

# STREAMING SUBSIDIARY AND JOINT VENTURE COUNT IN RELATION TO AGE OF COMPANY, INDUSTRY AND OWNERSHIP TYPE

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**Abstract.** Companies form subsidiaries and joint ventures with varied motives like market entry or expansion, expertise sharing, diversification or risk spread. Literature reflects the existence of these motivation in various countries and these motivations answer to question 'why' subsidiaries and joint ventures. But the present study attempts to investigate to 'which type of companies' do form more subsidiaries and joint ventures. In other words, it attempts to relate age, type of ownership and industry with subsidiary and joint venture count of companies by taking the sample of 200 companies from Fortune India 500 List. The results depict that the industry type doesn't affect either of the two counts whereas age affects joint venture count and old aged companies have more joint ventures as compared to young ones. As far as ownership is concerned, it is more related to subsidiary count in the sense that companies with private ownership and companies affiliated to groups form more subsidiaries as compared to government owned companies, companies with diversified ownership and MNCs.

**Keywords** Subsidiary Count, Joint Venture Count, Ownership, Industry Type, Age

## INTRODUCTION

Joint ventures and subsidiaries has become a preferred option of many companies all around the world with one or another strategic reasons behind that option. On one side if joint ventures facilitate expansion into new and emerging markets, exploiting economies of scale, leveraging the shared resources and expertise, mitigating the risks then subsidiaries on the other side, are formed primarily with motives of seeking tax advantage, liability protection and as a control mechanism. Literature reflects that many studies have been carried out with regard to motives of joint ventures (Kogut, 1988; Tatoglu & Glaister, 1998; Banai et al., 1999; Hyder, 1999). Similarly, many researchers have focused on motives behind creating subsidiaries (Barney, 1991; Birkinshaw et al., 1998; Andersson & Forsgren, 2000; Almeida & Phene, 2004; Achcaoucaou et al., 2014; Jiajun et al., 2021). These motivations very well answer to the question 'why do companies create joint ventures or subsidiaries?' For the answer to the question 'how to create them?', every country has its own regulatory framework in that context explaining the process of creating joint ventures and subsidiaries. It is true that companies create joint ventures or subsidiaries to avail the advantages they carry along but at the same time they pose many challenges like management and control increased running cost, conflict of interests, risk of failures, legal complexities etc. Therefore, not all companies resort to these options. Then, question arises which type of companies resort to this option or which type

of companies have more joint venture and subsidiary count and question has been addressed by the present study. Three factors have been related to this count age, industry type and ownership type. To take up age it has been investigated whether age of the company affects this count, i.e., aging old is another compulsion for such formations. Secondly paper attempts to investigate whether this count is more in specific type of industry like service, manufacturing, technology or infrastructure or industry type doesn't have any relation with this count. Lastly, paper analyses whether type of ownership affect the number of joint ventures and subsidiaries formed. In other words, whether companies affiliated to a particular group, companies with private ownership, government companies, companies with diversified ownership and MNCs have significantly different number of joint ventures and subsidiaries or not.

The study adds to literature by analyzing whether size ownership or industry type affects joint venture and subsidiary count or not in Indian context.

## REVIEW OF LITERATURE AND RESEARCH GAP

Review of literature provides a sound base to any research paper because it not only provides valuable insights to the available related literature but also helps in identifying the research gaps. These literary studies pave the way and provide direction to future research. Many studies have

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been explored to form the basis and scope of present study. Many studies relate to choice between joint venture and subsidiary formation. Sestu and Majocchi (2020) have concluded that choice between 'wholly-owned subsidiary' and 'joint venture' will depend upon ownership structure of two companies which are likely to collaborate. If the firm which is to invest is a family-based business first option is preferred and if both the firms are family-based businesses second option is preferred. Pongelli (2022) has investigated that 'the interaction and trade-off between performance and emotional hazards are the drivers of the choice between subsidiary and joint venture in family firms'. Yiu and Makino (2002) have studied the choice of Japanese companies with regard to 'wholly-owned subsidiaries' and 'joint ventures'. They have studied the transaction cost perspective and institutional perspective. In first perspective, the study concludes that if parent company is R&D intensive firms and is operating in the host country since long, it will make choose to start 'wholly-owned subsidiary' over a 'joint venture' and vice versa. In second perspective, if regulatory environment in host country is strict, there is a probability that an enterprise will choose to establish 'joint venture'. Coudounaris and Valtonen (2021) have investigated the choice of 'wholly-owned subsidiary' vs. exporting as the choice of foreign operation modes of Finnish 05 hard-service firms in Spain and found that most of them were following the first option. Many studies have been carried out with regard to motives of joint venture creation (Kogut, 1988; Tatoglu & Glaister, 1998; Banai et al., 1999; Hyder, 1999). Similarly, many researchers have focused on motives behind creating subsidiaries (Barney, 1991; Birkinshaw et al., 1998; Andersson & Forsgren, 2000; Almeida & Phene, 2004; Achcaoucaou et al., 2014; Jiajun et al., 2021).

No comprehensive study has been conducted with regard to analyzing the effect of type of ownership, industry or age on number of subsidiaries or joint ventures in Indian context hence, present study has been undertaken. It is general observation that Companies in industries with high growth potential or complex technologies might have more subsidiaries or joint ventures hence industry type is likely to affect subsidiary and joint venture count. Older companies might have a greater number of subsidiaries due to a longer history of growth, diversification, and potential acquisitions. Also they might be more likely to engage in joint ventures as they have established relationships and a broader network of potential partners. Young companies might have fewer subsidiaries and joint ventures, potentially focusing on core business activities. It is also expected that count of joint ventures and subsidiaries in different categories of ownership, viz., companies affiliated to a particular group, companies with private ownership, government companies,

companies with diversified ownership and MNCs may vary.

## RESEARCH METHODOLOGY

This section discusses the sample size, sources of data collection, period under study, measurement of variables and technique of data analysis used in the study.

### Sample Size

The Fortune India 500 ranking for 2024 has been used. For all these companies, age ownership type, industry type, subsidiary and joint venture count has been recorded.

### Period of the Study

Period of the study is financial year 2023-24 which is current year for which all the companies have compiled the data for operating results and financial position. All the companies have also filed annual return for the same year with respective Registrar of Companies (RoC).

### Sources of Data

The number of subsidiaries and joint ventures have been taken from Annual Return (MGT-7) of the companies. The MGT-7 form provides uniformity in disclosure of the data and gives subsidiary, joint ventures and associates have been disclosed for all companies. For analysis associates have been included in joint venture count. The age has also taken from MGT-7 and industry and ownership type has been considered as given in Fortune list.

### Measurement of Variables

In the present paper a total of five variables have been used viz., subsidiary count, joint venture count, ownership type, industry type and age. The *subsidiary and joint venture count* is the actual number of subsidiaries and joint ventures of every company and the number for each company has been fetch from MGT-7 filed by every company with MCA (Ministry of Corporate Affairs) and is available on the website of each company under 'investor relation tab'. *Ownership type* has been measured as a dummy variable. Fortune India 500 gives five independent categories of ownership: companies affiliated to a particular group (Category 1), companies with private ownership (Category 2), government companies (Category 3), companies with diversified ownership (Category 4) and MNCs (Category 5). If company belongs to category 1, then it has been measured as 1, if company

belongs to category 2, ownership has been measured as 2 and so on. Fourth variable is *industry type*. In Fortune India 500 list, total 20 types of industries have been identified including retail, auto, cement, power, IT, chemicals, pharma, fertilizers, infrastructure, banks and many others. To make an inclusive sample, the list was sorted industry-wise and top 10 companies from each category were included in sample. No such category has been identified where there are less than 10 companies. Each category has been allotted a dummy number making the dummy number from 1 to 20. For example, if a company belongs to auto industry it has been given dummy number 1, for auto ancillaries dummy number is 2, for banks dummy number is 3 and so on. Last variable *age* has been counted in years from year of incorporation to year 2024. Year of incorporation has been taken from MGT-7 for each company.

## Techniques of Data Analysis

To identify whether the subsidiary count and joint venture count is dependent upon ownership, industry type and age of the company two separate regressions have been run and regression equations are given below:

$$SUBCOU = a + bOWN + cIND + dAGE \quad \dots \text{Equation 1}$$

$$JVCOU = a + bOWN + cIND + dAGE \quad \dots \text{Equation 2}$$

Whereby

SUBCOU is the subsidiary count of the company

JVCOU is the joint venture count of the company

OWN is the ownership type

IND represents industry type

AGE represents age of the company

a represents the constant

b, c, d are regression coefficients of OWN, IND and AGE respectively.

## ANALYSIS AND INTERPRETATION

The analysis has been reported in two parts. First part explains regression results of the subsidiary count as dependent variable and age ownership and industry as independent variable whereas Second part the results of regression whereby joint venture count is dependent variable and independent variables being the same as in First part.

### Subsidiary Count-Ownership, Industry and Age

In this section subsidiary count has been related to three independent variables, viz., age industry type and ownership type.

**Table 1: Descriptive Statistics**

	Mean	Std. Deviation	No. of Entries
Subsidiary	21.9650	39.77997	200
Ownership	3.5500	1.36632	200
Industry	10.5000	5.78075	200
Age	47.7100	27.27629	200

Table 1 explains the mean and standard deviation of four variables. On an average age is 47.7 years with standard deviation of 27.2 years (Min Value: 5 years, Max Value: 145 years) whereas average subsidiary count is approximately 21.96 with standard deviation of 39.7 (Min Count: 0, Max Count: 273). Industry and Ownership are represented through dummies, hence their mean and standard deviations are not material.

**Table 2: Correlation Results**

		Subsidiary	Ownership	Industry	Age
Pearson Correlation	Subsidiary	1.000	.198	.066	.012
	Ownership	.198	1.000	.081	-.161
	Industry	.066	.081	1.000	-.165
	Age	.012	-.161	-.165	1.000
Sig. (1-tailed)	Subsidiary	.	.003	.176	.435
	Ownership	.003	.	.126	.011
	Industry	.176	.126	.	.010
	Age	.435	.011	.010	.
N	Subsidiary	200	200	200	200
	Ownership	200	200	200	200
	Industry	200	200	200	200
	Age	200	200	200	200

Table 2 shows the Pearson correlation values. Table reflects that there is no significant correlation between independent variables, i.e., ownership, industry and age, hence ruling out the chances of multi-collinearity. However, there is a significant positive correlation between the ownership and

subsidiary count. The correlation coefficient between the two is 0.198 at significance level of 0.003. The correlation coefficient of subsidiary count with industry is 0.066 and with age is 0.012 and both are insignificant.

**Table 3: Regression Model Summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error
1	.198	.039	.034	39.09279
Predictors: Constant, Ownership.				

Table 3 is the model summary of regression. The table shows that the predictor is ownership and R value is correlation coefficient only, 0.198 (already shown in Table 1). Adjusted R<sup>2</sup> is 0.034 which reflects that 3.4% of the variance in

the subsidiary count is explained by the ownership. The significance level is 0.005 which is less than 0.05 which indicates that variance is statistically significant.

**Table 4: ANOVA and Step-Wise Regression Results**

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12314.076	1	12314.076	8.058	.005
	Residual	302592.679	198	1528.246		
	Total	314906.755	199			
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.526	7.713		.198	.843
	Ownership	5.757	2.028	.198	2.839	.005
Dependent Variable: Subsidiary.						
Predictors: Constant, Ownership.						

Table 4 presents the stepwise regression results. The table shows that industry and age have been excluded since these are not predictors of subsidiary count. The regression coefficient for ownership is 5.757 and constant is 1.526. The predicted regression equation would be:

Since ownership has been identified as major predictor of subsidiary count and it has been measured as dummy variable, further analysis has been carried out to investigate as to which category of ownership drives the subsidiary count to the maximum and age and industry type don't affect this count.

$$SUBCOU = 1.526 + 5.757OWN + bIND + cAGE$$

**Table 5: Descriptive of Total and Average Subsidiaries in Different Categories**

Group/Category Name	Number of Companies	Total Subsidiaries	Average Subsidiaries (Total Subsidiaries/Number of Companies)
Companies affiliated to a particular group (GACo)	44	1077	24.48
Companies with private ownership(POCo)	79	2643	33.46
Companies with Diversified ownership (DOCo)	13	254	19.54
Government companies (GCo)	43	321	7.47
MNCs (MNCo)	21	98	4.67
Total	200	4393	

The average subsidiary count in case of companies with private ownership is maximum, 33.46 followed by companies affiliated to a group, 24.48. MNCs opt for least subsidiaries, since in that case average subsidiary count is just 4.67.

### Joint Venture Count-Ownership, Industry and Age

In this section joint venture count has been related to three independent variables, viz., age industry type and ownership type.

**Table 6: Descriptive Statistics**

	Mean	Std. Deviation	N
JV	4.1350	6.34176	200
Ownership	3.5500	1.36632	200
Industry	10.5000	5.78075	200
Age	47.7100	27.27629	200

Table 6 explains the mean and standard deviation of four variables. On an average age is 47.7 years with standard deviation of 27.2 years (Min Value: 5 years, Max Value: 145 years) whereas average joint venture (JV) count is

approximately 4.14 with standard deviation of 6.34. Industry and Ownership are represented through dummies, hence their mean and standard deviations are not material.

**Table 7: Correlation Results**

		JV	Ownership	Industry	Age
Pearson Correlation	JV	1.000	-.092	.090	.236
	Ownership	-.092	1.000	.081	-.161
	Industry	.090	.081	1.000	-.165
	Age	.236	-.161	-.165	1.000
Sig. (1-tailed)	JV	.	.097	.103	<.001
	Ownership	.097	.	.126	.011
	Industry	.103	.126	.	.010
	Age	.000	.011	.010	.
N	JV	200	200	200	200
	Ownership	200	200	200	200
	Industry	200	200	200	200
	Age	200	200	200	200

Table 7 reflects that there is no significant correlation between independent variables, i.e., ownership, industry and age, hence ruling out the chances of multi-collinearity. However, there is a significant positive correlation between

the age and JV count. The correlation coefficient between the JV count and other two variables, industry and ownership is insignificant.

**Table 8: Regression and ANOVA Results**

Model Summary						
Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error	Durbin-Watson	
1	.236 <sup>a</sup>	.056	.051	6.17821	1.571	
ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	445.647	1	445.647	11.675	<.001
	Residual	7557.708	198	38.170		
	Total	8003.355	199			
a. Dependent Variable: JV.						
b. Predictors: Constant, Age.						

Model		Coefficients				
		Unstandardized Co-eff		Standardized Co-eff	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.517	.882		1.721	.087
	Age	.055	.016	.236	3.417	<.001

a. Dependent Variable: JV.

Table 8 presents the model summary and step-wise regression results. The table shows that the predictor is age which means as age increase the joint venture count increases. The Adjusted R2 is 0.051 which reflects that 5.1% of the variance in the JV count is explained by the age. The significance level is < 0.001 which indicates that variance is statistically significant. The coefficient for age is 0.055 and constant is 1.517. The predicted regression equation would be:

$$JVCOU = 1.517 + aOWN + bIND + 0.055AGE$$

Hence, it is observed that older companies have more joint ventures in comparison to young companies.

## FINDINGS

- Subsidiary count is affected by ownership type and companies with private ownership and those affiliated with the group are likely to have more number of subsidiaries as compared to MNCs, government owned companies and companies with diversified ownership.
- The subsidiary count is insignificantly related to age and industry type meaning thereby subsidiary creation is by companies irrespective of the industry in which they operate. Also, age of the company doesn't determine the subsidiary count.
- Joint venture count is affected by age in the sense that as age of the company increases it tends to have more joint ventures.
- Industry type and ownership type have no significant relationship with joint venture count.

## LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

The study suffers from the following limitations:

- The results may vary with increase in sample size. Future researchers may increase the sample size to get more significant results.
- The present study has considered only three factors to identify the type of companies in which subsidiary and joint venture count is more than others, future researchers may include more factors to comprehend their study.

- Subsidiary count can further be analysed by categorizing them into wholly-owned and partially-owned or Indian and foreign subsidiaries.
- Similarly, joint venture count can also be further analysed on Indian and foreign basis.

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