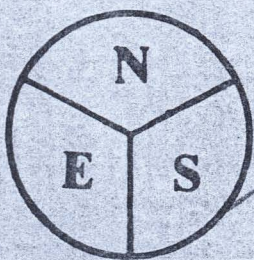


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DETERMINANTS OF THE VOLUME OF PRODUCTION SUBCONTRACTING IN NIGERIA

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ABSTRACT

This paper analyzes the determinants of the volume of production subcontracting in Nigeria. The basic concepts are integration and industrial linkage, and production subcontracting. Data were collected from the sixty-eight contracting firms among 15 industrial estates/areas in the Lagos region. The volume of production subcontracting calculated in monetary terms was found to increase amongst the industry groups over the years. A one-way analysis of variance carried out for the volume of production subcontracting among the contracting firms was highly significant statistically. A stepwise multiple regression analysis, using the volume of production subcontracting as the dependent variable, and the size and structural characteristics of contracting firms as the independent variables was however, not statistically significant. It is argued that the nationality of the firm owner, whether local or foreign, may be significantly related to the volume of production subcontracting.

JEL classification: L11, L22, L23

1. Introduction

FOUR major themes persist in the literature on production subcontracting. These are the nature of production subcontracting, the basis for its existence, the temporal dynamics; and the locational structure. These themes have been approached from a transaction costs perspective as developed by Coase (1937), and later espoused by Williamson (1975, 1979; 1984; 1985); Scott (1983; 1986; 1988); and Storper and Scott (1990). The transaction costs perspective posits that production subcontracting promotes locational agglomeration because external transaction costs between firms in the market – including transportation and communication costs – increase with distance. The propensity to agglomerate (locationally) increases when transactions include small-scale, irregular, unstandardized, or contact-intensive activities that have high unit linkage costs, or

when firms seek to reduce demand fluctuations by improving their customer base through locational clustering (Leung, 1993).

This locational tendency 'is associated with a flexible regime of capital accumulation or mode of corporate organization characterized by intense external transactions between firms (external economies of scale) as a result of unstable market conditions' (Storper and Scott, 1989: 21). A flexible regime of accumulation encompasses new forms of production (including subcontracting), which is characterized by a well-developed ability to shift promptly from one process and/or product arrangement to another. It is a mechanism for rapidly adjusting to changes in the market without negatively affecting the level of efficiency. When the transactions involve bulky, stable, standardized, or easily manageable activities that have low unit linkage costs, a locational dispersal of production occurs. These activities 'contain primarily routine deskilled production processes and are dispersed to peripheral areas where labour or land costs are low' (Scott 1988: 210). This locational tendency, as stated by Storper and Scott (1989: 22) is associated with a Fordist regime of capital accumulation typified by deepened internal transactions within firms (internal economies of scale) as a result of stable market circumstances.' Consequent on this is the emergence of spatial and international division of labour, with the centre dominating in unstandardized skilled labour and the hinterlands depending on routine unskilled activities (Scott and Storper, 1986).

One of the major flaws associated with the transaction costs perspective is the heavy reliance on cost considerations. This has tended to mask our knowledge of the major agent of capitalism, the firm, as it determines production subcontracting. Indeed, Yeung (1994: 462), notes that 'not only does the main capitalist agency, the firm, disappear in the sea of structural current . . . but the central importance of culture and social relations in the capitalist formation is also masked.' A few recent works are explicit on the importance of culture and social relations in relation to production subcontracting (see Leung, 1993; and Jussaume Jr., 1995).

Contemporary thinking in industrial geography places a lot of emphasis on understanding the networks of interfirm relationships. According to Dicken and Thrift (1992: 286),

. . . it is only through an analysis of the networks of interfirm relationships that the firm as the basic element in the capitalist organization of production, can be resurrected. Through the networks of interfirm relationships one can probably overcome the problem created by the imposition of Western-centric theories on to the economic reality in other parts of the world.

Given this position, it may be relevant to examine the relationship between the volume of production subcontracting and the size and structural characteristics of firms.

The present study, therefore, analyzes the relationship between the volume of production subcontracting, and the size and structural characteristics of contracting firms. Two hypotheses are tested. These are:

- i. *there is a significant variation in the monetary values of subcontracting over time*
- ii. *there is a significant relationship between the volume of production subcontracting and the size and structural characteristics of firms.*

The basis for these hypotheses is that variation in production subcontracting is debated in the literature (Scott, 1983; Friedman, 1977), and contemporary thinking in industrial geography places a lot of emphasis on the networks of interfirm relationships, which can be understood through the firm. The measurable attributes of firm size such as, manufactured inputs consumed, sales volume, and intensity of intra-regional inter-industry linkages are stressed as fundamental determinants of the way a manufacturer perceives the production environment (Barr and Fairbian, 1978). No known study has quantitatively assessed the relationship between the volume of production subcontracting and the size and structural characteristics of the firm. In order to do this, there is a sense in which the measurable attributes of firm-size and structural characteristics of the contracting firms can be used to explain the volume of production subcontracting.

2. Conceptual Framework

The relevant concepts/theories reviewed here are integration and industrial linkage, and production subcontracting. Integration involves all forms of collaborative and co-operative ventures among industrial organizations over space. There are two forms of integration, namely vertical integration and horizontal integration. Vertical integration is 'a process which refers to the extent to which successive stages in production and distribution are placed under a single firm shaped by internal economies of scope' (Lee, 1994: 292). This involves the amalgamation of productive units at different stages of production. By contrast, horizontal integration is a production system whereby 'firms producing related products (competitive, complementary or by-products) operate under central control' (Lee, 1994: 292). For further details, see Wood (1969), Keeble (1976), Dicken and Lloyd (1990), and Johnson (1994). This term is most widely used in industrial geography to indicate the interdependence among firms and its effects on locational choice.

There are three forms of linkage. These are backward, forward and sideways linkages. Backward linkage is a situation where a firm makes use of the products of some other firms as input in its own production process. Forward linkage occurs when a given firm produces its products for use in the production process of other firms. Sideways linkage involves the flow of information between firms at the same level of the production process.

Linkage is possible over a wide range of distances. Strong or complex linkage ties usually operate over short distances. The foregoing suggests that linkage reflects a distance decay function. Linkage is possible over a wide range of distances. On a national scale,

. . . the systematic ties of a plant to others have locational significance. Plants located primarily in relation to raw materials or markets form a small proportion of total industrial activity. On the local scale, connections to adjacent or nearby plants do exist, but such connections do not account for the concentration of heavy industrial areas. (Wood, 1969: 34)

The measurable attributes of firm size, such as manufactured inputs consumed, sales volume, and intensity of intra-regional inter-industry linkages, are fundamental determinants of the way a manufacturer perceives the production environment (Barr and Fairbain, 1978). Linkage is facilitated by certain basic factors (see Hagerstrand, 1964; Imrie, 1986; O'Farrel and Loughlin, 1980; Klein, et al., 1982; Sargant, 1961; Townroe, 1969; Smith, 1981; Scott and Bergman, 1995) for details.

Production subcontracting is a production arrangement wherein firms 'subcontract' or externalize some of their manufacturing activities to other independent firms. The contractor provides the order, while the subcontractor does the work, ie, processes materials, produces the needed parts, components, or assembles the product(s) according to the production specifications and the marketing arrangements of the contractor (UNIDO, 1974; Leung, 1993). Production subcontracting is thus a form of industrial linkage and it has been classified based on several criteria (see Sharpston, 1975; Taylor and Thrift, 1975; Chaillou, 1977; Watanable, 1971, 1972, 1980; Lawson, 1992; Leung, 1993).

3. Data Collection Procedure

Data were collected from 68 contracting firms (10.7% of all operating firms in the Lagos region) identified during the reconnaissance survey carried out during the months of November and December 1995, covering the 15 industrial estates/areas in the Lagos region (see Ajayi, 1998 for details). Table 1 shows the distribution of contracting firms among the industrial estates/areas.

The number of contracting firms varies from one industrial estate/area to the other. While two of the industrial estates/areas (Gbagada and Yaba) have no contracting firms, Ilupeju industrial estate alone has 11 (representing 16.2% of the total). Ikeja/Ogba/Isheri industrial estate/area accounts for 9 (13.2%), while Oregun and Agbara industrial estates/areas have 7 (10.3%) contracting firms each. Iganmu and Isolo have 6 (8.8%) each, while all other industrial estates/areas account for numbers ranging from 1 (1.5 per cent) to 5 (7.4 per cent). The reconnaissance survey was followed by questionnaire interview conducted from January to August 1996.

Table 1. Distribution of Contracting Firms in the Lagos region

S/No.	Industrial estate/area	Number of contracting firms	Percentage
1.	Ikeja/Ogba/Isheri	9	13.2
2.	Oregun	7	10.3
3.	Gbagada	0	0.0
4.	Ikorodu Road/Ojota	3	4.4
5.	Oshodi/Agege	5	7.4
6.	Matori	1	1.5
7.	Isolo	6	8.8
8.	Ilupeju	11	16.2
9.	Mushin/Surulere	4	5.9
10.	Yaba	0	0.0
11.	Ijora	2	2.9
12.	Iganmu	6	8.8
13.	Sango/Ota	5	7.4
14.	Agbara	7	10.4
15.	Apapa/Tin Can Island	2	2.9
	TOTAL	68	100.0

The questionnaire was administered to all contracting firms in each of the industrial estates/areas, and the outlying firms were also visited. In each case, the questionnaire was left with the industrialist/designated officer to complete. In some cases, several visits were made to the establishment before the completed questionnaire could be retrieved. All the contracting firms satisfactorily completed the questionnaire by the end of the fieldwork. The relevant aspects of the questionnaire included such issues as the industry group (line of activity), the location (addresses – industrial estate/area), the size and structural characteristics of the firms. The size and structural characteristics of a firm are age, capital

investment calculated in monetary terms (₦), plant-size (floor space m^2), capacity utilization (%), staff strength (workforce), and number of years since firm started production subcontracting. The questionnaire also sought information on the number of subcontractors engaged, the type of production subcontracting, and the volume of production subcontracting.

The *Industrial Directory of Nigeria* (1993 edition), published by the Manufacturers' Association of Nigeria (MAN), served as the basic source of secondary data. The 1993 edition was the most recent and up-to-date at the beginning of the fieldwork for this study. The directory contains a list of manufacturing establishments employing at least 10 workers. Other publications include the *Nigerian Vanguard Yellow Pages* (1991 edition), a publication of the Vanguard newspaper, which is a directory of business enterprises in Nigeria; the *Nigeria Yearbook* (1992 edition); the *Directory of Incorporated Companies* (1993 edition). These other sources were used to supplement information provided by the MAN industrial directory. Information pertaining to the name, location, and addresses of contracting firms were obtained from these sources.

4. Results and Discussion

4.1 The volume of production subcontracting

The volume of production subcontracting examined in this section is measured in terms of the monetary value of transactions between subcontracting partners.

Table 2. Temporal Variation in the Volume of Production Subcontracting

Year	Volume of production subcontracting (₦)		
	Aggregate	Volume in the Lagos region	% of the aggregate in Lagos region
1990	191,372,930	127,251,530	66.49
1991	232,319,575	149,438,675	64.32
1992	354,189,806	262,867,606	74.22
1993	466,565,734	357,273,934	76.58
1994	697,429,186	527,251,000	75.60
TOTAL	1,941,877,231	1,424,082,745	73.33

Table 2 shows that the volume of production subcontracting for a five-year period is about ₦2.0 billion. Lagos region accounted for 73.33 per cent. Whereas, the aggregate volume of production subcontracting was ₦191,372,930 in 1990, it increased to ₦697,429,186 by 1994. This represents a 264.43 per cent increase within the five-year period. In the Lagos region, the volume of production

subcontracting which was ₦127,251,530 in 1990 increased to ₦527,251,000 by 1994. This shows that the volume of production subcontracting in the Lagos region increased by 314.25 per cent during the period. The implication of this is that the increase in the volume of production subcontracting in the Lagos region was higher than in the whole country. During the 5-year period of this study, the Lagos region accounted for more than 60 per cent of the aggregate volume of production subcontracting in any of the years. In addition, the volume of production subcontracting in the Lagos region expressed as a percentage of the aggregate total increased from 66.49 per cent in 1990 to 75.60 per cent by 1994.

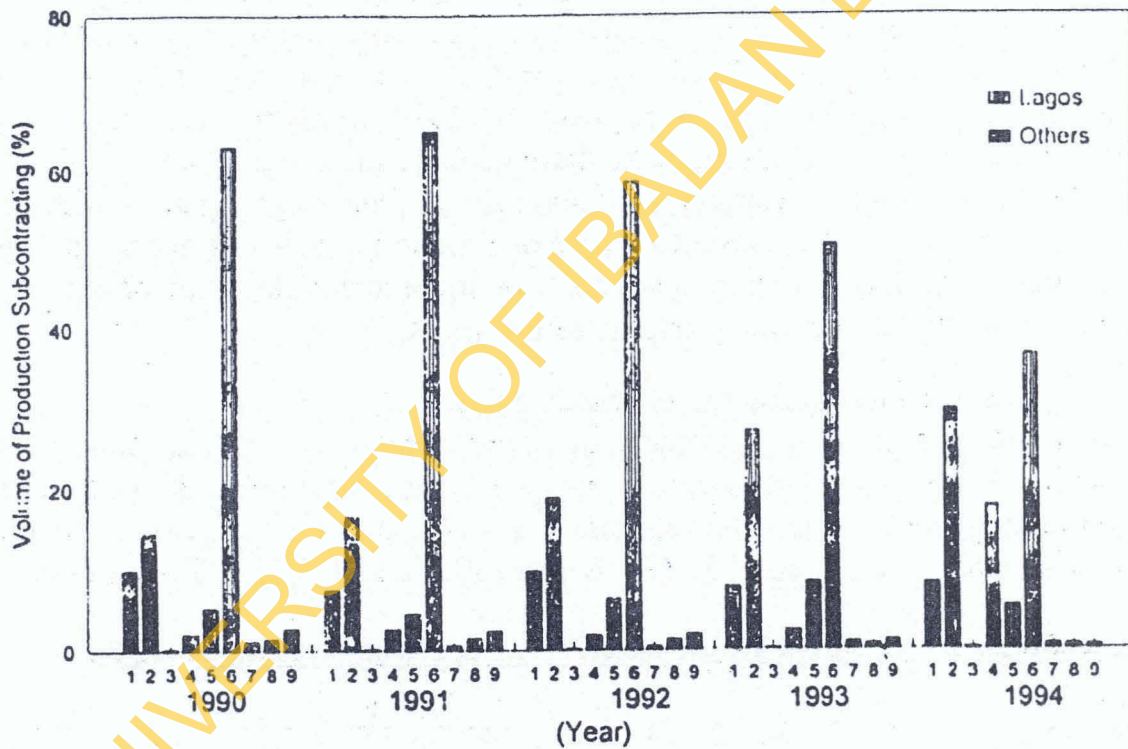


Figure 1. Variation in the volume of production subcontracting amongst industry groups

1. Food, beverages and tobacco
2. Chemicals and pharmaceuticals
3. Domestic and industry plastics and rubber
4. Basic metal, iron and steel and fabricated metal
5. Pulp, paper and paper products, printing and publishing
6. Textiles, wearing apparel and leather products
7. Wood and wood products (including furniture)
8. Non-metallic mineral products
9. Motor vehicle and miscellaneous assembly

4.2 Temporal variation among the industry groups

Figure 1 shows the temporal variation in the volume of production subcontracting among the industry groups. Textiles, wearing apparel and the leather industry group accounted for a remarkably high percentage of the volume of production subcontracting in each of the five years. For instance, in 1990, this industry group accounted for 63.14 per cent, out of which 32.37 per cent came from the Lagos region. By 1992, when the volume of production subcontracting in this industry group was ₦151,074,294 (63.05 per cent of the total), the Lagos region accounted for 33.47 per cent; by 1994 when this industry group accounted for ₦255,981,337, the share of the Lagos region was 22.47 per cent.

The next in importance in terms of volume of production subcontracting is the chemicals and pharmaceuticals industry group. The volume of production for this group was not more than 30.0 per cent of the aggregate volume in any of the years. Whereas, the chemicals and pharmaceuticals industry group accounted for 14.68 per cent of the aggregate volume of production subcontracting in 1990, the Lagos region accounted for 12.78 per cent. By 1994, when this industry group accounted for 29.94 per cent, the total share of the Lagos region was 28.17 per cent. The domestic and industrial plastic and rubber industry group accounted for less than 1 per cent – the smallest volume of production subcontracting in any of the years. The Lagos region accounted for the entire volume of production subcontracting in this industry group in all the years.

4.3 Temporal variation among contracting firms

The temporal variation in the volume of production subcontracting among the contracting firms, shown in table 3, indicates that the volume of production subcontracting was less than ₦10 million in 64 (94.1 % of the firms in 1990 and 1991. This number dropped to 57 (75. %) in 1993, and 42 (61.8 % by 1994.

Table 3. Temporal Variation in the Volume of Production Subcontracting among Firms

Volume of production subcontracting (₦)	YEAR				
	1990 No (%)	1991 No (%)	1992 No (%)	1993 No (%)	1994 No (%)
< 10,000,000	64 (94.1)	64 (94.1)	57 (83.8)	51 (75.0)	42 (61.8)
10,000,000 - 20,000,000	3 (4.4)	2 (2.9)	8 (11.8)	11 (16.2)	16 (23.5)
20,000,000 - 30,000,000	1 (1.5)	2 (2.9)	2 (2.9)	5 (7.4)	5 (7.4)
30,000,000 - 40,000,000	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.5)	2 (2.9)
40,000,000 - 50,000,000	0 (0.0)	0 (0.0)	1 (1.5)	0 (0.0)	1 (1.5)
50,000,001 +	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.9)
TOTAL	68 (100.0)	68 (100.0)	68 (100.0)	68 (100.0)	68 (100.0)

The number of firms where the volume of production subcontracting was between ₦10 and ₦20 million increased from only 3 (4.4%) in 1990 to 16 (23.5%) in 1994. Similarly, the number of firms where the volume of production subcontracting was between ₦20 and ₦30 million increased from 1 (1.5% in 1990 to 5 (7.4%) by 1994. While only 1 (1.5%) firm each had a volume of production subcontracting more than ₦30 million in 1992 and 1993, 5 (7.4%) had more than this amount by 1994. Of the 5, only two had a volume of production subcontracting more than ₦50 million.

In order to test whether or not the volume of production subcontracting varied over the years, a one-way analysis of variance was carried out. This analysis was carried out based on the volume of production subcontracting by each of the 68 contracting firms from 1990 to 1994. The analysis of variance 'tests if there is real difference between the means of independent observations and indicates the magnitude of such difference' (Wetherill, 1972: 263). The analysis of variance assumes: (i) homogeneity of variance throughout the groups; (ii) independence of the observations; and (iii) normality of the errors, that is, errors are uncorrelated. The one-way analysis of variance 'provides an optimal test for trends across categories of an interval-level independent variable' (Kim and Kohout, 1975: 398). The result of the analysis is displayed in table 4.

Table 4. Analysis of Variance (ANOVA) for the Volume of Production Subcontracting

Source of variation	Df	Sum of squares	Mean square	F	Level of significance
Explained	4	3.1719898E + 15	7.929975E + 14	10.268	0.0001
Residual	335	2.5872172E + 16	7.723036E + 13		
Total	339	2.9044162E + 16	8.567599E + 13		

The result is significant at 0.0001 per cent level. This confirms the hypothesis, which states that the volume of production subcontracting varies significantly over time. This result tends to confirm Scott's (1983) assertion that production subcontracting increases as economic conditions deteriorate and strong cost cutting measures become imperative.

4.4 Determinants of the volume of production subcontracting

4.4.1 Procedure

The determinants of the volume of production subcontracting among the 68 contracting firms were analyzed using the stepwise multiple regression analytical technique. The stepwise multiple regression analytical technique is a search procedure for identifying which independent variables, previously thought to be

of some importance, actually have the strongest relationship with the dependent variable (Hauser, 1974). The multiple regression equation is given by:

$$Y_c = a + b_1X_1 + b_2X_2 + \dots + b_nX_n + e$$

where:

Y_c	=	the dependent variable
a	=	base constant
$b_1 \dots b_n$	=	regression coefficient of $X_1 \dots X_n$
$X_1 \dots X_n$	=	the independent variables
e	=	stochastic disturbance or error term

The stepwise multiple regression model may be used for prediction or explanation (Blalock, 1964; Olsson, 1970) and the type of procedure used usually reflects this difference (Hauser, 1974). In this circumstance, the stepwise multiple regression is used for explanation. When it is used for explanation, the emphasis is on individual regression coefficients and on establishing significant relationships, so that the objective is to maximize R^2 subject to significant b_1 's. Since it is not usually possible or worthwhile to compute all equations, the most common stepwise procedure is forward selection (occasionally backward elimination), which adds variables on the basis of their partial correlation (or t -tests) with the dependent variable, such that at each stage the variable with the highest partial is added to the equation (Hauser, 1974). The procedure continues until no further variables which are significantly non-zero, can be added to the equation. The forward selection procedure is used in this study.

4.4.2 *Choice of variables*

There have been no studies that explicitly statistically analyzed the determinants of the volume of production subcontracting. A few studies (e.g., Barr and Fairbain, 1978) have identified a number of measurable variables that explain the perception of manufacturers. These are manufactured inputs consumed, sales volume, and intensity of intra-regional inter-industry linkages. Some of these variables may guide the choice of variables here.

The volume of production subcontracting measured in naira (₦), that is the amount of money paid by each contracting firm to her subcontractors in 1994, is the dependent variable. The independent variables are the measurable size and structural characteristics of the contracting firms as provided by the officials. These variables are: (1) age of establishment (years), (2) capital investment (₦), (3) plant-size (floor space m^2), (4) capacity utilization measured as a percentage of installed capacity of plant, (5) staff strength (employment size), (6) number of years since firm has been involved in production subcontracting, and (7) number

of production subcontractors engaged. The choice of these variables is based on the fact that the literature on industrial linkage suggests that the measurable attributes of firms' size are fundamental determinants of the way a manufacturer perceives the production environment. Therefore, there is a sense in which the size and structural characteristics of the firm may be expected to determine the volume of production subcontracting by firms.

It is expected that firms that have higher scores in any of these variables are likely to be more involved in production subcontracting than firms with lower scores. The basis of these expectation is that larger firms are likely to produce more than smaller firms. In other words, they are likely to be more interested in cost cutting measures often associated with production subcontracting (Holmes, 1986). In addition, firms with a larger number of employees (workforce) are likely to have an organized workers' union. In order to avoid or reduce the unions' encroachment on the prerogative of the management, they are likely to engage more in production subcontracting activities, and as such reduce the costs of maintaining a large workforce (Sheard, 1983). Also, increased production subcontracting is used as 'a means of collectivizing work tasks so as to avoid the heavy cost penalties incurred in the partial or inefficient use of capital' (Scott, 1983:121).

4.4.3 *Test for multicollinearity*

The multiple regression model, like any other statistical technique, makes some basic assumptions. These assumptions are that there should be no autocorrelation, multicollinearity, homoscedasticity, and that the samples are randomly selected from the total population. Other assumptions are that the data set is normally randomly distributed, and that the independent variables are measured error free. In general terms, some of these assumptions taken to have been met when the model is being used (Gould, 1970; Koutsoyiannis, 1973). However, the problem of multicollinearity, if present in the data, must be corrected. This is necessary because multicollinearity impairs the efficiency of the regression model when it is used for explanatory purposes (Farrar and Glauber, 1967; Haitovsky, 1969; Poole and O'Farrel 1971; and Hauser, 1974). Multicollinearity exists among the independent variables where the pairwise correlation is more than 0.8 (Hauser, 1974). Two ways of resolving the problem of multicollinearity are:

1. Ideally, new data on the relevant variables should be obtained, or *a priori* estimates of some of the parameters should be incorporated into the analysis (Gouldberger, 1964), but usually neither of these solutions is possible (Hauser, 1974).
2. One of a pair of variables, which are collinear, is excluded from consideration, this is the so-called 'zero-restriction'.

Clearly, such a procedure can be based only on pair-wise correlation. The main problem concerns which variable to exclude and the consequent possibility of specification bias (Hamburg, 1977). Table 5 shows the correlation matrix between the dependent variable (Y) and the independent variables (X_1 to X_7) on the one hand, and amongst the independent variables on the other. The correlation between the dependent variable and the independent variables is low. The highest is 0.36 between the volume of production subcontracting and staff strength (workforce). However, the table shows that there is no problem of multicollinearity amongst the independent variables. The implication of this is that all the independent variables can be included in the regression model. This is because, the efficiency of the regression model in providing the required explanation will not be impaired.

Table 5. Correlation Matrix amongst the Variables

	Variable	Y	X1	X2	X3	X4	X5	X6	X7
Y	Volume (N) of subcontracting	1.000							
X_1	Age of the establishment	0.178	1.000						
X_2	Capital investment (N)	0.262	0.177	1.000					
X_3	Plantsize (floor space)	0.113	-0.097	-0.94	1.000				
X_4	Capacity utilization (%)	-0.091	-0.264	-0.200	0.079	1.000			
X_5	Staff strength (workforce)	0.359	0.158	0.268	0.040	0.281	1.000		
X_6	Number of years since firms started production subcontracting	0.261	-0.638	-0.026	-0.022	0.006	-0.171	1.000	
X_7	Number of subcontractors engaged	0.061	0.264	0.117	0.212	-0.196	-0.001	-0.328	1.000

4.4.4 Result of the stepwise multiple regression analysis 68 (100.0)

The results of the stepwise multiple regression in table 6 shows that only one step is possible in the stepwise multiple regression analysis. The criterion for selecting the variables in the analysis was set at 0.05 per cent tolerance range. As expected, plant size (floor space), capacity utilization, and staff strength were not significant in explaining the volume of production subcontracting. Even the other variables,

Table 6. Summary of the Stepwise Multiple Regression Model

Step	Variable Description	b	Standard error of b	t	Level of significance	R	R
1	Number of subcontractors	3791906.8714	1775169.082	2.136	0.0368		
	Staff strength	12397.373997	8016.119093	1.547	0.1272		
	Plant size (floor space)	-43.120948	79.934388	-0.539	0.5916		
	Capital investment	0.004918	0.0044324	1.137	0.2599		
	Age of establishment	-314849.0932	253919.7149	-1.240	0.2198	0.41630	0.17330
	Capital utilization	57198.037396	104918.9881	0.545	0.5877		
	Number of years since firms have been involved in production subcontracting	197449.97176	286248.4035	0.690	0.4930		
	Constant	-13138536.56	29463734.30	-0.446	0.6573		

which were expected to significantly explain the volume of production subcontracting, were not significant. The R is 0.41630, while R^2 is 0.17330. This shows that the size and structural characteristics of firms explain only 17 per cent of the volume of production subcontracting.

The overall test of significance of the stepwise multiple regression analysis is as low as 0.1045 or 10 per cent. This implies that the result is not statistically significant. The hypothesis, which states that there is a significant relationship between the volume of production subcontracting and the size and structural characteristics of firms, is thus rejected. In other words, there is no significant relationship between the volume of production subcontracting and the size and structural characteristics of contracting firms. This suggests that the network of interfirm relationships through production subcontracting is not significantly related to the size and structural characteristics of the firm. The interest has been to determine whether or not there is a significant relationship between the volume of production subcontracting and the size and structural characteristics of firms. It is possible that some other variables, such as the nationality of the firm's owner may be significantly related to the volume of production subcontracting. Given the fact that industrialization in Nigeria is still at an early stage of development, one may expect that the nationality of a firm's owner ie, whether a Nigerian or a non Nigerian, may have a significant relationship with the volume of production subcontracting. Other things being equal, a foreign-run firm may be more involved in production subcontracting. This may be so because the 'main' company may have been successfully involved in such a corporate strategy in the home country or in any other part of the world.

5. Conclusion

This paper shows that the volume of production subcontracting increased among the industry groups, and varied significantly amongst the contracting firms over the years. In fact, textiles, wearing apparels, and the leather industry group dominated the production subcontracting scene. In addition, the paper shows that the volume of production subcontracting is not significantly related to the size and structural characteristics of the contracting firms. The result is not statistically significant. This result is at variance with the postulations of the understanding of the networks of interfirm relationships. It is possible however, that the result will be at variance with the findings of similar studies if conducted in a developed country, and/or in any of the newly industrializing countries (NIC's) of the world.

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