but based on scientific and practical grounds, including benefiting from previous studies and theoretical foundations explaining the internal financing of enterprise growth.

**Table 1: Study Variables and Their Financial and Economic Interpretations**

<b>Financial and Economic Interpretation</b>	<b>Name</b>	<b>Ratio</b>	<b>Symbol</b>
<b>Economic performance of the operating cycle</b>	Gross economic profitability	$EBE / AE$	R1
<b>Economic performance of operating and investment cycles</b>	Net economic profitability	$Rexp / AE$	R2
<b>Enterprise's ability to control operating costs</b>	Gross operating margin	$EBE / CA$	R3
<b>Profitability of commercial activity</b>	Net operating margin	$Rexp / CA$	R4
<b>Efficiency of economic asset</b>	Economic asset turnover rate	$CA / AE$	R5
<b>Performance of industrial and commercial assets</b>	Value added to economic asset	$VA / AE$	R6
<b>Enterprise's mar-</b>	Vertical integra-	$VA / CA$	R7

<b>ket weight</b>	tion ratio		
<b>Share of employees in value-added</b>	Labour productivity	Personnel expenses / VA	R8
<b>Share of creditors in value-added</b>	Financial expenses to value-added	FF / VA	R9
<b>Contribution of Value added to enterprise result</b>	Net result to Value added	Rent / VA	R10
<b>Enterprise's share of Value added</b>	Self-financing capacity to value-added	CAF / VA	R11
<b>Share of creditors in the operating cycle</b>	Financial expenses to gross operating surplus	FF / EBE	R12
<b>Enterprise's share of net result</b>	Self-financing capacity to enterprise result	CAF / Rent	R13
<b>Return on equity</b>	Self-financing capacity to shareholders' funds	CAF / CP	R14
<b>Degree of financial leverage</b>	Financial structure ratio	D / CP	R15
<b>Financial independence</b>	Debt ratio	AE / CP	R16
<b>Reflects commercial policy</b>	Net margin rate	Rent / CA	R17
<b>Return on shareholders' equity</b>	Financial profitability	Rent / CP	R18

*Source:* Prepared by the researchers

## **5. Analysis of the Financial Behaviour of Enterprises Using Discriminant Analysis**

To analyse the financial behaviour of the enterprises under study, we use discriminant analysis to determine whether factors capable of distinguishing enterprises according to their size (large enterprises vs. small and medium-sized enterprises) exist.

Our aim in employing this method is to answer the following questions:

- To what extent can the study variables discriminate between enterprises based on size (large enterprises vs. small and medium-sized enterprises)?
- Among the study variables, which variables are responsible for defining the behaviour of enterprises in financing their internal growth according to enterprise size? What are the statistical characteristics of these variables?
- Is it possible to obtain a discriminant function distinguishing between the two subgroups based on enterprise size characteristics? How effective is the discriminant function in prediction and estimation?
- What are the economic and financial meanings and interpretations contained in the discriminant function based on the statistical properties of the variables and their associated coefficients?

### **Application of Discriminant Analysis Method**

#### **Testing Equality of Group Means**

This method is based on the concept of discrimination power between groups. The greater the number of instances where group means differ, the stronger the indication that the analysis results are valid. In other words, the discrimina-

tion power of variables is reflected by the difference in the arithmetic means between the groups.

Therefore, the number of times means differ between the two groups, which indicates the strength of each variable's contribution to discrimination.

According to the results of this test, 17% of cases indicate differences in means between the two groups, which suggests a low probability of distinguishing the studied enterprises based on their internal growth financing behaviour according to size. Consequently, we proceed to Box's M test for equality of the study sample's covariance matrices.

### **Box's M Test for Equality of Covariance Matrices of the Study Sample**

This test measures the homogeneity between the two study groups. The smaller the significance level, the more we reject the null hypothesis, stating that the covariance matrices of the two groups are equal.

Box's M test indicates statistically significant differences in the covariance matrix (shared variances) between the two groups, as shown by the significance index, which equals zero—less than the adopted significance level of 0.05. The test also shows that only three variables out of the 18 proposed in the study are predictive.

The test results reveal inequality of the covariance matrices of the two groups, confirming that the study data satisfy the assumption that the two groups have identical density functions around their means while accounting for variances and covariances between each pair of variables.

### **Stepwise Method**

This method allows testing the ability of variables to discriminate between enterprises according to size. The follow-

ing table shows the number of steps undertaken to test the discrimination ability of the variables.

**Table 2: Stepwise Method Statistics**

Wilks' Lambda ( $\lambda$ )								Included Variables	Step
Exact F Value				Degrees of Freedom 3	Degrees of Freedom 2	Degrees of Freedom 1	Statistic		
Significance	Degrees of Freedom 2	Degrees of Freedom 1	F Statistic						
0,028	416	1	4,852	416	1	1	0,988	R5	1
0,004	415	2	5,572	416	1	2	0,974	R6	2
0,000	414	3	6,365	416	1	3	0,956	R2	3
The variable with the lowest Wilks' Lambda value is entered .at each step									
The total number of steps is 36.									
The highest significance level for including a variable (F-test) is 0.05.									
The lowest significance level for excluding a variable (F-test) is 0.01.									

*Source:* Prepared by the researchers based on the results of the SPSS program

It is evident from the table above that the maximum number of steps is 36. According to the F statistic and significance level, the variables included in the analysis are ranked according to their discriminative power: economic asset turnover rate, Value added to an economic asset and net

economic profitability. The significance levels for these variables are all below 0.05, meaning that any financial ratio with an associated F statistic significance level less than 0.05 is included as a discriminant variable. In contrast, the remaining variables that do not meet this condition are excluded from the analysis.

Accordingly, three of the eighteen proposed variables can discriminate between the two groups.

The table also shows that the exact significance values for the variables included in the model are statistically significant at all commonly accepted significance levels, indicating that these variables differ substantially within the study sample. Therefore, it can be said that the two groups under analysis are distinct, each with characteristics that differentiate it from the other.

Thus, the economic asset turnover rate variable ranks first in importance for discrimination among the study variables, followed by the Value added to the economic asset variable, and finally, the net economic profitability. The F statistic value demonstrates the strength of this indicator in classification, as it has the highest F value of 6.365 among the variables capable of discriminating between the two study groups.

### **Extraction of the Discriminant Function Between the Two Groups**

The following table shows the extracted discriminant function, its corresponding eigenvalue, explained variance ratio, and canonical correlation.

**Table 3: Eigenvalue of the Discriminant Function**

Canonical Correlation	Cumulative Variance Ratio (%)	Variance Ratio (%)	Eigenvalue	Function
0.210	100.0	100.0	0.046	1

*Source:* Prepared by the researchers based on SPSS program results.

It is noted that this discriminant function has an eigenvalue estimated at 0.046 with a canonical correlation of 0.210.

The canonical correlation indicates the strength of the relationship between the three variables included in the analysis and this function. The corresponding eigenvalue reflects the variance of these variables around the factor axis that this function represents.

**Test of the Extracted Discriminant Function**

The discriminant function is tested using several methods, including the Wilks' Lambda statistic. This statistic measures the proportion of unexplained variance in the discriminant scores; the smaller its Value, the better the analysis results. Conversely, a higher Chi-square ( $\chi^2$ ) Value indicates better discriminant quality of the function. The following table presents the results of this test.

**Table 4: Discriminant Function Test**

Significance	Degrees of Freedom	$\chi^2$ Value	Wilks' Lambda Coefficient	Discriminant Function Test
0	3	18.689	0.956	1

*Source:* Prepared by the researchers based on SPSS program results.

The Lambda test indicates the significance of the discriminant function in distinguishing between the two groups, with a Lambda value of 0.956 and a Chi-square value of 18.689 at a significance level of 0. Therefore, it can be concluded that the difference between the study groups, as reflected by the proposed classification variables, is not due to chance but is a substantive difference. This conclusion is based on the high Chi-square value at an acceptable significance level according to commonly accepted standards.

### Standardised Canonical Discriminant Function

The table below shows the standardised canonical discriminant function coefficients, representing the collective correlation between the discriminant function and each of the three independent variables entered into the discriminant analysis, expressed in standard measurement units.

**Table 5: Standardised Canonical Discriminant Function Coefficients**

Function	Coefficient	Variable
1	0.909	R2
1	0.664	R5
1	-1.231	R6

*Source:* Prepared by the researchers based on SPSS program results.

Based on this table, the standardised canonical discriminant function can be written as follows:

$$F = 0,909 R2 + 0,664 R5 - 1,231 R6$$

The standardised canonical discriminant function is proper in classification, meaning that, based on the set of discriminating characteristics (economic asset turnover rate, Value added to economic asset, and net economic profitability) of

an enterprise, it can be classified into one of the two groups (large enterprise or small and medium-sized enterprise).

### Canonical Discriminant Function

While the standardised canonical discriminant function is helpful for estimation, the following table presents its coefficients, which are used for prediction. This function allows us to predict the group membership of new cases.

**Table 6: Canonical Discriminant Function Coefficients**

Function	
1	
2,427	R2
0,246	R5
-2,183	R6
0,252	Constant
<b>Non-standardised coefficients</b>	

*Source:* Prepared by the researchers based on SPSS program results.

The canonical discriminant function is expressed as follows:

$$F = 0,252 + 2,427 R2 + 0,246 R5 - 2,183 R6$$

The purpose of this function is prediction: based on a set of characteristics of an enterprise, one can predict its behaviour in financing its internal growth by classifying it into one of the two study groups. Thus, it is possible to judge the effect of the enterprise's size on its behaviour in growth financing. According to the adopted classification scores, the prediction result will be either (large enterprises) or (small and medium-sized enterprises).

## **Interpretation and Naming of the Extracted Discriminant Function**

The structure matrix essentially assists in naming the extracted discriminant function. This matrix shows the correlation coefficients within the two groups between each predictive variable entered in the analysis and the discriminant function value.

The strongest correlation was with the economic asset turnover rate, which reached 0.503. The correlation with the Value added to economic asset variable was 0.363, and the correlation with net economic profitability was 0.241. The remaining variables were excluded from the analysis.

Based on these correlation coefficients of the variables included in the analysis and forming the discriminant function, the resulting discriminant function can be named Economic Profitability.

## **Extraction of Fisher's Linear Discriminant Function**

The classification function is used to reclassify observations into one of the groups. This function is known as Fisher's Linear Discriminant Function, where the values of the study variables are recalculated and then classified into the group with the highest Value.

**Table 7: Coefficients of Fisher's Canonical Discriminant Function**

	DS	
	1	2
R2	-0,077	-1,272
R5	0,225	0,104
R6	0,897	1,972
Constant	-1,778	-0,763
<b>Fisher's Linear Discriminant Functions</b>		

*Source:* Prepared by the researchers based on SPSS program results.

The classification function coefficients are extracted from the table above, and the two classification functions are written as follows:

**The first function** represents the behaviour of large enterprises

$$F1 = -1.778 - 0.077R2 + 0.225R5 + 0.897R6$$

**The second function** is representing the behaviour of small and medium-sized enterprises

$$F2 = -0.763 - 1.272R2 + 0.104R5 + 1.972R6$$

### **Classification Quality Test**

This table indicates the accuracy of the final classification results—the quality of predicting the enterprise's membership in a particular group using discriminant analysis.

**Table 8: Classification Results**

Total	Predicted Group Classification		DS	
	2	1		
106	99	7	1	<b>Reclassification by functions</b>
312	310	2	2	
100	93,4	6,6	1	%
100	99,4	0,6	2	
75.8% of sample observations were correctly classified.				

*Source:* Prepared by the researchers based on SPSS program results.

It is evident from the table that, based on the variables included in the analysis – which we believe explain the behaviour of enterprises in financing their internal growth according to enterprise size:

- 6.6% of large enterprises were correctly classified and are homogeneous in terms of behaviour;
- 99.4% of small and medium-sized enterprises were correctly classified and are homogeneous in terms of behaviour.

Accordingly, the classification accuracy was 75.8%, representing the proportion of correctly classified observations.

## Conclusion

This study reached a set of conclusions, summarised as follows:

1. Using discriminant analysis, it was found that the behaviour of the study enterprises differs according to enterprise size. The classification accuracy reached 75.8%, indicating that the two groups under analysis are distinct, each with characteristics that distinguish it from the other. Thus, it can be said that the financial strategies employed to achieve growth differ between small and medium-sized enterprises and large enterprises.
2. The analysis obtained a standardised canonical discriminant function that distinguishes between enterprises classified by size based on financial characteristics reflecting their behaviour in financing internal growth. Only three variables showed significant discriminative power: economic asset turnover rate, Value added to economic assets, and net economic profitability.

$F = 0,909 R2 + 0,664 R5 - 1, 231 R6$

Based on the economic and financial interpretations of the ratios included in the analysis, the resulting discriminant function can be named economic profitability.

3. The analysis also led to the extraction of Fisher's two linear discriminant functions as follows:

**The first function** is representing the behaviour and characteristics of large enterprises

$F1 = -1.778 - 0.077R2 + 0.225R5 + 0.897R6$

**The second function** represents the behaviour and characteristics of small and medium-sized enterprises.

$$F2 = -0.763 - 1.272R2 + 0.104R5 + 1.972R6$$

4. Based on the classification quality test results of 75.8%, it was found that:
  - 6.6% of large enterprises were correctly classified and are homogeneous in terms of behaviour;
  - 99.4% of small and medium-sized enterprises were correctly classified and are homogeneous in terms of behaviour.

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