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THE EFFECT OF SKILLS MISMATCH ON MICRO, SMALL AND MEDIUM SCALE ENTERPRISE OUTPUT IN PLATEAU STATE, NIGERIA

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ABSTRACT

Firms have the goal of maximizing both output and profit. This can be facilitated or hampered by skills mismatch. This study sought to find out how skills mismatch affect the output growth among micro, small and medium scale enterprises (MSMEs) in Plateau State. Questionnaires were administered using random sampling technique on 670 respondents from which 301 were used for the study which was a response rate of 45 percent. Enterprises with less than 10 employees were classified as micro, while those with employees between 10 and 49, 50 and 199 as small and medium scale enterprises respectively. It was found that, well matched and skills mismatched (under-qualification) among owners, managers and CEOs of MSMEs reduced the probability of output growth among micro but increase it among small and medium scale enterprises when compared to the over-qualified. It is therefore important that the capacity of the under-qualified be enhanced since it will not adversely affect output especially at the small and medium scale enterprise levels.

Keywords: *Skills mismatch, Output, Micro, Small and Medium Scale enterprises, Ordered Logistic*
JEL Classification Code: *J24, I20.*

1.0 Introduction

Human capital according to Blair (2011) is regarded as the most important factor of production, source of economic wealth and growth. It is used to consist of skills, knowledge, capabilities of a firm and country's workforce with other organizational arrangements that enable them to be innovative and productive. As such, skills acquired and available in any nation and organization are vital for their growth and development. Nations where skills are not available or there is the prevalence of skills mismatch can rarely compete at the global stage (Organisation for Economic Cooperation and Development [OECD], 2012) because it adversely affects labour market outcomes, productivity of workers, competitiveness and economic growth (International Labour Organization[ILO], 2019). Skills acquired and educational attainment, properly deployed contributes to innovation and technological development that spurs economic growth and improves citizens' welfare and quality of life. This is even more obvious when employers of labour find it difficult to get employees with the right education or skills for the job and also when owners and chief executive officers (CEOs) perceive that they are over- or under- qualified for the work.

Micro, small and medium scale firms play vital roles in national development. The government of Nigeria prioritizes their growth and development because of their critical role in job creation, technology adoption, provision of essential goods and services to communities (Geopoll; Africa 118; The African talent Company, 2023) thereby ensuring inclusivity. A major

objective of the national development plan 2021-2025 is to diversify the economy through robust MSME growth (Federal Ministry of Finance, Budget and National Planning[FMFBNP], 2021). Various government programs have been initiated to ensure their growth and development. The Bank of Industry (BOI) had set aside 75 billion naira for MSME loans targeted at job creation, cost reduction and increasing output. This priority alongside the governments focus on access to education for all had led to an increase in the number of higher education certificate holders, most of whom end up seeking employment or setting up firms and business enterprises within the state. This naturally leads to higher supply of labor. The challenge then becomes the ease for employers (who represent the demand side) to find qualified and skilled employees and how relevant are the skills of those who establish or manage MSMEs. This results in over- or under- education with its associated cost to firms and society. According to McGuinness (2006) over-education at the national level can potentially lower welfare compared to what it would have been if the skills of the entire overeducated are utilized. Also taxes will be spent on the education of people whose skills will not be utilized while at the firm level, some evidence for lower productivity had been found. Skills mismatch had been found to be a problem in turkey (Sahin, 2021), among OECD countries (McGowan & Andrews, 2017), and European Union (EU) countries and is on the rise, especially over-education (Vandeplas & Thum-Thysen, 2019).

MSMEs in Nigeria are challenged with the problem of skilled manpower especially at the management level. This affects the level of output and productivity in these categories of firms. This skilled manpower problem according to (Small and Medium Scale Enterprises Development Agency of Nigeria[SMEDAN], 2021) consists of huge skills gap in management, knowledge, predominance of necessity rather than opportunity entrepreneurs, low innovative results, poor record keeping, financial illiteracy and mismanagement, administrative tardiness and red tape. For MSMEs in the country to keep making meaningful contribution to the nation's GDP, there must be available relevant skilled manpower that will innovate, manipulate technology for production and industrial growth. According to Geopoll, Africa 118 and The African talent Company (2023) about 20 percent of MSMEs in Africa (including Nigeria) found it very difficult to access talent and 25 percent find it difficult to access same. Such difficulty, especially at the managerial or executive level adversely affects firm efficiency in-terms of output and worker productivity.

Plateau state, according to (Small and Medium Enterprises Development Agency[SMEDAN]; National Bureau of Statistics[NBS], 2013) had 786,504 micro-enterprises that generated 1,199,760 employment opportunities and 2,070 and 110 as small and medium scale enterprises respectively between 2010 and 2013. This number decreased to 32,028 in 2020. In 2010 and 2013 respectively, about 3.76 and 3.87 percent of national total were employees in MSME in Plateau State. MSMEs in Nigeria, which includes Plateau, often disregard, in their planning and execution, the role of requisite skills. This therefore affects their output and overall efficiency.

Skills mismatch, according to (ILO, 2019) is a concern for workers, employers and policy makers. It's effect had been studied within the context of graduates, their abilities and personality trait (McGuinness & Bennett, 2007; Esposito & Scicchitano, 2023; Chuang & Liang, 2022), educational and skill mismatch effect on wages in youth labor market (Park & Hernandez, 2019) skills mismatch and unemployment (L'Horty & Sari, 2018; Kahn, 2015), productivity and skills mismatch (McGowan & Andrews, 2017; Vandeplas & Thum-Thysen, 2019). This study extends the literature by focusing on skills mismatch among MSME owners or CEOS and managers. Findings showed that skills mismatch (under-education) reduced the probability of micro enterprise output growth compared to over-educated workers in the same category. It increased the probability of output growth among small and medium scale

enterprise. This study is structured into five sections. Following the introduction in section one, is the review of related literature in section two, followed by methodology in section three, presentation and analysis of result in section four while section five concludes the study.

2.0 Literature Review

2.1 Conceptual, Theoretical and Empirical Literature

Skills mismatch is a broad concept that is meant to reflect a suboptimal match between workers and jobs in terms of skills and/or qualifications (Vandeplas & Thum-Thysen, 2019). It is broad and relates to different forms of labor market frictions (ILO, 2019). It is measured using various methods such as self-assessment, the comparison of skills possessed and the ones used at work and qualitative assessment (McGowan & Andrews, 2017). Over-education is deemed to have occurred when an employee's level of education is above his/her position at work while under-education is when the position occupied by an individual is above his/her level of education.

Over-education has no unified theoretically acceptable position (McGuinness, 2006). Various theories had been advanced to explain the presence and prevalence of over-education. The human capital theory (HCT) according to McGuinness (2006) was advanced by Becker (1964) and stated in Becker (1993), was the most widely used theory in developed economies to explain earnings by employees. The HCT explains that workers will always be paid based on their marginal productivity which is connected to their level of human capital. Firms' will not adapt their production processes because of the relative higher labor supply or higher education acquired by employees. Over-education can exist in the short run where firms adjust their production processes for the duration it takes workers, through job search to find an appropriate placement commensurate to their level of educational qualification.

The Job Competition model posits that the rigidity of wages due to national wage agreements, the organization of production processes around labor skills that are in teams or are heterogeneous makes short run adjustments of production processes and wage flexibility by firms quite difficult. Thus job characteristics become the determinant of earnings. This position is based on Thurow's 1975 book, generating inequality. It posits that competition is based on job not education as such when an individual gets a job after being on the queue; their wages are predetermined by the job characteristics. This implies that the marginal product resides in the job and not the individual's characteristics. In this model, individuals will acquire more education and skills when they observe others are doing that because this will provide a defense for them in the job queue. As such, the more the number of educated people in the economy, the more the need to get educated (McGuinness, 2006) thus resulting in over-education.

Capsada-Munsech and Valiente (2020) studied skills mismatch across eighteen European regions from nine European countries, using quantitative and qualitative data from a large EU H2020 research project on lifelong learning policies for young adults. The skills ecosystem was used and the study found the coexistence of low- and high skill equilibria with high skills polarization in urban regions. Regional demand side factors were important in explaining skill shortages and surpluses. Local economy skills demand, job availability were crucial in explaining the divergent effects on skills mismatch by skill formation regimes.

Vera Toscano and Meroni (2021) did a cohort study on skills mismatch among different age cohorts. Three different but comparable data sets were utilized for the study (the 1994–1998 International Adult Literacy Survey, the 2003–2008 Adult Literacy and Life Skills Survey, and the 2011–2012 OECD Survey of Adult Skills. It was found that different patterns of

occupational skills mismatch evolution were present among countries from younger to older generation, depending on the use of over-education or other forms of skills mismatch.

Voßemer and Schuck (2015) studied the long- and short term reentry into labor market because of over-education in Germany, using the stepping stone hypothesis. The German socio-economic panel (1984-2012) was used and analyzed using dynamic propensity score matching approach. It was found that an overeducated re-entry increases the long-term employment chances persistently, which implied strong lock-in effects into over-education for up to 5 years after re-employment.

McGuinness and Bennett (2007) did a study on the impact of over-education among a cohort of Northern Ireland graduates. Quintile regression approach was used and it was found that incidence of over-education was prominent within low ability graduates in the wage distribution structure. Also, relative to their well-matched counterparts, overeducated male with low and mid-level ability earned substantially less.

Borgna, Solga and Protsch (2018) studied the issue of over-education in 16 European countries based on data from the 2011/2012 program for the International Assessment of Adult Competences (PIAAC). Mixed effects linear probability model was used and it was found that after the 2008 financial crisis over-education was a higher risk for those individuals that experienced job mobility than for those who retained their jobs. At the macroeconomic level, for those in the context of poorer economic conditions, over-education risks were also higher.

McGowan and Andrews (2017) studied the effect of qualification and skill mismatch among OECD countries using the survey of adult skills (PIAAC) data set. The study used an industry level regression panel data model and found that among OECD countries, higher skill and qualification mismatch were associated with lower labor productivity. Most of the impact was accounted for by over-skilling and under-qualification.

Sutrisno, Permana, and Junaidi (2023) did a study on education and its effect on MSME expertise because of the increasing challenge of Globalization. Data was analyzed using qualitative techniques and the study found that education and training are vital for the development of skills and competitiveness among MSMEs. Skills mismatch in-terms of over-(under) education was not the considered in the study.

Skills mismatch as over- (under) education and its effect on MSME output especially in a developing sub-Saharan country had not received attention in existing literature. Existing studies focus largely on firms (not MSMEs), wages of employees and productivity without focusing on managers, employers and CEOs.

3.0 Methodology

Skills mismatch was measured as a discrete variable among owners and employers based on difficulty of hiring workers and educational qualification of employers versus their positions. These measures focused more from the employers' perspective than that of the employee.

3.1 Study Area

The study focused on six out of the seventeen local governments in Plateau State of North Central Nigeria. The state covers a land mass of 30,913 km2 and with an approximate population of 4.7 million. Plateau state was the study area. It was created in 1976 and is made up of three senatorial zones-Northern, Central and Southern. The local governments from which sample were drawn are Jos North and South, Pankshin, Quanpan, Langtang South, Bassa. The choice of these local governments was because of their population sizes, ease of

access because of insecurity in some local governments at the time of conducting the study, their urban and sub-urban nature and the availability sufficient study units. According to SMEDAN (2021) the registered MSMEs in Plateau state with Corporate Affairs Commission (CAC) were 14,558 out of 32,028 MSMEs in the state as at 2020.

3.2 Data Collection Strategy

Micro, Small and Medium Sclae enterprise owners were administered questionnaires through random sampling in Pankshin, Langtang South, Bassa, Quanpan, Jos North and South respectively. Six hundred and seventy questionnaires were administered out of which three hundred and thirty seven were from MSMEs owners. Three hundred and one were found to be valid after cleaning the data out of which two hundred and thirty one were micro enterprises while ninety five and five were small and medium scale enterprises respectively. The size of managers and owners that are responsible for hiring workers was determined based on Yemane (1967) formula.

$$n = \frac{N}{1 + N(e)^2} \tag{1}$$

Where n is the desired sample size, N is the population size (14,558), and e is the margin error (0.05). Data management and cleaning process reduced the sample size to three hundred and one.

3.3 Model Specification

Ordered logistic regression model was used and was estimated using log likelihood function because MSME classification was based on ordered number of employees. Those with less than 10 employees were classified as micro while Small and medium scale enterprises were those with 10-49 and 50-199 employees respectively. This ordered classification made the ordered logistic regression model the most appropriate. The model is specified as equation 1.

$$Y^* = X_i \alpha_i^{'} + \varepsilon_i \tag{2}$$

Where Y* is an indicator variable with the codes 1, 2 and 3 used for micro, small and medium scale enterprises respectively. X_i is a vector of variables made up of the main variables of interest (ease of getting workers, education qualification versus position) and control variables. The vector of parameter estimates is capture by α_i and ε_i is the error term. Equation 1 is further specified as an ordered logistic regression model thus;

$$Y^* = \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \varepsilon_i \tag{3}$$

Where X_1 and X_2 are the ease of getting workers and educational qualification, X_3 is the position held as against educational qualification, X_4 is the number of years that the firm has been in existence and ε_i is captures the unexplained changes in the model. The number of years that the firm has been in existence was measured as continuous variable while others were coded as indicator variables.

4.0 Results and Discussion of Findings

4.1 Descriptive Statistics

The number of employees was used as the basis for classifying firms into Micro, Small and Medium Scale Enterprises. Micro enterprises were those with less than 10 employees, while

those with employees between 10 and 49 were classified small and those with 50 to 199 employees were classified as medium Scale Enterprises. Employees wre used as against financial turnover because it is the most stable data set because of the high level of turnover fluctuation. From the data set, 50.5 said it was difficult to get qualified employees while 49.5 percent said it wasn't difficult to hire employees. Owner's educational qualification showed that one person or 0.33 had less than primary school education while 3.65 percent had primary level education. Those with secondary school level education and diploma were 24.92 and 19.93 percent respectively. Bachelors and master's degree holders make up the highest percentage of post-secondary education certificate holders at 37.21 percent and 9.97 percent respectively. Doctoral degree holders were the least among those with higher educational qualification at 2.33 percent while those with other educational qualifications constitute 1.66 percent. The average lifespan of MSMEs sampled was about nine years with the minimum age being one and the maximum at 50 years. About 81 or 26.91 percent think that their educational qualification is above their position or status while 173 or 57.48 and 51 or 15.61 think that their position and education qualification are equal and above respectively.

Table 1: Average Marginal Effect of Skills Mismatch on MSME Output.

Variable	Average Marginal Effect	Delta Method Error	P-value
Output			
Ease of getting workers: Difficult Base outcome			
Ease of getting workers: Not difficult			
Micro	-0.4999	0.0510	0.328
Small	0.0467	0.0478	0.329
Medium	0.0032	0.0036	0.370
Educational qualification			
Micro	-0.0885***	0.019	0.000
Small	0.0826***	0.018	0.000
Medium	0.0058*	0.003	0.070
Position and Education qualification			
Below: Base outcome			
Equal			
Micro	-0.1707***	0.0553	0.002
Small	0.1614***	0.0527	0.002
Medium	0.0091*	0.0052	0.081
Above			
Micro	-0.2132***	0.0802	0.008
Small	0.2007***	0.0751	0.008
Medium	0.0124	0.0080	0.124
Age of firm			
Micro	-0.0073**	0.0036	0.043
Small	0.0068**	0.0034	0.043
Medium	0.0004	0.0003	0.146

Note: *,**,*** denotes statistical significance at 10, 5 and 1 percent.
Source: Authors computation using STATA 15 software.

From table 1. Employee skills mismatch from the perspective of MSME owners, CEOs and mangers is the ease of finding workers. The result showed that using the difficulty and ease of finding qualified employees, there was no statistically significant difference. Among managers and owners of MSMEs, those whose education qualification was equal to their position had a probability of reducing output among micro scale enterprises by 17.07 percent

compared to those that were over-qualified. Those under-qualified in the same firm category were also found to reduce output by a probability of 21.32 percent. This finding is inline with existing literature where higher skills and qualification mismatch was found by (McGowan & Andrews, 2017; Vandeplas & Thum-Thysen, 2019) to reduce the productivity of labor among OECD and EU member countries.

Among small scale enterprises or firms, well matched firm owners and managers were found to increase output by a probability 16.14 percent compared to those of the same category that were over-qualified. Among the under-qualified, output was found to increase by a probability of 20.07 percent. In the medium scale category output among the well matched compared to the over-qualified increased by a probability of 0.9 percent while among the under-qualified, it also increased by 1.2 percent but was statistically insignificant. This finding implied that firm owners that whose educational attainment matched the position in MSMEs they run or manage tend to put in their best and use their abilities to ensure its growth and development. The under-qualified may have had to put in extra work hours in order to ensure that they are able to effectively grow the output of firms under their ownership and or management. This finding contradicts that of the ILO (2019) where under-qualification at the firm level was associated with lower productivity.

The duration of the firm's existence was found to reduce the probability of output growth by 0.73 percent among micro enterprises while among small and medium scale enterprises, the probability increased by 6.8 and 0.4 percent respectively with a statistically insigficant outcome for medium scale firms. This finding points to the short life expentancy of most business enterprises in Africa and the fact that for those who will navigate these challenges as reflected in higher number of employees are able to thrive.

Education among owners and managers was found to reduce output among micro enterprises by a probability of 8.85 percent but increased it by 8.26 and 0.58 percent among small and medium scale enterprises respectively.

5.0 Conclusion and Recommendations

Skills mismatch has been an issue of concern to policy makers and educationist all over the world. This is because it adversely affects productivity and quality of life of citizens. In Plateau state the outcome is no different with what obtained in other climes. The negative effect of over-education on micro enterprises output (the major employers of labor) in the MSME sub-sector implied output reduction and underutilization of resources. The ease of finding employees implied that there are possible skill related problems because of its statistical insignificance. Educational institutions, association of MSME owners and producers, MSME councils at federal, state and local government levels, ministries of education at the local, state and federal level alongside labor unions should engage on the skills required to establish and own firms, in the design and development of training curriculum.There should be annual skill acqusition training and re-trainng program for MSME owners and their employees by various education institutions for a minimum period of five years. This will ensure relevant skills acquired are updated and utilised.

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