

# A Performance Analysis of Outsourced and In-sourced Human Resource Practices of Manufacturing Firms in Nigeria

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This study examined the outsourcing and in-sourcing of human resources and the effect on performance manufacturing firms in Nigeria as empirical works are rare for strategic decision making. We employed survey research to gather data from 116 respondents working in manufacturing firms listed in the Nigerian stock exchange. Results from the ordinary least square regression reveals that outsourced human resource (HR) activity have significant positives, while in-sourced HR activity has a negative relationship with performance of manufacturing firms in Nigeria. Also, we confirmed that the improved performance of manufacturing firms will be related to a higher difference between HR outsourcing and in-sourcing. Specifically, it is found that training and development, payroll, and recruitment were the specific outsourcing activities that significantly and positively predict performance of manufacturing firms, while HR recruitment was the only significant in-sourcing activity affecting performance of manufacturing firms negatively. Generally, it is concluded that outsourced is better than in-sourced HR practices for manufacturing firms in Nigeria. Therefore, firms seeking improvement in performance can outsourced its payroll, training and development and recruitment activities.

**Key words:** *Outsourcing, In-sourcing, training and development, Human Resources, recruitment, payroll, HR information technology.*

## Introduction

As the global business environment becomes more unpredictable and is characterised by increased competition, the demand for proactive strategic measures to increase productivity, profitability, quality service, cost reduction has not only intensified, but the need to enhance organisational performance has become the cardinal goal of corporate organisations. More worrisome are the dwindling of valuable resources and the changes in technology and market structures. All these must be articulated into a strategy that will make the organisation achieve competitive advantage. The need to respond to market changes on regular intervals and the challenge of predicting the direction of such change imply that organisations must focus on their core competencies and capabilities and let go of what cannot be handled economically (Melvor, 2008). These instabilities in the global market have compelled business firms to re-examine and scrutinise their methods of manufacturing goods and services and effect some novel changes in their processes so as to attain desired economic returns.

In order to remain competitive, business organisations pursue a number of strategies, including leaned up productivity, business process re-engineering (BPR), outsourcing and integrated supply chains, etc. Scholars and practitioners are in support of firms focusing on activities crucial to attaining competitive advantage and the outsourcing of low- value added activities (Kahraman, Öztayşi, & Onar, 2018). The trend toward outsourcing may be because firms could remain focused and develop core competencies, thereby maximising the potential effectiveness of those activities. Also, outsiders can offer better and cheaper services that could lead to improved corporate performance (Alzhrani, 2020).

The current interest of most Nigerian and offshore companies in outsourcing HR functions speaks volumes of the crucial role of human capital in facilitating the actualisation of corporate goals. This trend notwithstanding, evidence of its performance effect is scarce (Gilley, Egglund, Gilley, & Maycunich, 2002). Some researchers hold the view that increased reliance on outsourcing may result in reduced innovation, unhealthy competition from outsourcing partners, and a depletion in the power to control the activities outsourced. This creates serious doubt in the performance effect of outsourcing strategies. Kakabadse and Kakabadse (2000) suggested that absolute outsourcing may create obstacles if attention is not paid to in-house HR and recommended the retention of some non-core HR activities.

Empirical literature has suggested that in-house HR could lead to job insecurity, decreased productivity, decreased employee morale and loyalty, absenteeism and increased employee turnover. Kalinzi, (2016) also cautioned against total outsourcing as it may lead to a loss of control over HR activities. On the contrary, the literature also shows that outsourced firms reap the benefits of better service delivery, improved profitability, low costs compared to in-house operations, and is ultimately competitively advantageous against rival firms. For instance,

Olannye and Okoro (2017) noted that outsourcing recruitment activities enhances the chance of a firm's time to hire, provide confirmable metrics, reduce costs, increase the excellence of the individual candidate pool, and increase governmental compliances.

It is on record that training (Gainey and Klass, 2013), recruitment, payroll, and Human resource information system/technology (HEIS/HRIT) (Pritchard, 2014) among other cardinal HR activities, whether outsourced or in-sourced, has a positive and in some cases a negative link with firm performance. It may have been on this premise that some authors argued that the performance effects of outsourcing training remain largely unexplored (Gilly et al., 2002). Moreover, most studies on HR outsourcing are carried out in developed countries, which are inadvertently adopted in the developing nations. But it is instructive to note of developing countries that variations in organisational culture, strategies, structures and firm size amongst other indices of measurement, it may be misleading to say that outsourcing has the potential to create greater competitive advantages than in-sourcing that results in improved corporate performance. These conflicting views and theoretical gaps underpin the basis for this investigation.

In this study therefore, we generally investigate the effect of: (1) outsourcing; (2) in-sourcing; and (3) the difference between outsourcing and in-sourcing on the performance of firms in Nigeria. To know the effect of each dimension of each HR activity on the performance of firms in Nigeria, the following objectives are investigated: The effect of (1a) Outsourced training; (1b) Outsourced recruiting; (1c) Outsourced payroll; (1d) Outsourced HRIS; (2a) In-sourced training; (2b) In-sourced recruiting; (2c) In-sourced payroll; and (2d) In-sourced HRIS on performance of firms in Nigeria

## **Review of Relevant Literature**

### ***Theoretical Underpinnings***

HR is undeniably an important asset of an organisation. This claim is budded from the description that a firm's resource must be rare, valuable, inimitable and unique in order to be a source of sustainable competitive advantage (Peteraf and Barney, 2003). Thus, in management literature, the discussion of organisational assets in relation to its performance is most often based on the propositions of the resource-based theory or view (RBV or RBT) and agency theory and so is the present study. The RBV stems from the principle that a firm's competitive advantage lies in their internal resources including HR. The underlying premise of RBV is that firms differ in fundamental ways because each firm possesses unique resources which determine its level of performance. Therefore, the striking inference of the theory shows that organisational resources are the basic determinant of performance.

Agency Theory is used to illustrate a situation where there is a delegation of responsibilities from one party to another and work is carried out based on the forms of agency stipulation. Mainly, the theory has been used to appraise a firm's performance and effective managerial decision making. An agency relationship exists when one or more persons (the principal) hire other persons (the agent) as decision-making specialists to perform a service. In this case, the principal is the outsourcing company and the agent is the outsourcing provider. A number of studies have applied agency theory in performance analysis with different arguments (Panda and Leepsa, 2017; Bendickson, Muldoon, Liguori, and Davis, 2016; Olannye and Okoro, 2017). For our purpose, the underlying pillar of a beneficial agency relationship is the provision of vital information by the outsourcing firm to the vendor. This theory is good for this study as it helps to prove how parties in a relationship (agency) seek effective agency agreements or contracts based on certain assumptions of people being risk averse, having parochial interests and being rational.

Empirically, quite a number of studies have been conducted on HR outsourcing with only a few on comparative performance analysis with in-sourcing, yet the result reported was on the effect of outsourcing only. Other studies reported positive associations between outsourcing and firm performance (Baba, 2019; Jirawuttinunt, 2015). The method of analysis adopted in these studies was the Pearson Product Moment Correlation (PPMC). In the present study, a change in method of analysis from PPMC to Ordinary Least Square (OLS) regression is considered for a causal investigation.

### ***HR Outsourcing and In-Sourcing***

Human capital remains the greatest asset of an organisation. The popularity in outsourcing HR activities has grown speedily in the last few decades; with many organisations opting to outsource all or some of its HR tasks. In spite of the glowing glamour of HR outsourcing, not all HR activities are candidates for outsourcing but are better if in-sourced. Lepak and Snell's (1998) model of virtual HR offers a pathway to help decide which HR activities will yield competitive advantages and whether they should be outsourced or in-sourced. This model derived its credence from transaction cost economics and the resource-based view (Peteraf & Barney, 2003). From the angle of transaction cost economics, only not firm specific activities should be outsourced, while the resource based perspective is in favour of outsourcing activities that are not directly linked to core competencies.

In summary, the model situates its argument on the ground that, to enhance superior performance, firms should retain activities providing a competitive advantage and outsource other activities to expert vendors. In the work of Mitchell (2018), it was reported that activities with low strategic importance and social interdependence should be outsourced with a major determining factor being cost and flexibility. This suggests that there are pitfalls to HR

outsourcing, which experts say results in rising personnel turnover rates as well increased vulnerability to being held hostage by external vendor. This could also mean that certain activities of a firm may be very critical and dangerous to outsource without compromising vital secrets to competitors and in that case in-sourcing becomes ideal (Olannye & Okoro, 2017).

Based on these arguments, the following hypotheses are developed:

- H1: An outsourced HR activity has a significant positive influence on the performance of manufacturing firms.
- H2: In-sourced HR activity has a significant positive influence on the performance of manufacturing firms.
- H3: The difference between Outsourced and In-sourced HR activity has a significant positive influence on the performance of manufacturing firms

### ***HR Training and Development Activities***

To achieve corporate objectives, managers and employees require training and continual development if their potential is to be effectively utilised. Gainey and Klass (2013) linked customer satisfaction with outsourcing external training in the same line with other theorists like Goldstein (1998). Several other studies have also established the significant correlation between training and different dimensions of firms' performance, but these studies did not specifically state if the training and development was outsourced or in-sourced. Put it differently, the performance effects of training as well as the performance effects of outsourcing may have been established in some past studies (Gainey and Klass, 2013), but known exclusive empirical studies on the effect of outsourced and in-sourced training and development on organisational performance are hard to come by. Sadly, many Nigerian firms appear unable to attract outside training expertise on account of the high costs. In view of these, we hypothesised that:

- H1a: An outsourced training and development activity has a significant positive influence on the performance of manufacturing firms
- H2a: An in-sourced training and development activity has a significant positive influence on the performance of manufacturing firms

### ***HR Recruitment Activities***

Recruitment deals with the process of attempting to locate and encourage potential applicants to apply for existing or anticipated job vacancies. Arguably, outsourcing recruitment activities is a worthwhile decision because the scarcity of skilled manpower is the greatest constraint and risk of HR management in contemporary settings; and it is assume that external vendors have the proven competence to source for and provide the manpower needed. Outsourcing recruitment activities increase a company's time to hire, provide confirmable metrics, reduce

costs, increase the excellence of the candidates' pool, and increase governmental compliances (Olanye and Okoro, 2017). By extension, it can be said that the calibre of the personnel recruited determines the quality of output or the performance of the firm. However, whether outsourced recruitment can actually outperform in-sourced recruitment is what extant literatures are arguably neglecting to address. In view of the fact that, over time, organisations are faced with the challenge of pruning down recruitment expenses while still looking out for the best technically skilled personnel to engage, it is expedient to know which of the HR practices can best drive corporate performance by testing the following hypotheses:

H1b: An outsourced recruitment activity has a significant positive influence on the performance of manufacturing firms.

H2b: An in-sourced recruitment activity has a significant positive influence on the performance of manufacturing firms

### ***HR Payroll Activities***

Payroll activities appears to be one of the most outsourced transactional repetitive HR tasks (Cicek and Ozer, 2011), yet it has lower strategic impact on other HR functions (Gilly et al., 2004). The intention of contemporary HR practitioners is to make HR activities more cost-effective and outsourcing has proven to be the perfect tool used to minimise the cost of non-core activities such as payroll processing (Lepak and Snell, 1998). Payroll administration is a very sensitive activity, its transactional rather than relational nature makes the task easy and relatively simple to execute. As such, it might be more profitable to handle in-house rather than to outsource even though studies have recommended that organisations should outsource peripheral functions such as payroll service to enhance firm performance (Cook, 2016). On these arguments, we hypothesised thus:

H1c: An outsourced payroll activity has a significant positive influence on the performance of manufacturing firms.

H2c: An in-sourced payroll activity has a significant positive influence on the performance of manufacturing firms

### ***HR Information Technology Activities***

Human resource information systems (HRIS) is a relatively new activity of HR management. HRIS is a technology-based system used to acquire, store, manipulate, analyse, retrieve and distribute pertinent information regarding the organisation of human resources. Constant updates in technology make HRIS unattractive because of the huge expenditure to upgrade, modify and maintain it; many firms may not have the specialised skills in-house to deal with it (Pritchard, 2014). Being a new activity in the HR functions, many organisations are yet to ascertain its efficacy in enhancing robust organisational performance. Empirically, many

studies have been conducted on HRIS with some confirming its effects on different dimensions of corporate performance (Peslak, 2011; Marler and Fisher, 2013; Maier et al., 2013).

Moreover, several theories including resource-based view (RBV), transaction cost theory, coordination theory and social exchange theory (Lai, et al., 2008) have confirmed a significant influence of firm performance by HRIS. As argued, hardly would any modern firm break-even without the application of IT in its operations. The HRIS impact on firm performance places it on a high pedestal for outsourcing consideration. Despite the aforementioned benefits, no empirical study (to the best of our knowledge), have justified the performance effect of HRIS outsourcing or in-sourcing with its high cost of acquiring in mind. On this note, we hypothesised that:

H1d: An outsourced HR information system activity has a significant positive influence on the performance of manufacturing firms.

H2d: An in-sourced HR information system activity has a significant positive influence on the performance of manufacturing firms

## **Methodology**

### ***The Design and Instrumentation***

Consistent with many studies on HR outsourcing (see Olannye and Okoro, 2017; Hoang, 2018; Mchunu, 2018), a cross-sectional survey research design was adopted in this study. The design is implemented using a quantitative research approach, which is based on positivist philosophy. A total of 170 manufacturing firms are listed in the Nigeria Stock Exchange. Three (3) top personnel officers from the rank of CEOs, HR manager, Heads of personnel units from each company were targeted, giving a total of 510 targeted population to whom the questionnaire were sent electronically for response in line with past authors. A total of one hundred and sixteen (116) usable copies were returned and this represents a 31% response rate.

To test for non-response bias, differences in total respondents and firm representation for responding and non-responding firms were examined. No significant differences were detected. To test for common method bias, we performed the Harman One Factor test; and based on the result, the variance explained by the first factor is 14.83%, which is less than the threshold of 50%, and total variance explained by all factors is 72.49%. Thus, the variance explained by the first factor is less than 50% of the total variance. Therefore, the effect due to common method bias is minimal.

The sample comprises 116 employees working in manufacturing firms whose age and working experience in the industry ranges from 35 to 50 and 8 to 13 years respectively. The size of the sampled firms ranges from 50 to 200 employees and above. Similarly, the years (age) in which the firms have been in operation range from 10 to 25 years. However, on average, the age and

experience of employees are 43 and 11 years respectively, while the age and size of the firm is 17 years and 118 employees.

### ***Instrument Validity***

The validity of the research instrument was performed based on convergent and discriminant analysis with the application of Principle Component Factor Analysis (CFA) with varimax rotation as advocated by Straubs (1989) and adapted by Olannye and Okoro (2017). The result of the analysis is presented in Table 3.1. Generally, a valid instrument must have a convergent correlation that is as high as possible and a discriminant correlation that is as low as possible (Trochim, 2020). From the results below, all factor (item) loadings (i.e. convergent correlations) exhibited values between .549 and .913, which were found to be higher than the discriminant correlation for each construct. This shows, on average, a moderate and acceptable goodness of fit similar to that of Marsh, Abduljabbar, Abu-Hilal, et al. (2013). Also, in the opinion of Nunnally & Berstein (1994), all factor loadings greater than 0.40 are statistically significant. Thus, our instrument has convergent validity, meaning that the four constructs of outsourced and in-sourced HR is unidimensional and factorially distinct. Furthermore, all items used to describe a given construct are loaded to a single factor.

**Table 3.1:** Factor analysis: Principle Component extraction

Items	Outsourced HR Construct or Variables					In-sourced HR Construct or Variables			
	MFP	TDO	RPO	PPO	ITO	TDI	RPI	PPI	ITI
MFP1	.669								
MFP2	.740								
MFP3	.646								
MFP4	.766								
MFP5	.695								
TDO 1		.606							
TDO 2		.741							
TDO 3		.755							
TDO 4		.549							
TDO 5		.679							
RPO1			.771						
RPO2			.810						

RPO3			.756					
PPO1				.648				
PPO2				.690				
PPO3				.656				
PPO4				.794				
ITO1					.669			
ITO2					.753			
ITO3					.774			
ITO4					.733			
TDI1						.656		
TDI2						.824		
TDI3						.822		
TDI4						.635		
TDI5						.587		
RPI1							.673	
RPI2							.802	
RPI3							.729	
PPI1								.571
PPI2								.766
PPI3								.644
PPI4								.661
ITI1								.873
ITI2								.902
ITI3								.867
ITI4								.913

*MFP1, MFP2, MFP3, MFP4, MFP5I = items measuring MFP; TDO1, TDO2, TDO3, TDO4, TDO5 = items measuring TDO; RPO1, RPO2, RPO3 = items measuring RPO; PPO1, PPO2, PPO3, PPO4 = items measuring PPO (Payroll Processing Outsourcing); ITO1, ITO2, ITO3, ITO4 = items measuring ITO; TDI1, TDI2, TDI3, TDI4, TDI5 = items measuring TDI; RPI1, RPI2, RPI3 = items measuring RPI; PPI1, PPI2, PPI3, PPI4 = items measuring PPI; ITI1, ITI2, ITI3, ITI4 = items measuring ITI. For full meaning of other codes refer to Table 2*

### ***Instrument Reliability Test***

Internal consistency analysis was performed on the items describing each construct using Tau-equivalent reliability ( $\rho_T$ ). This is a single-administration test score reliability coefficient commonly called Cronbach's alpha or coefficient. The following systemic equations or formulae given below are often deployed in the testing and analysis

$$\rho_T = \frac{k^2 \bar{\sigma}_{ij}}{\sigma^2_X} \quad 1$$

The factor  $\bar{\sigma}_{ij}$  represents the average of the inter-item covariance, given as:

The factor  $\sigma^2_X$  comprises item variances and inter-item covariance given as: 
$$\bar{\sigma}_{ij} = \frac{\sum_{i=1}^k \sum_{j \neq i}^k \sigma_{ij}}{k(k-1)} \quad 2$$

Where  $X_i = \sum_{i=1}^k \sum_{j=1}^k \sigma_{ij} = \sum_{j=1}^k \sigma_i^2 + \sum_{i=1}^k \sum_{j \neq 1}^k \sigma_{ij}$  items; and,  $\sigma_{ij}$  is the covariance of  $X_i$  and  $X_j$ , and  $\sigma_i^2 (= \sigma_{ii})$  represents the variance of  $X_i$ . The results of the data analysed using the above models are presented in Table 2. 3

**Table 2:** Result of Reliability test

S/N	Variables	Code	No. of Items	Internal Reliability
1	Manufacturing Firm Performance	MFP	5	.65
2	Training and Development Outsourcing	TDO	5	.84
3	Recruitment Process Outsourcing	RPO	3	.84
4	Payroll Processing Outsourcing	PPO	4	.79
5	HR Information Technology Outsourcing	ITO	4	.83
6	Training and Development In-sourcing	TDI	5	.82
7	Recruitment Process In-sourcing	RPI	3	.79
8	Payroll Processing In-sourcing	PPI	4	.75
9	HR Information Technology In-sourcing	ITI	4	.96
10	Human Resource Outsourcing	HRO		-
11	Human Resource In-sourcing	HRI		-
12	Difference between HRO and HRI	DOI		-
13	Age of manufacturing companies	fag (log)		-
14	Size of manufacturing companies	siz (log)		-
15	Leverage of manufacturing companies	lev (log)		-

From Table 2, the variables and their items as well as CB values are presented. From the reliability test results, each item's CB coefficient is greater than the threshold of 0.6 (Ursachi,

Horodnic, & Zait, 2015), thus indicating that our constructs are reliable and can therefore be used for further analysis.

### ***Variables and Measurements***

The independent variables of the study are HR outsourcing and in-sourcing practices (training and development, recruitment process, payroll processing, and HR information technology). The dependent variable was the performance of manufacturing firms, while financial leverage, firm size, and firm age constitute the controlled variables in the study. To measure the extent of the relationship between the dependent and independent variables while controlling for the effect of other factors, subjective data was collected from respondents by asking them to indicate their agreement or disagreement to questions asked on a 5-point Likert scale of 1 (strongly disagreed) to 5 (strongly agreed).

This scaling is similar to what past researchers used in their respective studies (see Olannye and Okoro, 2017). For the controlled variables, firm size was measured by asking respondents to indicate how many people currently worked for their firm and firm age was measured by asking respondents to indicate the number of years the firm had been in business. Both firm size and firm age were skewed, and thus logarithm transformations of the two variables were used in the analyses.

### ***Model and Estimation Protocols***

This study employed an Ordinary Least Square (OLS) regression model to test all the hypotheses in this research work. This is because both the explained and the explanatory variables in the study comprised of neither nominal data nor categorical data among other justifications. This model was strongly recommended by Hair, Black, Babin, Anderson, and Tatham (2010) for use when the variables of the study are not in this data form. The baseline regression equation is presented below:

$$Y_i = \phi_0 + \phi_n \sum_{i=1}^n X_i + \sum_{i=1}^n Z_i + \mathbf{e}_i \quad 4$$

In equation 4,  $Y_i$ , = predictant denoted by MFP;  $\phi_0$  = intercept;  $\phi_n$  = coefficient of the predictors;  $X_i$  = predictors and  $\sum_{i=1}^n X_i$  = vector of predictors;  $Z_i$  = control variables and  $\sum_{i=1}^n Z_i$  = vector of control variables; n = number of predictors and control variables;  $\mathbf{e}_i$  = error term.

In line with the objectives of the study, the following equations and models were developed to test the corresponding hypotheses. For objective number one and two, equation 5 was applied to test the corresponding hypotheses 1 and 2, while model 6 to 8 are used to test hypotheses 1a,

b, c, and d, and 2a, b, c, and d respectively. These models have been deployed in past studies (Baba, 2019; Jirawuttinunt, 2015; Hair et al., 2010). Thus:

$$MFP_i = \beta_0 + \beta_1 FAG_i + \beta_2 SIZ_i + \beta_3 LEV_i + \beta_4 HRO_i + \beta_5 HRI_i + \varepsilon_i$$

$$MFP_i = \alpha_0 + \alpha_1 FAG_i + \alpha_2 SIZ_i + \alpha_3 LEV_i + \alpha_4 DOI_i + \mu_i$$

$$MFP_i = \delta_0 + \delta_1 FAG_i + \delta_2 SIZ_i + \delta_3 LEV_i + \delta_4 TDI_i + \delta_5 RPI_i + \delta_6 PPI_i + \delta_7 ITI_i + v_i$$

## Empirical results and discussions

### *Descriptive and Correlation Statistics*

Means, standard deviations, and correlations among variables are contained in Table 3. These statistics show the quality of the data used for the analysis and testing of research hypotheses developed for this study.

**Table 3:** Descriptive statistics and correlation among variable

Var.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mean	3.21	3.52	3.59	3.47	3.26	3.21	2.97	3.07	2.88	3.47	3.03	.43	1.73	1.18	2.73
S.D	.62	.72	.87	.66	.65	.55	.82	.71	.76	.40	.34	.46	.46	.43	1.35
1	1														
2	.12	1													
3	.27**	-.02	1												
4	.53**	-.29**	-.02	1											
5	.10	-.01	-.02	.06	1										
6	-.01	.02	.09	-.06	.14	1									
7	-.22*	-.05	-.10	-.11	-.01	.15	1								
8	-.07	-.08	-.08	.01	.42**	-.08	-.10	1							
9	-.01	-.05	.18	.04	.33**	.01	-.05	.42**	1						
10	.55**	.38**	.61**	.35**	.49**	.11	-.15	.11	.27**	1					
11	-.12	-.08	.06	-.04	.44**	.40**	.34**	.66**	.74**	.19*	1				
12	.47**	.31**	.36**	.27**	-.06	-.28**	-.40**	-.50**	-.48**	.50**	-.76**	1			
13	-.03	-.11	.09	-.06	-.07	.18	.11	-.01	-.17	-.06	.01	-.05	1		
14	.28**	-.09	.05	.24**	-.08	.00	-.17	-.22*	-.02	.06	-.17	.19*	.07	1	
15	-.12	.08	-.00	-.03	-.04	-.15	-.00	.12	.26**	.00	.15	-.13	-.06	.05	1

1 = MFP; 2 = TDO; 3 = RPO; 4 = PPO; 5 = ITO; 6 = TDI; 7 = RPI; 8 = PPI; 9 = ITI; 10 = HRO; 11 = HRI; 12 = DOI; 13 = fag\_log; 14 = siz\_log; and, 15 = lev\_log

### ***HR Outsourcing and In-Sourcing Effect on Performance***

Preceding the test for the effect of HR outsourcing and in-sourcing on performance of manufacturing firms, we tested only the control variables in the first regression models with firm performance as a dependent variable. The results of these tests are shown in model 1. This was used as a baseline model to allow for the interpretation of the performance effects of HR outsourcing and HR in-sourcing variables as a set, in addition to examining the influence of specific outsourcing and in-sourcing HR activities individually on firm performance. Hypotheses 1, 2 and 3 were then tested to examine the extent to which outsourced HR (Hypothesis 1), in-sourced HR (Hypothesis 2) and the difference between outsourced and in-sourced HR (Hypothesis 3) influences firm performance. The results of hypotheses 1 and 2 are shown in model 2, while the result for hypothesis 3 is shown in model 3 of Table 3.

**Table 4:** Result of regression analysis for outsourced and in-sourced HR on firm performance

<b>Explanatory and controls</b>	<b>HR outsource &amp; in-source</b>			<b>HR outsource &amp; in-source dimensions</b>	
	Model 1	Model 2	Model 3	Model 4	Model 5
<b><i>Control variable</i></b>					
Log of firm age	-0.07	-0.02	-0.03	0.00	-0.04
Log of firm size	0.41***	0.31***	0.29**	0.24**	0.36***
Log of firm leverage	-0.06	-0.05	-0.04	-0.06*	-0.07
<b><i>Independent variables</i></b>					
HR outsourcing		1.02***			
HR in-sourcing		-0.23**			
Diff. (HRO- HRI)			0.50***		
Training & Dev. outsourcing				0.27***	
Recruitment outsourcing				0.20***	
Payroll outsourcing				0.53***	
HR info. Tech outsourcing				0.08	
Training & Dev. in-sourcing					0.00
Recruitment in-sourcing					-0.17*
Payroll in-sourcing					-0.02
HR info. in-sourcing					0.02
Constant	3.03***	0.13	3.18***	-0.77	3.74***
<i>F (full model)</i>	4.20**	14.88***	9.83***	14.90***	2.31**
Observations	116	116	116	116	116

<i>R</i> <sup>2</sup>	0.10	0.40	0.26	0.49	0.13
Adjusted <i>R</i> <sup>2</sup>	0.08	0.38	0.24	0.46	0.07
<i>Df</i>	112	110	111	108	108
Vif	1.01	1.05	1.04	1.07	1.17

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

To know which dimension of the outsourced HR and in-sourced HR that most influenced manufacturing firm performance, a further test of specific outsourced HR (H1a, b, c and d) and in-sourced HR (H2a, b, c and d) variables were performed. The results for these tests are contained in models 4 and 5 of Table 4 respectively. A linear combination of the two types of HR practices (outsourcing and in-sourcing) and the control variables, adjusted for the number of independent variables, explained 38% of the variance in performance of manufacturing firms in Nigeria. This implies that the majority of the variance was explained by the control and other variables not included in the model. From Table 3, the result shows that outsourced HR is a significant positive while in-sourced HR is a significant negative predictor of manufacturing firms' performance ( $p < .05$ ). By these results, hypothesis 1 and 2 are supported. This means that it is better for manufacturing firms to outsource its HR practices than to carry out such practices in-house.

Results of the differences between outsourced and in-sourced HR variables explained about 24% of the variance in the performance of manufacturing firms while more of the variances are explained by other variables that are not in the model. The regression result further shows that the difference between outsourced and in-sourced HR is significant and positive at 0.01 level. This confirms further that outsourcing HR has significant value addition to firm performance than in-sourced HR. There is thus sufficient evidence to retain hypothesis 3.

For the test of Hypotheses 1a, b, c and d, a linear combination of the four types of HR outsourcing (training and development, recruiting, payroll, and HR information system) and the control variables, adjusted for the number of explanatory variables account for about 46% of the variations in performance of manufacturing firms in Nigeria. Specifically, the regression result from model 4 reveals that TDO, RPO, and PPO were significant positive predictors of manufacturing firms' performance ( $p < .05$ ) with a coefficient of .27, .20, and .53 respectively while HR ITO is not. Consequently, as predicted by hypotheses 1a, b, and c, it appears that outsourcing of TDO, RPO, and PPO activities has a positive influence, while ITO activity has no effect on the performance of manufacturing firms in Nigeria. This way, except for hypothesis 1d, this finding has supported all the hypotheses.

Comparatively, the in-house HR activities explained 13% of the variations in performance of manufacturing firms in Nigeria. The regression results specifically show that HR TDI, PPI and ITI with a coefficient of .00, -.02, and .02 respectively, were not significant predictors of

manufacturing firms' performance ( $p > .05$ ), except RPI, which was significant at 0.1 with a coefficient  $-.17$ . It follows that HR TDI, PPI and ITI has no influence but RPI activity does have a marginal negative influence on performance of manufacturing firms in Nigeria, thus hypotheses 2a, b, c, and d are not supported.

On the suitability of the models used in the analysis of the relationship between HR activities and performance of manufacturing firms, the f-stat (full model) displays a significant value in each case. This means that the model is valid and that the variance explained by the explanatory variables are significant, although lesser, than the variance explained by other variables not included in models. The vif values, which are all less than the threshold of 10 indicate the absence of multicollinearity in the estimated parameters. In general, the findings of this study are supported by findings from past studies regardless of the sector they were conducted (see Mchunu, 2018)

### **Concluding Remarks**

In this study, the authors have attempted to shed more light on the relationship between outsourcing, in-sourcing and firm performance by investigating HR outsourcing and in-sourcing practices and their influence on the performance of manufacturing firm in Nigeria. Based on the findings, we conclude that HR outsourcing practice and some specific types of activities do indeed have a significant, positive influence on firm performance, while in-source HR practice and virtually all of its specific activities do not positively influence firm performance. Specifically, outsourced payroll has the greatest positive effect on firm performance followed by outsourced training and development, and lastly by outsourced recruitment. In addition, recruitment in-sourcing have a marginal negative influence on firm performance.

Our findings have some implications. First, practitioners would have to build confidence in outsourcing as its costs are more likely to justify their investments in outsourced HR activities, even though some outsourced activity like training is often at odds with their political context and self-interests in conducting such HR activity in-house. The result has given insight into rigorous evaluation outsourcing for higher HR accountability in the future. There is also an established procedure for measuring the efficacy of outsourced HR with methods that are currently available and with greater precision because the costs are better stated with outsourced HR. An interesting area of inquiry for academics would be to determine the potential rates of return in terms of increased innovation resulting from outsourced HR and in-sourced HR activities and other non-strategic, transactional, or non-unique HR activities. Additionally, practitioners may be similarly interested in the determination of such returns for other more specific dimensions of organisational performance in their own firms.

The findings of this study are less likely to be generalised since the sample, though a microcosm



of the population of interest, did not vary greatly in their stage of industry development or level of unionisation as these were not stated overtly in this study. Additionally, since all the firms in the sample were manufacturers, generalising the findings to service firms may be difficult.



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