# Impact of Factors on the Development of Leather and Footwear Industry Clusters in Vietnam's Northern Key Economic Region

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**Abstract:** Studying the factors affecting the development of Leather - Footwear industrial clusters in Vietnam's Northern Key Economic Region to determine the level of influence of those factors, thereby identifying the bases for proposing solutions to promote the development of Leather - Footwear industrial clusters in Vietnam's Northern Key Economic Region. By quantitative research method, the collected data, during the research process, were processed using SPSS software. The obtained results show that all 8 factors have a positive impact. In which the factor "Development of supporting industries", "Orientation (choice) of enterprises to participate in the value chain" and "Human resources of enterprises" have the most decisive impact. The research results will provide a repository of empirical research documents on the field of business administration associated with a specific area, the leather-footwear industry. These results also give influencing factors to managers, thereby managers having policies related to the corporate governance process to ensure optimal benefits when participating in the Leather - Footwear industrial clusters in Vietnam's Northern Key Economic Region.

**Keywords:** Industrial cluster, value chain, leather-footwear industry, Northern key economic region.
**JEL classification:** C38, C51, L16.

## 1. INTRODUCTION

The concentration of economic-technically related businesses in a certain territorial area, by forming industrial clusters (Industrial Cluster) is an objective trend of the industrial development process. According to the United Nations Industrial Development Organization (UNIDO, [13]), an industrial cluster is an area where businesses are closely related in terms of production and consumption of products. In each industrial cluster, there are product manufacturing enterprises, raw material manufacturers, raw material suppliers, machinery, tools, spare parts, businesses consuming and exporting products. There may also be organizations providing legal services, training, business support, inspection, certification of origin, goods, logistics, etc. in the industrial cluster. Along with the above-mentioned combination of businesses and organizations, industrial clusters play a great role in organizing linkages between economic entities. In developing countries, the leather and footwear industry holds an important position in the economy. Although it is not an industry with complicated production relationships, the leather-footwear industry has the production specialization of enterprises in this industry shown quite clearly. The establishment and development of industrial clusters in the leather-footwear industry will facilitate the connection of production chains more effectively, increasing labor productivity and competitiveness of leather-footwear products.

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Clusters can include enterprises producing consumer goods and services for export, enterprises providing components and raw materials, and supporting enterprises, research institutes, training institutions, and business support, according to Nguyen Ngoc Son [7]. The domestic chain will help businesses meet the rules of origin, proactively source raw materials, and improve the competitiveness of goods in the domestic market as well as in export, according to Nguyen Hong Yen [8].

The accumulation and centralization of production by enterprises are considered important factors affecting the formation and development of industrial clusters, according to Kuchiki (2007) [5]. Agreeing on this point, Gordon et al. (2000), when studying industrial clusters in the automotive and wood processing industries, gave three factors that help form industrial clusters: (1) The level of land accumulation in production; (2) The development of industrial clusters and zones; (3) Policy on industry development.

The relationship between supporting industries and industrial clusters and business ecosystems has been clarified, as well as policy recommendations to promote supporting industries in Vietnam by Le The Gioi [6]. Supporting enterprises are the link to promote value chains of developed products, in industrial parks and industrial clusters today, the development of supporting businesses has been interested, thereby, forming an ecosystem of businesses in an area to ensure a smooth production and business process (Thu Huyen, 2010) [12].

Thus, there has not been, in the past, quantitative research on the impact of factors on the development of the leather-

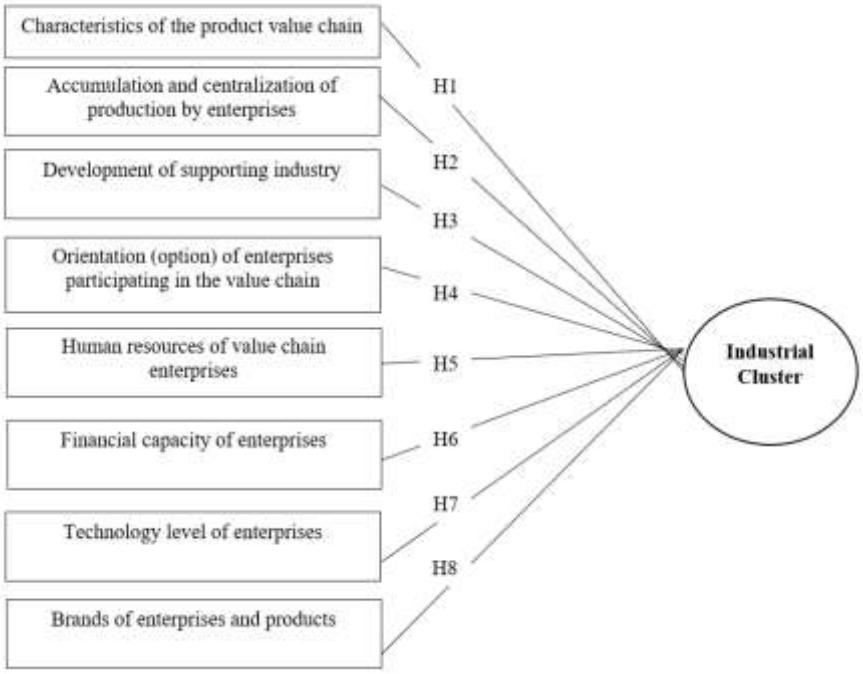


**Fig. (1).** Research model.

Source: Synthesis of many authors.

footwear industry clusters in Vietnam's Northern Key Economic Region. To solve this problem, the article raises a question about the development level of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region. What factors have the greatest influence on the development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region? Inheriting previous studies along with actual research conditions, the author identifies 08 groups of factors affecting the development of the leather-shoe industry cluster in the Northern Key Economic Region that need to be studied. This study aims to assess the current situation and have governance implications for enterprises participating in the leather-footwear industry clusters in Vietnam's Northern Key Economic Region.

Based on an overview of the actual situation of research, theoretical and practical basis on the development of industrial clusters and the results of interviews with experts, the researcher proposes 08 factors affecting the development of the leather-footwear industrial clusters, specifically as follows: (1) The characteristics of the product value chain positively affecting the development of industrial clusters; (2) The accumulation and centralization of production by enterprises having a positive influence on the development of industrial clusters; (3) The development of supporting industries positively affecting the development of industrial clusters; (4) The orientation (option) of enterprises participating in the value chain positively affecting the development of industrial clusters; (5) Human resources of enterprises positively affect the development of industrial clusters; (6) The financial capacity of enterprises positively affecting the development of industrial clusters; (7) Technology application in enterprises positively affecting the development of industrial clusters; (8) Brands of enterprises and products positively affecting the development of industrial clusters.

## 2. METHODOLOGY

In this article, the author has used quantitative research methods to collect information, assesses the current situation of the development of the leather-footwear industry cluster in Vietnam's Northern Key Economic Region, and researches factors affecting the development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region.

### 2.1. Preparation of Sample for Research

According to Gorsuch (1983) [2], in case the sample size is selected based on the rules and requirements of Exploratory Factor Analysis (EFA), the minimum size is 5 times the observed variables ($n$ = 5) *$m$). (Hair et al., 2010) [4]. 24 observed variables used in factor analysis were included in the questionnaire of this study. Therefore, the minimum sample size to be achieved is 24 * 5 = 120 units. Meanwhile, for multivariate regression analysis, the minimum sample size is calculated by the formula: 50 + 8*$m$, in which m is the number of latent factors (Tabachnick and Fidell, 2006) [11]. With some latent variables of 8 (8 independent factors), the minimum sample size for multivariate regression analysis is 50 + 8*8 = 114. In addition, the sampling rule can be based on the error of the variable based on the study population (Saunders and Thornhill, 2007) [10]. Within the scope of the research, the author applies a sample size of over 336 which is suitable for the model and survey accessibility, and at the same time achieves a good level according to the rules of Comrey and Lee (1992) [1]. Due to the reasons given above, the author decided to choose the research sample size as $n$ = 336 samples evenly distributed by departments, units with groups of titles, service, age, and gender.

To achieve the research objectives of this topic, the author conducts a random sampling survey to make it accessible to the respondents. They are willing to answer research questionnaires as well as spend less time and money to collect research information. These are all employees who are working at manufacturing and auxiliary enterprises in the field of leather - footwear.

The 5-point Likert scale is the scale used in this study according to Ricardo and Jolly (1997) [9] to measure aspects of the factors (measure observed variables). Although in principle, the more accurate the scale, the more accurate it is, to avoid confusion for survey respondents, the author uses a 5-point Likert scale with a score of 1 being "totally disagree" and a score of 5 beings "strongly agree".

To collect additional information and data from leather-footwear enterprises on the level of industrial cluster development in this field in Vietnam's Northern Key Economic Region, the research surveyed 60 enterprises carrying out production and business activities in the field of leather-footwear in Hanoi city, Hai Duong province, and Hai Phong city, specifically as follows:

**Table 1. Surveyed Enterprises.**

| No. | Enterprises | Quantity (Enterprises) | Ratio (%) |
|---|---|---|---|
| 1 | Enterprises in the production of leather – footwear | 45 | 75,00% |
| 2 | Enterprises in the distribution and trade of leather - footwear products | 5 | 8,33% |
| 3 | Enterprises in the production of raw materials for the leather-footwear industry (Threads, buttons, glue, soles...) | 10 | 16,67% |
| | **Total** | **60** | **100%** |

Overview of survey participants (leaders, managers representing enterprises): With the initial sample of $n = 360$ in 60 enterprises, after collecting and reviewing, and eliminating unsatisfactory questionnaires, the results obtained from 336 questionnaires can be used to analyze and evaluate the situation. Thus, a total of 336 questionnaires were used for research analysis.

**Table 2. Demographic Characteristics of the Survey Sample.**

| Criteria | Quantity | Ratio % |
|---|---|---|
| 1. Gender | 336 | 100 |
| Male | 195 | 58,04 |
| Female | 141 | 41,96 |
| 2. Age group | 336 | 100 |
| 18-25 | 114 | 33,93 |
| 26-35 | 138 | 41,07 |
| 36-50 | 60 | 17,86 |
| Over 50 | 24 | 7,14 |
| 3. Educational Qualification | 336 | 100 |
| Post-Graduate level | 38 | 11,31 |
| University level | 148 | 44,05 |
| College lively | 115 | 34,23 |
| Intermediate level | 35 | 10,42 |
| 4. Job title | 336 | 100 |
| Board of Directors (Leaders) | 54 | 16,07 |
| Managerial staff (heads, deputy heads of departments, leaders of production groups) | 138 | 41,07 |
| Staff | 144 | 42,86 |

### 2.2. Data Analysis

The data collected through the questionnaires will be processed by SPSS 22.0 software, coded and cleaned, then tested and analyzed according to the following steps: Descriptive statistics, reliability testing of Cronbach's Alpha scale, exploratory factor analysis (EFA), correlation analysis, and multivariate regression to test research hypotheses.

## 3. RESEARCH RESULTS

### 3.1. Descriptive Statistics for Observed Variables

The results of frequency analysis of 8 scales with 24 variables have average values from 3,373 (variable "CN1") to 3,789 (variable "DH1") and are all at a good level. In general, the scale "Characteristics of the product value chain"; "The accumulation and centralization of production by enterprises" and "Orientation (option) of enterprises and enterprises participating in the value chain" have the highest average scores. That proves that survey respondents tend to be more important on these three scales than other factors in the assessment related to the development of leather-footwear industry clusters in Vietnam's Northern Key Economic Region.

8 scales including 24 observed variables measure the influence of objective and subjective factors on the development of leather-footwear industry clusters in Vietnam's Northern Key Economic Region including:

- Characteristics of the product value chain (GT1, GT2, GT2);

- Accumulation and centralization of production by enterprises (TT1, TT2, TT3);

- Development of supporting industries (HT1, HT2, HT3);

- Orientation (option) of enterprises and enterprises participating in the value chain (DH 1, DH 2, DH 3);

- Human resources of enterprises (NL1, NL2, NL3);

- Financial capacity of enterprises (TC1, TC2, TC3);

**Table 3. Descriptive Statistics of Factors Affecting the Development of Leather - Footwear Industry Clusters in Vietnam's Northern Key Economic Region.**

| Variables | Average Value | Standard Error | Standard Deviation | Minimum Value | Maximum Value | Total |
|---|---|---|---|---|---|---|
| GT1 | 3.735 | 0.040 | 0.884 | 2 | 5 | 336 |
| GT2 | 3.678 | 0.038 | 0.832 | 2 | 5 | 336 |
| GT2 | 3.562 | 0.043 | 0.951 | 1 | 5 | 336 |
| TT1 | 3.578 | 0.038 | 0.884 | 1 | 5 | 336 |
| TT2 | 3.716 | 0.044 | 1.102 | 1 | 5 | 336 |
| TT3 | 3.581 | 0.041 | 0.892 | 2 | 5 | 336 |
| HT1 | 3.667 | 0.038 | 0.875 | 1 | 5 | 336 |
| HT2 | 3.662 | 0.043 | 0.918 | 1 | 5 | 336 |
| HT3 | 3.756 | 0.045 | 0.823 | 1 | 5 | 336 |
| ĐH1 | 3.789 | 0.039 | 0.903 | 1 | 5 | 336 |
| ĐH2 | 3.628 | 0.038 | 0.811 | 2 | 5 | 336 |
| ĐH3 | 3.699 | 0.042 | 0.917 | 2 | 5 | 336 |
| NL1 | 3.551 | 0.043 | 0.836 | 2 | 5 | 336 |
| NL2 | 3.582 | 0.036 | 0.725 | 2 | 5 | 336 |
| NL3 | 3.511 | 0.038 | 0.781 | 2 | 5 | 336 |
| TC1 | 3.648 | 0.041 | 0.823 | 1 | 5 | 336 |
| TC2 | 3.715 | 0.032 | 0.763 | 1 | 5 | 336 |
| TC3 | 3.465 | 0.042 | 0.854 | 2 | 5 | 336 |
| CN1 | 3.373 | 0.046 | 0.828 | 1 | 5 | 336 |
| CN2 | 3.465 | 0.033 | 0.798 | 2 | 5 | 336 |
| CN3 | 3.522 | 0.031 | 0.665 | 1 | 5 | 336 |
| TH1 | 3.431 | 0.041 | 0.798 | 1 | 5 | 336 |
| TH2 | 3.527 | 0.044 | 0.816 | 1 | 5 | 336 |
| TH3 | 3.743 | 0.038 | 0.839 | 2 | 5 | 336 |

- Technology application of enterprises (CN1, CN2, CN3);
- Brand of the enterprises and the product (TH1, TH2, TH3).

### 3.2. Reliability Test

24 observed variables were included in eight scales. All these variables are evaluated for reliability through Cronbach's alpha. The value of Cronbach's alpha coefficient is more than 0.6 and the value of the total correlation coefficient is more than 0.3, the scale is considered to achieve the necessary reliability of a research concept. From the analysis results of the survey data, it can be confirmed that all the scales meet the requirements and are kept for analysis. In addition, the Corrected Item-Total Correlation less than 0.3 will be deleted from the model being HT2, NL3, CN3. After removing unsuitable variables, the scales and kept variables, all met the requirements of reliability and were accepted for inclusion in exploratory factor analysis (EFA).

**Table 4. Results of Testing the Reliability of Factors Affecting the Development of Leather-Footwear Industry Clusters in Vietnam's Northern Key Economic Region.**

| N of Items | Scale Mean if Item Deleted | Scale Mean if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted | Results |
|---|---|---|---|---|---|
| Characteristics of the product value chain | | Cronbach's Alpha | | | |
| GT1 | 10.23 | 4.589 | 0.586 | 0.694 | Kept |

| | | | | | |
|---|---|---|---|---|---|
| GT2 | 10.32 | 3.891 | 0.637 | 0.635 | Kept |
| GT2 | 10.46 | 4.517 | 0.418 | 0.785 | Kept |
| Accumulation and centralization of production by enterprises | | Cronbach's Alpha | | | |
| TT1 | 10.32 | 3.887 | 0.624 | 0.652 | Kept |
| TT2 | 10.35 | 3.627 | 0.462 | 0.519 | Kept |
| TT3 | 10.74 | 2.637 | 0.571 | 0.516 | Kept |
| Development of supporting industry | | Cronbach's Alpha | | | |
| HT1 | 11.04 | 2.681 | 0.695 | 0.294 | Kept |
| HT2 | 10.54 | 4.585 | 0.071 | 0.781 | Deleted |
| HT3 | 10.68 | 3.561 | 0.602 | 0.498 | Kept |
| Orientation (Option) of enterprises participating in the value chain | | Cronbach's Alpha | | | |
| ĐH1 | 10.18 | 3.416 | 0.486 | 0.443 | Kept |
| ĐH2 | 10.65 | 3.702 | 0.465 | 0.514 | Kept |
| ĐH3 | 10.56 | 3.461 | 0.669 | 0.456 | Kept |
| Human resources of enterprises | | Cronbach's Alpha | | | |
| NL1 | 10.87 | 3.243 | 0.532 | 0.605 | Kept |
| NL2 | 10.92 | 3.362 | 0.525 | 0.537 | Kept |
| NL3 | 10.46 | 3.463 | 0.238 | 0.712 | Deleted |
| Financial capacity of enterprises | | Cronbach's Alpha | | | |
| TC1 | 10.72 | 3.021 | 0.563 | 0.576 | Kept |
| TC2 | 10.61 | 2.659 | 0.558 | 0.562 | Kept |
| TC3 | 10.72 | 3.281 | 0.582 | 0.577 | Kept |
| Technology application of enterprises | | Cronbach's Alpha | | | |
| CN1 | 10.88 | 4.732 | 0.599 | 0.694 | Kept |
| CN2 | 10.76 | 4.479 | 0.663 | 0.731 | Kept |
| CN3 | 10.37 | 3.44 | 0.243 | 0.788 | Deleted |
| Brands of enterprises and products | | Cronbach's Alpha | | | |
| TH1 | 10.92 | 4.288 | 0.763 | 0.673 | Kept |
| TH2 | 10.95 | 5.154 | 0.453 | 0.843 | Kept |
| TH3 | 10.65 | 4.276 | 0.619 | 0.718 | Kept |

### 3.3. Exploratory Factor Analysis (EFA)

Exploratory factor analysis on the data set of this study was decided to apply to the Author. Exploratory factor analysis (EFA) is a statistical method used to explore the basic structure of a relatively large set of variables. The goal of EFA, a technique in factor analysis, is to identify the underlying relationships between the variables being measured. The author would like to check the integrity of the factor structure designed at the beginning. Exploratory factor analysis has three basic decision points: (1) deciding the number of factors, (2) choosing the extraction method, and (3) choosing the rotation method. R-type factor analysis is when factors are calculated from the correlation matrix, which will be used in the EFA test. The suppression factor value is less than 0.4 absolute value.

The KMO coefficient considers the suitability of factor analysis. This value must have a value greater than 0.5 ($0.5 < KMO < 1.0$) to be eligible for factor analysis to be considered appropriate. Here, the KMO value, after being verified,

gives a result of 0.754, which means that factor analysis is suitable for the research's data set.

**Table 5. KMO coefficient and Bartlett's Test, factors affecting the development of leather-footwear industry clusters in Vietnam's Northern Key Economic Region.**

| **Kaiser-Meyer-Olkin Measure of Sampling Adequacy** | | **0.754** |
|---|---|---|
| Bartlett's Test of Sphericity | Approx Chi-Square | 3651.018 |
| | Df | 188 |
| | Sig. | 0 |

Bartlett test is used to examine the correlation between observed variables in the factor. Barlett test results with Sig. = 0, less than 0.05, showing that the observed variables are correlated with each other in the factor, in other words, the selected variables are correlated and suitable to explain the factors affecting the development of leather-shoe industry clusters in the Northern Key Economic Region.

The Eigenvalue is used to determine the number of new factors in EFA analysis, factors with an Eigenvalue of more than 1 are kept in the analytical model. The Total Variance Explained must be more than 50% for the EFA model to be considered appropriate. Here, the total variance explained as 64.83% meets the required level, so the EFA model is suitable for the research. The table of total variance shows that all 8 factors have been explained and all variables are valid.

Thus, the research is still conducted according to the factor structure originally proposed by the author, with 8 subgroups representing 8 factors: Characteristics of the product value chain; Accumulation and centralization of production by enterprises; Development of supporting industries; Orientation (option) of enterprises participating in the value chain; Human resources of enterprises; Financial capacity of enterprises; Technology application of enterprises; Brands of enterprises and products. And these 8 factors can explain up to 63.558% of the variance of the research model.

Factor loading, also known as factor weights, represents the correlation relationship between the observed variable and the factor. The higher the coefficient, the greater the correlation between the observed variable and the factor. The loading coefficient of the 8 factors is around 0.7, which means that the observed variable has very good statistical significance. The factors used in the survey are suitable and there is no disturbance between the variables.

**Table 6. Total Variance Explained.**

| **Factors** | **Initial Eigenvalues** | | | **Extraction Sums of Square Loadings** | | | **Rotation Sums of Squared Loadings** | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Total** | **% Standard Deviation** | **% Accumulation** | **Total** | **% Standard Deviation** | **% Accumulation** | **Total** | **% Standard Deviation** | **% Accumulation** |
| HT1 | 5.164 | 25.811 | 25.811 | 5.164 | 25.811 | 25.811 | 2.576 | 12.846 | 12.846 |
| ĐH2 | 2.177 | 10.894 | 33.877 | 2.177 | 10.894 | 33.877 | 2.347 | 11.782 | 25.348 |
| GT1 | 1.742 | 8.711 | 46.503 | 1.742 | 8.711 | 46.503 | 2.206 | 10.986 | 36.732 |
| GT3 | 1.478 | 7.304 | 52.456 | 1.478 | 7.304 | 52.456 | 2.043 | 10.254 | 45.142 |
| TC2 | 1.268 | 6.365 | 59.231 | 1.268 | 6.365 | 59.231 | 1.889 | 9.736 | 56.771 |
| TT1 | 1.132 | 5.164 | 63.558 | 1.132 | 5.164 | 63.558 | 1.852 | 9.162 | 61.334 |
| GT2 | 0.879 | 4.342 | 67.158 | 0.879 | 4.342 | 67.158 | 1.762 | 8.328 | 64.183 |
| HT3 | 0.803 | 4.006 | 72.165 | 0.803 | 4.006 | 72.165 | 1.684 | 7.894 | 72.165 |
| ĐH1 | 0.712 | 3.689 | 77.912 | | | | | | |
| TT2 | 0.665 | 3.407 | 81.113 | | | | | | |
| ĐH3 | 0.661 | 3.334 | 83.327 | | | | | | |
| NL1 | 0.652 | 3.287 | 85.876 | | | | | | |
| TH3 | 0.541 | 2.776 | 88.654 | | | | | | |
| TC1 | 0.431 | 2.265 | 90.834 | | | | | | |
| TT3 | 0.364 | 1.793 | 93.887 | | | | | | |
| TC3 | 0.339 | 1.704 | 94.332 | | | | | | |
| CN1 | 0.331 | 1.688 | 96.187 | | | | | | |
| TH2 | 0.287 | 1.372 | 97.353 | | | | | | |
| TH1 | 0.246 | 1.218 | 98.116 | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CN2 | 0.118 | 1.007 | 99.006 | | | | | | |
| NL2 | 0.099 | 0.502 | 100 | | | | | | |
| Extraction method: Principal component analysis. | | | | | | | | | |

### 3.4. Correlation Analysis

**Table 7. Correlation Between Independent Factor and Dependent Variable.**

| | | **Development of the Leather-Footwear Industry Clusters** |
|---|---|---|
| Characteristics of the product value chain | Pearson Correlation | .642** |
| | Sig. (2-tailed) | 0 |
| | N | 336 |
| Accumulation and centralization of production by enterprises | Pearson Correlation | .401** |
| | Sig. (2-tailed) | 0 |
| | N | 336 |
| Development of supporting industry | Pearson Correlation | .548** |
| | Sig. (2-tailed) | 0 |
| | N | 336 |
| Orientation (Option) of enterprises participating in the value chain | Pearson Correlation | .719** |
| | Sig. (2-tailed) | 0 |
| | N | 336 |
| Human resources of enterprises | Pearson Correlation | .512** |
| | Sig. (2-tailed) | 0 |
| | N | 336 |
| Financial capacity of enterprises | Pearson Correlation | .405** |
| | Sig. (2-tailed) | 0 |
| | N | 336 |
| Technology application of enterprises | Pearson Correlation | .453** |
| | Sig. (2-tailed) | 0 |
| | N | 336 |
| Brands of enterprises and products | Pearson Correlation | .591** |
| | Sig. (2-tailed) | 0 |
| | N | 336 |
| ** Linear correlation at significance level 0.01 (2-tailed). | | |

The value of sig less than 0.05 means that the independent variable is linearly correlated. The above table shows the sig results of 8 independent factors, all of which are linearly correlated with the development of leather-footwear industry clusters in Vietnam's Northern Key Economic Region at a 1% significance level, or confidence level up to 99%. The closer the Pearson correlation coefficient is to 1 or -1, the stronger and tighter the linear correlation. In contrast, the closer the Pearson correlation coefficient goes to 0, the weaker the linear correlation. Specific results are presented in Table 3.16. The results show that all independent factors have a strong linear correlation with the development of the leather-footwear industry cluster in Vietnam's Northern Key Economic Region in a positive (+) direction.

### 3.5. Multivariate Regression Analysis

The purpose of the multivariable regression analysis is to determine the relationship between the dependent variable (The development of the leather-footwear industry cluster in Vietnam's Northern Key Economic Region) and the independent variables, through which, the importance of each component in the scale for the development of the leather-footwear industry cluster in the Northern Key Economic Region is indicated. In this research, the author put the independent variables into regression analysis by Backward method to select, based on the criteria of selecting variables with significance level Sig < 0.05. The research performed multivariable regression analysis to consider the effects of independent factors on each dependent variable, and the results are summarized in Table **8**.

Adjusted R Square reflects the degree of influence of the independent variables on the dependent variable. With the dependent variable of "the development of the leather-footwear industry cluster in the Northern Key Economic Region", the adjusted $R^2$ coefficient = 0.865 shows that 8 independent variables are included, affecting 86.5% of the change of the dependent variable, the remaining 13.5% is due to variables outside the model and random error. In general, the 8 factors in the research all have a positive influence on the development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region, due to the adjusted R2 coefficient of more than 50%, the results. This result has important significance because it proves the applicability of the model in practice.

In addition, in this case, the number of factors $k = 8$; the number of observed samples $n = 336$, according to the Durbin Watson table, we have dU = 1,716 and dL = 1,700. Attach the obtained value to the Durbin - Watson test rule bar, we have d in the interval where there is no correlation of adjacent errors.

The ANOVA table has a Sig value < 0.05, which means there is a statistically significant difference in the influence levels of the 8 scales (Characteristics of the product value chain; Accumulation and centralization of production of Enterprises; Development of supporting industries; Orientation (Option) of enterprises participating in the value chain; Human resources of enterprises; Financial capacity of enterprises; Application of technology, the technology of enterprises; Brands of enterprises and products) with the development of

**Table 8. Summary of Regression Model.**

| Dependent variables | *R* | $R^2$ | Adjusted $R^2$ | Estimated standard deviation | Durbin-Watson |
|---|---|---|---|---|---|
| Development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region | .942a | 0.856 | 0.852 | 0.168250474 | 2.012 |

**Table 9. ANOVA.**

| Dependent Variables | | Sum Squared | Df | Mean Squared | F | Sig. |
|---|---|---|---|---|---|---|
| Development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region | Regression | 93.098 | 8 | 15.592 | 504.783 | .000b |
| | Remaining value | 14.415 | 334 | 0.032 | | |
| | Total | 106.415 | 336 | 106.415 | | |

**Table 10. Result of Regression Coefficient of Correlation Beta.**

| Dependent Variables | Independent Variables | Unnormalized Regression Coefficients | | Normalized Regression Coefficient | t | Sig. | Multicollinear Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Standard Deviation | Beta | | | Acceptance of the Variable | VIF |
| Development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region | Block coefficient | -0.149 | 0.064 | | -2.164 | 0.021 | | |
| | H1 | 0.151 | 0.017 | 0.368 | 11.713 | 0 | 0.765 | 1.421 |
| | H2 | 0.065 | 0.018 | 0.275 | 5.761 | 0 | 0.843 | 1.165 |
| | H3 | 0.171 | 0.017 | 0.281 | 11.473 | 0 | 0.742 | 1.463 |
| | H4 | 0.386 | 0.019 | 0.438 | 25.328 | 0 | 0.761 | 1.318 |
| | H5 | 0.121 | 0.016 | 0.352 | 7.812 | 0 | 0.763 | 1.261 |
| | H6 | 0.141 | 0.017 | 0.197 | 11.112 | 0.003 | 0.792 | 1.216 |
| | H7 | 0.124 | 0.024 | 0.272 | 2.852 | 0.006 | 0.781 | 1.264 |
| | H8 | 0.212 | 0.06 | 0.291 | 10.571 | 0 | 0.763 | 1.342 |

leather-footwear industry clusters in Vietnam's Northern Key Economic Region.

For each model of 1 dependent variable, after removing the variables with a Sig significance level of the F test of more than 0.05, the linear regression model will be built to fit the population. Since then, the independent variables in the model are related to the dependent variable of "The development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region" as shown above. All VIF values in the table are less than 10, so there will be no multicollinearity.

From the above analysis results, the regression equation with normalized coefficients Beta can be presented as follows:

$$Y = 0.368*H1 + 0.275*H2 + 0.281*H3 + 0.438*H4 + 0.352*H5 + 0.197*H6 + 0.272*H7 + 0.291*H8$$

## 4. CONCLUSION

The hypothesis research model tests the scales showing the suitability of the factors. The research results have verified the model of factors affecting the development of the leather-footwear industry cluster in the Northern Key Economic Zone in Vietnam with the following factors: Characteristics of the value chain product; Accumulation and centralization of production by enterprises; Development of supporting industries; Orientation (option) of enterprises participating in the value chain; Human resources of enterprises; Financial capacity of enterprises; Technology application of enterprises; Brands of enterprises and products. Thus, the results achieved in the research have satisfied the set objectives and from the results of the regression equation presented above, we can see that the independent variables all have a positive impact on the dependent variable of "The development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region". Specifically, the results show that all factors have a positive impact, which the factor "Development of supporting industries", "Orientation (option) of enterprises participating in the value chain" and "Human resources of enterprises" have the strongest impact. This will be an important basis for the author to propose solutions to complete and promote the development of the leather-footwear industry clusters in Vietnam's Northern Key Economic Region.

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