Effect of Government Policies and Extent of Its Implementation on the Foundry Industry in Nigeria.

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Abstract

The study identified the current government policies guiding the foundry industry in Nigeria. The level of awareness of the government policies and strategies by the stakeholders were examined, the extent of the implementation of the policies and its strategies were investigated. Also the factors influencing the performance of the foundry industry in Nigeria were assessed. This was done with a view to develop appropriate and adequate policy framework for improving the performance of the foundry industry in the country. The study area for this research covered two geo-political zones in the country. Four sets of questionnaires were developed for this study and these were aimed at achieving the objectives of the research. Data from the survey were analysed using statistical package for social scientist (SPSS). Both descriptive and inferential statistical analysis were used. The study concluded that though majority of the stakeholders were aware of the government policies but they were not involved in the policy formulation. The extent of implementation of the policies and strategies guiding the foundry industry is low. Among the factors inhibiting the growth and development of the foundry industry include inadequate availability of raw materials, erratic power supply, inconsistency in government policies on importation of metal cast products, obsolete machineries, inadequate infrastructures, policy discontinuity and insufficient fund for R&D. The study recommends the following among others; increment in the awareness level on the government policies and strategies guiding the foundry industry in Nigeria, review of the implicit policy for foundry industry in the National Metal Policy or separate completely the policies and strategies guiding the foundry industry from the National Metal Policy and putting more efforts in place in terms of fund and infrastructure to ensure effective implementation of the policy to be able to achieve the set goals and objectives.

Keywords: Foundry, Government policy, Performance, Awareness, Stakeholders

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I. Introduction

Industrialization is needed for rapid growth and development of any economy therefore leading to quick structural transformation. Most developing countries have failed to achieve industrial development despite several industrial policies and reforms.Okere(2012) identified government policies as critical elements in determining the rate of economic growth, the levels of private investment and the magnitude of credit to the private sector. In Nigeria, different administrations have put in much effort to change the nation's economic policy through reforms and technology adoptions but with little positive effect. This can be attributed to the nation's heavy dependence on imports. Virtually, all products are being imported and this is not adding value to the economic situation of the country (Essien, 2011; Okereke, 2014). The dependence of Nigeria on imports for a great part of her consumption expenditure and all her capital expenditure has been total (Okigbo, 1992). Afolabi (2008) reported that Nigeria's dependence on foreign assistance has led to production of half-baked graduates and technicians with little knowledge of practical application. Adenikinju and Chete (2002) expressed similar opinion that the degree of dependence on imported inputs is still high due tofactors such as inadequate supply of locally available materials, unreliability of contract supplier, poor quality of what is available and failure to meet user specifications. These, coupled with poor funding of science and technology (S&T) education in the country manifest in low wages, low technology, production of light consumer goods, and resources and labour intensive industrial sector.

A survey carried out by the Manufacturing Association of Nigeria (M.A.N) in 2005/2006 showed that 10% of manufacturing industry in Nigeria operates at 48.8% of installed capacity. Results of the survey

reflectsthat about 60% of the companies operating were barely able to cover their average variable costs while 30% had completely closed down (Okafor, 2008, Adegbamigbe, 2007 and Udaejah, 2006 cited in Udah 2010).

Foundry processes involves making the mold and the core (if required), melting and pouring the molten metal into the mold cavity, solidification and cooling, removing the cast and core from the mold and finally fettling the product. Foundry processes can be divided into two parts based on the materials being cast, that is, whether ferrous or non-ferrous foundries. It could also be classified based on products, quantity and organizational framework (Ibhadode, 1997). Foundry castings are required for a wide range of use and range in size from components weighing a few grams to castings produced for ships and off-shore oil rigs, which can weigh up to 300 tonnes.

Foundry industries are developed by many industrialized economies to support their manufacturing sectors. Global production of foundry products is about 74 million metric tons in 2003, with the top 10 producing countries accounting for 82 % (60.3 MT) of output. Seven out of these 10 countries, accounts for 41% (30.4 MT) of the output.

II. Literature Review

2.1 Overview of the Foundry Industry

The contribution of the industrial sectors to national productivity in Nigeriahas undergone a steady decrease, hence economic development has been very low while poverty level has increased tremendously (Elijah and Elias, 2011). The industrial sector in the country like other developing countries is dominated by manufacturing industries producing construction materials, textiles, footwear and processed foods using simple assembly process technologies (Egwaikhide, 1997). This view was also supported by Adejuyigbe (1979), who opined that, Nigeria's manufacturing industries consists largely of assembly plants with little backward linkages in the economy since most of the inputs are imported.

Casting is one of the ancient methods of metal shaping. It includes processes such as melting of metals, manufacture of moulds, solidification, shakeout and fettling of the castings (Beeley 2001). Majority of the metal scraps collected from automobile and heavy industries for recycling goes to foundries to make new products. Foundry practice is an intermediary basic industry complementing forging and machining process through which metallic raw materials like pig iron, crop ends (steel scrap) ferrous alloys could be processed, refined and shaped into new products in the form of machine components and spare parts. The advantage that foundry has over other metal shaping facilities such as rolling mills are that the capital expenditure and time for erecting foundry units are lower and castings are normally associated with high accuracy (Agboola, 2008). Ezekwe (1995) described foundry as "the mother of all industries" because it provides components and raw materials for all other industries. This implies that all machineries and equipment needed for technological advancement have their origin from the foundry and that there will be no true industrialization without effective functioning foundry industry.

2.2 Policy

Policy is the basic principles which guide an organization. The organization could be at firm level or national level. It is also the declared objectives that a government or an organisation seeks to achieve and preserve in the interest of national community. It is typically described as a principle or rule to guide decisions and achieve rational outcome(s). Policy is not normally used to denote what is actually done. It is usually referred to as either procedure or protocol (Anderson, 2005). Ikelegbe, 2006 defined policy as a course of action of a person, group or government within a given environment providing obstacles and opportunities which the policy was proposed to utilize and overcome in an effort to reach a goal or realise an objective or a purpose. Okotoni (1996) cited in Ogunsola (1996) viewed policy as statement of goals or a course of general plan of action adopted by government, party, organisation or an individual to deal with specific problems at hand.

2.2.1 Government policies on foundry industry in Nigeria

The policies available for foundry industry can be found in The Ministry of Mines and Steel Development under the Natural Minerals and Metal Policy. The consumption rate of steel and other metals products is regarded as a major index of industrialization of a nation. By that yardstick, when compared with some developing nations, Nigeria is lagging far behind in industrial development. The Federal Government therefore established a Bank of Industry (BOI) to offer specialized services to industry. The services include provision of soft loans and advances to large, medium, small and cottage-type industries. At state level, State Investment Corporations and other agencies exist to promote industrial development.

III. Materials And Method

The study area for this research covered two geopolitical zones Southwest and Southeast in the country and the Federal capital territory (FCT). The choice of these zones was informed by the high number of foundry firms in some of the states, relevant knowledge institutions and the government policy institutions and agencies located in the area. Lagos and Oyo States were selected in the Southwest, while Anambra State was selected in the Southeast. There are about 62 foundry firms in the country and they are located in about ten states of the Federation (Atanda and Ibitoye, 2004). Forty two (67%) of the foundries are located in the South West with Lagos State having about 28 (45%) out of the 67% in the South West. South East accounts for about 9 (14%), North Central 6 (9.68%), North West 4 (6.54%), South-South 1 (1.61%) and 0 (0%) in the North East Zone.

The study population includes foundries and their product consumers in the study area, knowledge institutions and policy implementing agencies. Total number of respondents was 245. The research instruments used were questionnaire and oral interview guide. The information obtained was used to supplement the data obtained through the use of questionnaire. Secondary data were obtained from some public institutions such as Nigeria Bureau of Statistics (NBS) and Nigeria Institute for Social and Economic Research (NISER). The data was analysed using statistical package for social scientist (SPSS). Both descriptive and inferential statistical analyses were used which include Relative Index (RI), Mean rating, Frequency count, Percentages and Analysis of variance (ANOVA).

IV. Results And Discussion

The stakeholders involved in designing the policies and strategies guiding the foundry industry include the implementing government agencies, the foundry entrepreneurs, knowledge institution and consumers of the products of the industry. Two departments from the Ministry of Mines and Steel Development are involved in the implementation of these policies. These are the Steel Department (ferrous and nonferrous department) and the Metallurgical Inspectorate and Raw Materials Development Department. The policies guiding the foundry industry is embedded in the National Minerals and Metals Policy. The mineral and metal act was enacted in 2007. Table 1 shows these important key players in the foundry industry using relative importance (R.I). The government representatives and foundry entrepreneurs were rated first followed by the knowledge institutions and foundry products consumers respectively. The level of awareness about the government policies, involvement in the design and development of the metal policy by the respondents from the consumers of the foundry products, the foundry entrepreneurs and the knowledge institutions respectively were shown in Table 2.

Table 1: Important key players in foundry industry

S/N	Characteristics	R.I	Rank
1.	Government representatives	1.0	1
2.	Foundry entrepreneurs	1.0	1
3.	Knowledge Institution	0.94	3
4.	Foundry Product Consumer	0.89	4

Key: R.I = Relative Index

Only 34%, 54.5% and 62.9% of the respondents of the respondents from the Foundry firms, knowledge institutions and consumers of the foundry products respectively were aware about the policy while just 15.6%, 14.3% and 14% of the respondents in the same order were involved in the development of the policy. This shows that the level of awareness among the foundry respondents is quite low and the involvement in the development of the policy is low generally among all the respondents.

Table 3 shows mean rating of the level of awareness on the objectives of the government policies and strategies guiding the foundry industry by the foundry entrepreneurs, the knowledge institutions and the foundry product consumers. Some of the objectives include manpower development, establishing a vibrant metal industry, producing high quality foundry products and utilization of locally sourced raw materials. The foundry entrepreneurs have the highest level of awareness of the policy objectives in terms of banning of exportation of metal scraps (2.66), producing high quality foundry product (2.57), utilization of locally sourced raw materials (2.53). The knowledge Institution were aware of utilization of locally sourced raw materials (2.71), producing high quality foundry product (2.68) and banning of exportation of metal scraps (2.66) respectively while the foundry product consumers have the highest level of awareness in terms of manpower development (2.95), production of high quality foundry product and local technology development (2.88). These results showed that the awareness levels about majority of the policy objectives and strategies guiding the foundry industry were on the average side. For all the respondents, the level of awareness on reduction of tariff on imported raw materials, increasing tariff on imported foundry products and giving incentives to the foundry industry was very low (least

mean =1.40, 1.49. 1.45 respectively). This shows that there is the need to create more awareness about the policy among the stakeholders.

The extent of implementation of the policies and strategies guiding the foundry industry were considered by looking into the extent of the effectiveness of the objectives of the policy and strategies guiding the foundry industry (Table 4). These were analysed based on the likert scale of 1 to 4 by respondents from the knowledge institutions and the foundry firms. Respondents from the knowledge institutions considered manpower development (2.64), creation of investment friendly environment (2.64) as policy objectives that has been implemented up to an extent. This contradicts the findings of Onipede (2010) and Jimoh (2013) which reports that shortage in manpower has remained a major setback to Nigeria's technological breakthrough.

Table 2: Level of awareness and development of the policies by the stakeholders

S/N Characteristics	Consumer; Freq. (%)		F.F; Freq. (%)		K.I; Freq. (%)	
	Yes	No	Yes	No	Yes	No
1. Awareness of Government						
Policies	73 (62.9)	43 (37.1)	16 (34)	31 (66)	12 (54.5)	10 (45.5)
2. Involvement in the						
development of the metal policy						
	14 (16.9)	69 (83.1)	7 (15.6)	38 (84.4)	3 (14.3) 1	8 (85.7)

Key: K.I= Knowledge Institutions, F.F = Foundry Firms, Freq. = Frequency

Table 3: Awareness level of the policies and strategies guiding the foundry industry in Nigeria

Policy Objectives	Mean			
	Consumers	F.F	K.I	
Manpower development	2.95	2.38	2.04	
Producing high quality foundry products	2.88	2.57	2.68	
Local technology development	2.88	2.11	2.22	
Maintaining good environment and industrial safety measures	2.81	1.84	2.17	
Establishing a vibrant metal industry	2.76	2.11	2.35	
Utilization of locally sourced raw materials	2.68	2.53	2.71	
Banning of exportation of metal scraps	2.67	2.66	2.66	
Creation of investment friendly environment	2.66	2.07	2.18	
Encouraging private sector participation in foundry	2.64	2.36	2.46	
Employment generation	2.45	2.30	2 65	
Increasing global competitiveness	2.34	2.12	2.45	
Wealth creation and poverty reduction	2.26	2.36	2 85	
Reducing tariff on imported raw materials	1.57	1.40	1.45	
Giving incentives to foundry industry in terms of health, labour an	d land 1.56	1.65	1 45	
Increasing tariff on imported foundry products	1.55	1.49	1.56	

Key: K.I= Knowledge Institutions, F.F = Foundry Firms

Highly aware =4, Aware =3, Slightly Aware =2, Not Aware =1

Table 4: Extent of Effectiveness of the Implementation of Government Policy Objectives

Factors	Mean Rating			
	K.I	F.F		
Manpower development	2.64	2.88		
Creation of investment friendly environment	2.64	2.75		
Giving incentives to foundry industry in terms of health, labour and	2.60	3.00		
land				
Banning of exportation of metal scraps	2.60	2.00		
Encouraging private sector participation in foundry	2.56	2.63		
Local technology development	2.56	2.63		
Maintaining good environment and industrial safety measures	2.48	3.00		
Utilization of locally sourced materials	2.48	3.25		
Wealth creation and poverty reduction	2.40	2.63		
Increasing tariff on imported Foundry products	2.36	1.68		
Production of high quality foundry products	2.36	2.50		
Reducing tariff on imported raw materials	2.32	1.63		
Employment generation	2.28	2.50		
Increasing global competitiveness	2.12	2.00		
Air pollution, waste and emission	2.04	2.33		

Key: K.I= Knowledge Institutions F.F= Foundry Firms, Very Effective=4, Effective=3, Slightly Effective =2, Not Effective =1

Sapru (2004) also opined that for a policy to be effectively implemented, there must be adequate personnel and the financial resources to do so. This is followed by banning exportation of metal scrap (2.60) and creation of friendly investment environment (2.60). Scrap metal industry plays an important role in the supply of feedstock

to the foundry industry. Other countries like Kenya, Tanzania and Colombore have also imposed ban on exportation of metal scraps. The foundry firms considered utilisation of locally sourced material (3.25), banning of exportation of metal scraps (3.00), maintaining good environment and industrial safety measures (3.00) as the policy objectives that has been implemented up to an extent. The least implemented of the policies as rated by the respondents are reducing tariff on imported raw materials (1.63), increasing tariff on imported foundry products (1.68), air pollution, waste and emission (mean =2.04) and increasing global competitiveness (2.12) indicating that high import duty is a set back to the implementation of the policy. This is in agreement with the findings of Okorafor (2014) which states that import duty and tariff favour imported finished products over imported raw materials with which the same product could be made locally is one of the polices that has not been implemented. (Effiong 2013 and Ugwuanyi) observed that factors such as inadequate data, over ambitious policy goals, policy instability, compromise and conflict during implementation and corruption account for part of the implementation problem in Nigeria.

Table 5 shows the level of agreement of the respondents on the factors influencing the implementation of the policies and strategies guiding the foundry firms. All the respondents (foundry firms, consumers and knowledge institution strongly agreed that non availability of basic infrastructure and improving the strategies in implementing the policies affected the extent of implementation. Eminue (2005) opined that Nigeria has often formulated good policies but these get bungled at the implementation stage. Both the foundry entrepreneurs and consumers also strongly agreed that the policy could be more effective if enough capital was invested for implementing the policy (mean =4.20, 4.04) respectively. This is in line with the observation of Dick (2003) and Ikelegbe (2006) that government does not budget adequately to enable the public bureaucracy to implement the formulated polices properly. Makinde (2005) also corroborate the fact that insufficient financial funds has resulted in inability to enforce laws and provision of inadequate services. The respondents from the knowledge institutions and foundry firms also agreed bank's reluctance to shift from short term loan to long term loan hindered the

Table 5: Level of Agreement with Factors Affecting Extent of Policy Implementation

Characteristics	Mean Rating			
	F.F	K.I	Consumer	
Non availability of basic infrastructure is affecting the extent of policy implementation	4.78	4.20	4.45	
poncy implementation	4.78	4.20	4.20	
Improving the strategies used in implementing the policy				
Poor partnership between government and private sector is affecting the implementation	4.12	4.53	3.65	
Enough capital was not invested into the policy	4.20	4.00	4.04	
	3.57	4.12	4.02	
Lack of skill and manpower affected the policy implementation	4.51	4.32	3.98	
Banks reluctance to shift from short term finance to long term finance is affecting the policy implementation				
induce is directing the policy implementation	2.66	3.08	2.80	
Involvement of stakeholders added value to the policy				
The strategies used in implementing the policy	3.09	2.08	2.50	
Increment in the level of awareness of the policy guiding the foundry industry	3.13	2.56	2.33	
Government support for the policy guiding the foundry industry has increased implementation	2.52	2.20	1.94	

Key: K.I= Knowledge Institution, F.F = Foundry FirmsStrongly Agreed=5, Agreed=4, Strongly Disagreed=3, Disagree=2, Not sure=1

effectiveness of the policy implementation. However, in India and Malaysia, banks were mandated to give financial assistance to the private sectors and also render other services as need be (Bato, 2006).

Table 6 presented the factors affecting the production and performance of the foundry industry in Nigeria. Analysis shows that the foundry firms, knowledge institutions and the consumers considered erratic power supply, flooding market with imported foundry products as factors that were highly affecting the performance of the foundry industry This is in agreement with the findings of Nwosuet al., (2006) that poor electricity supply is one the greatest infrastructure problem confronting the manufacturing sector which imposes a huge cost on the firm arising from idle production workers, spoiled materials, lost output, damaged equipment and restart costs. The consumer and implementing agencies considered obtaining local raw materials as the factor highly affecting performance. Other factors affecting performance are high cost of materials, low patronage of local products and high cost of labour which is similar to the problems facing the foundry industry in China (China Foundry Association, 2012). However studies revealed that erratic power supply and flooding market with imported goods are the ones highly affecting production and performance of foundry industry. Manufacturers' Association of Nigeria (M.A.N) reports the result of a survey carried out by the United Nations Industrial Development Organisation UNIDO in 2008 on the factors affecting the growth rate of the manufacturing industry. The result showed that lack of infrastructure, lack of access to funds and low demand for product are major factors affecting growth rate. This support the findings of Onuoha (2009) in a survey carried out on the manufacturing firms in Abia State in 2005 that the manufacturing sector's environment in Nigeria is problematic and harsh. The findings also indicate that these problems can lead to business failure which essentially is seen as risingoperational costs without increasing sales volume. Some of these factors according to respondents during interview have led to some foundries folding up totally or operating at skeletal levels and their equipment are grounded and depreciating in value. In Nigeria between 2000 and 2008, about 820 manufacturing companies have closed down or temporarily suspended production (Borodo, 2008). The findings are similar to a survey carried out by UNIDO in 2007 with a group of national and international experts in Uganda. Similar challenges are also facing the foundry industry in Ghana and this has resulted into production of low quality cast products compared to imported ones. In addition, lack of proper quality control management practices resulted into lots of reworks during the manufacturing processes of the various

Table 6: Factors Affecting Production and Performance of the Foundry Industry

Factors	Mean				
	Consumer	K.I	I.A	F.F	
Erratic power supply	3.65	4.00	3.00	3.72	
Flooding market with imported goods	3.60	4.00	3.50	3.72	
Obtaining local raw materials	3.8	3.12	3.75	3.54	
High cost of raw materials	3.57	3.56	3.63	3.76	
Low patronage of local products	3.45	3.80	3.63	3.40	
High cost of labour	3.52	3.24	3.88	3.04	
Cost of other source of power	3.25	3.56	3.00	3.72	
Inadequate man power	3.14	3.72	3.00	3.14	
Technology transfer	3.14	3.48	3.13	3.10	
Inexperienced labour/human resources	3.05	3.68	2.88	3.14	
Usage of obsolete equipment	3.02	3.52	3.13	2.93	
Delivery time	3.10	3.44	3.63	2.54	
Transportation	2.98	3.20	3.00	2.98	
Lack of innovation	2.89	3.44	2.75	2.91	
High exchange rate	2.54	3.64	3.50	2.53	
High import duty	2.48	3.64	3.25	2.40	
Obtaining imported materials	2.25	3.44	3.00	2.52	

Key: K.I= Knowledge Institutions, I.A=Policy Implementing Agencies, F.F = Foundry Firms Highly Affected =4, Affected = 3, Slightly Affected =2, Not affected =1

components (Andrews and Gikunoo, 2011). The findings of this study also support studies in Uganda that frequent breakdown lead to low capacity utilization averaging below 50%, lack of proper technical skills, no serious linkages between the foundry industry and research institutions to complement on quality and work skills and the problem of intermittentpower supply that is detrimental to the continuous casting process are some of the factors affecting the performance of the foundry among the mean rating of the factors affecting the production and performance of the foundry industry.

V. Conclusion & Recommendation

It was discovered that not all the stakeholders were aware of the government policies and strategies guiding the foundry industry in Nigeria and the level of awareness is on the average. Majority of the stakeholders were not involved in the design and development of the policy. The extent of implementation of the policy objective was found to be low and that is why the foundry firms in Nigeria is lagging behind. Also, factors such as erratic power supply, inadequate raw materials, flooding market with imported goods, inadequate

infrastructure and low patronage of the locally made foundry products were identified as factors affecting the performance of the foundry industry in Nigeria. The following are thus recommended after the study:

(i) Government should review the implicit policy for foundry industry in the National Metal Policy or separate completelythe policies and strategies guiding the foundry industry from the National Metal Policy. This will effectively involve the stakeholders in the policy objective design and in the development of the framework for the impleme

ntation strategies.

- (ii) There should be increment in the awareness level on the government policies and strategies guiding the foundry industry in Nigeria. This can be done through the media and adverts
- (iii) More efforts should be put in place in terms of fund and infrastructure to ensure effective implementation of the policy to be able to achieve the set goals and objectives.
- (iv) Incentives should be given to the foundry entrepreneurs to encourage them.
- (v) Banning of exportation of scraps and importation of foundry products should be emphasized the more and effected.
- (vi) Factors affecting the performance of the government policies should be critically looked into and means of sustaining the foundry industry should be given prompt attention.

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