

Assessing the Level of Skills Mismatch in Selected Public Organizations in FCT

Ibrahim Ali Aliyu¹ & Dare Daniel Joseph¹

¹Department of Business Administration, University of Abuja-Nigeria

Correspondence Email: dare.daniel@uniabuja.edu.ng

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Abstract

The study assesses the level of skill mismatch in the selected public organizations in Abuja. Survey research design was adopted, and a structured questionnaire was used as the research instrument with a sample size of 63 respondents. The analysis was conducted using descriptive statistics which revealed that nearly all the listed set of skills displayed by employees were considered very poor or poor by the employers of the selected MDAs and that the adequacy of skills of sampled employees was significantly low with wide margin of mismatch. The study concludes that for all the set of employees' skills except for communication skill, it was apparent that they were poorly displayed and grossly inadequate resulting to varying levels of mismatch among individual skill sets. Some recommendations were made, among which is the need for the various higher institutions of learning such as universities, polytechnics etc to synchronize their curriculum with the labour market demand so as to minimize the level of skill mismatch and this can be done through emphasizing practical work, industrial attachment for all discipline, and real life simulations more than theory in the curriculum of the higher institution where these employees are trained; and that the respective MDAs should periodically assess and identify the level of adequacy of individual skill of individual employees and organize periodic training/workshops/seminars so as to bridge the skills gap responsible for the mismatch.

Keywords: Mismatch, Organization, Public, Skills

JEL Classification: L23

1. Introduction

Over the years, researches have long established that education and human capital are associated with skills acquisition and to an extent, competence that will increase earnings like wages, salaries, etc. Evidence also indicates that similar levels of education can yield quite diverse earning outcomes within narrowly defined occupational classes (Devroye & Freeman 2002). As a result, recent researches have paid attention to the idea of a job-skill mismatch (OECD 2001; WoBmann 2003; Gibbons & Waldman 2004). Skill is the ability to perform a task to a predefined level of competence. Skills are often divided into two types: transferable

or generic skills which can be used across large numbers of different occupations. Furthermore, some skills are vocational (these are specific occupational or technical skills needed to work within an occupation or occupational group). Skill mismatch is generally understood as various types of gaps or imbalances referring to skills, knowledge or competencies that may be of a quantitative or qualitative nature (Proctor & Dutta, 1995). It is the difference between the competence of the graduate and employers' expected competence needs.

With the recent changes in the business landscape shaped by the forces of globalization and technology, the various skills (generic skills) that employers now demand for in addition to academic skills have expanded to include; analytical, critical thinking, communication, entrepreneurial, decision making, IT (information technology), interpersonal, problem-solving, self-directed and numeracy skills (Greenhill, 2010). Brown, Halsey, Lauder, and Wells (1997) noted that employers now emphasize the need for employees who have good personal social skills, together with any technical know-how that may be required. At least, among core workers, there is an expectation that they will be able to work in a rapidly changing environment, engage in "rule making" rather than "rule following" behavior, work in project teams and share the same "personal chemistry" as others in the organization (Atkinson, 1985). Brown et al. (1997) further stressed the fact that academic qualifications now tell employers less about what they need to know about potential recruits, given that they convey information about the individual's ability and motivation to jump through the appropriate test and examination hoops, rather than students potential to work in teams or about their social and personal skills. Boateng and Ofori-Sarpong (2002) and Akerele and Opatola (2004) in their respective studies on the labor market for tertiary graduates in Ghana and Nigeria, found out that apart from the qualifications that graduates may possess, there are other attributes (non-academic skill requirements) which employers emphasize, such as good personal and social skills, analytical skills, good communication skills, technical and managerial skills, etc. Employers want workers who are already made to perform, because markets are becoming more competitive and because cost of on-the-job training is becoming prohibitive. They found out that about 50% of all jobs requiring university education and 30% of all jobs requiring that at least, polytechnic diploma also require computing and analytical skills. Due to insidious nature of the problem of skills mismatch especially in the public service and its accompanying consequences, this provides the motivation for this conference paper to assess the level of skills mismatch of employees' in some selected public organizations in Abuja.

According to Dabalén, Oni, and Adekola (2000), most of the tertiary institution graduates are poorly trained and unproductive on the job, shortcomings are particularly severe in oral and written communication, and in applied technical skills. They believe that academic standards have fallen considerably over the past decade and that a university degree or any tertiary institution certificate is no longer a guarantee for communication skills or technical competence. Although many employers confirm that the graduates possess a broad and respectable understanding of the knowledge base in technical disciplines, they expressed

disappointment with the preparation of graduates in those applied technical skills necessary for solving problems and enhancing business productivity. Even the experienced workers are facing the challenges of the dynamic nature of new tasks that need to be performed with new set of skills that is different from their current ones creating skill mismatch among the experienced employees. In addition, in spite of the huge sums of funds spent on training, most employees of the Nigerian public service are still showing some manifest symptoms of skill mismatch which is drastically affecting the overall national productivity of the service (Adedeji, 2012). The gap identified between demand and supply of skills has been found to have several impacts and implications on companies and organizations. At the firms or organization level, how endemic is the level of skill mismatch in the Nigerian public service? What are those specific skills that are inadequate or those being underutilized in the Nigerian public service?

From the foregoing, there is the need for a proper study to assess the level of skill mismatch, identify those relevant skill lacking or being underutilized among many others, hence the motivation for the study. The main objective of this study is to assess the level of skills mismatch in the Nigerian public service. The specific objectives are to: (i) determine the overall basis the adequacy level of skills and the level of the skills mismatch gap in the Nigerian public service; (ii) identify those specific skills that are inadequate or those being underutilized in the Nigerian public service.

2. Literature Review

Concept of Skills Mismatch

Skill mismatch is usually defined either in terms of excess (over) or deficient (under) qualifications or skills possessed by individuals relative to job requirements. In the view of Proctor et al (1995), Skills mismatch is generally understood as various types of gaps or imbalances referring to skills, knowledge or competencies that may be of a quantitative or qualitative nature. It is the difference between the competence of the graduate and employers' expected competence needs. Still, literature on skill mismatch is rather limited mainly due to the lack of quality data and difficulty of identifying good measures of skills. Determining which skills should be measured is a complex and difficult task. Many scholars are concerned with the diversity of human skills and determined so-called core competencies or key competencies (Rychen & Salganik, 2003). Nevertheless, it is clear that core competencies form a general skills background only and that in every occupation there are also other specific skills that one needs to acquire in order to make up the professional domain of particular occupation. There are typically three alternative categories of skills mismatches that can be distinguished. Over-skilling (or skill surplus or skill underutilization) is the situation when worker's skills exceed those required by his/her job; under-skilling (or skill deficit) is the situation whereby the worker's skills are inadequate to the requirements of his/her job and the required-skilled workers are the ones with adequate skills for the job.

Furthermore, the skill mismatch literature has evolved in two main directions. One emphasises on measurement issues and, in particular, the estimation of required education, against which actual education levels can be benchmarked. One technique for deriving such an estimate is the *objective method*, involving professional assessments of the minimum years of training required to perform key tasks in a particular occupation. Other approaches include the *statistical method* that defines required education as the mean or median of the observed distribution of years of education in a particular occupation, and worker *self-reported estimates* of the years of education required to perform their job. The objective method seems conceptually superior but it is rarely available on a continuous basis. The statistical method rests on a symmetry in the distribution of required education. Self-reported methods avoid the symmetry assumption but rely on subjective assessments (Linsley 2005; Kler 2005).

The second direction observed in the literature examines the role new technologies play in the emergence of skill mismatch. One interpretation is what Voon and Miller (2005) refer to as *technological change theory*, which highlights changes in the skill composition of a job due to technological change. New graduates are equipped with skills that are better aligned with emerging technology but firms are slow to adjust to new technology. As result, these new workers are overeducated. Conversely, as firms adapt to new technologies, existing workers become undereducated. Principal advocates of technological change theory, e.g. de Oliveira *et al.* (2000), explain this mismatch in terms of adjustment costs and assume that the overeducated are well equipped to meet the demands of new technology.

Causes of Skills Mismatch

It is a broadly accepted fact that mismatch arises from the situation where there is heterogeneity both at the supply - experience, skills, and the diverse qualifications offered by individuals to potential employers - and demand side of the labour market - skills, experiences and the qualifications required to perform job tasks properly (Allen, Levels & van der Velden, 2013). There are numbers of hypotheses why mismatch occurs. In general, the existence of mismatches can be explained by imperfections of the labour market caused by information asymmetry between employers and employees, incomplete information in the labour market, differences between people and transactions costs. Generally, the causes of mismatches exist at the individual level and as well as at the macro level (Montt, 2015).

There are numbers of theories that can help us to understand the labour market imperfections (Pettinger, 2017). At the *individual level*, educational mismatch can be explained through a fact that certain individuals may have low ability for their level of education in comparison with their peers. This result in a situation where they will not be able to obtain a job commensurate with their education. Obviously, such an example is the case of overeducation. On the other hand, overeducation may also appear, when some individuals choose to accept a job for which they are overeducated because it offers them compensating advantages, such as less stress, or less commute to work, work time flexibility etc. Another possibility is that employers actually prefer overeducated employees, because they are more productive and learn more quickly. For firms operating in rapidly changing

markets, hiring overeducated or overskilled workers may be a strategy to avoid future expenditures and may serve as an insurance policy. Some studies (Crompton, 2002, Dekker et al, 2002) have also found that young people are more likely to be overeducated because at the beginning of their career they are willing to accept jobs that do not reflect their qualifications. According to this theory, overeducation can be explained as temporary phenomena which should correct itself as the young people find the jobs that suit their skills better. Over a lifetime overeducation should thus decline with age. Skill mismatch may also appear when employers do not possess well developed hiring practices and hire workers with different skills than they require. At the *aggregate level*, overeducation is linked with the expansion of tertiary education which is growing faster than the share of highly qualified jobs (Machin & McNally, 2007). The economic or technological changes on the labour market cannot be reflected immediately in the changes of educational system. This situation can lead to both undereducation and overeducation since educational system produces qualifications that are inadequate to those required on labour market.

Undereducation is most often connected with the technological development. Technological progress upgrades requirements on the qualifications and mainly older workers may not fulfill those new requirements and thus are classified as undereducated. But this situation does not mean that they have to be under-skilled. It is necessary to take non-formal education and skill development activities acquired by individuals since they have been hired into account. The rate of mismatch is also strongly related to economic cycle. During economic recession it can be more difficult to find an appropriate job and people may accept a job which does not suit their education or skills (The Investopedia Team, 2021). Especially since the rate of over-education and over-skill is increasing which could mainly be due to a combination of low vacancies and pressure on the supply side.

Causes of mismatches mentioned above do not represent a complete list of causes but are presented as an example of how different sources can cause the mismatch on the labour market. Some of the causes are described in more detail in separate theories, such as Human capital theory (Schultz, 1961, Becker, 1964), Technological change theory (Romer, 1990), Career mobility theory (Sicherman and Galor, 1991), Search theory, Signaling theory, Job competition theory or Labour market segmentation theory (see Desjardins, Rubenson, 2011).

Theoretical Frameworks

There exists no accepted unified theory of skill mismatch, although some authors have attempted to conceptualise and explain the problem within the framework of semi-formal economic models (Freeman 1976; McMillen et al., 1999). Nevertheless, a large part of the literature on overeducation considers the phenomenon within the context of existing views of the labour market, and quite a few studies have conducted empirically tests to ascertain which theoretical perspective is most consistent with the observed facts (Duncan & Hoffman, 1981; Rumberger, 1987; Hartog & Oosterbrook, 1988; Groot, 1996; Sloane et al., 1999; Battu et al., 2000; Dolton & Vignoles, 2000). Sloane (2003) even argues that the major contribution of the overeducation literature has been to widen the debate on the

importance of job characteristics in determining wages, thus broadening the human capital framework. This section offers a broad overview of the three main labour market perspectives, and assesses the consistency of each view given the present rate of over-education in the labour market.

Human Capital Theory

The dominant explanation of the distribution of earnings in developed economies arises from Becker's (1964) monograph *Human Capital*. Becker (1964) assume that workers will always be paid their marginal product. Thus, firms will adapt their production processes to reflect changes in the relative supply of labour. Wages match the individual worker's marginal product, which is determined by the level of human capital acquired through initial formal training and on-the-job training. By assuming so, the HCT affirms that employers will fully utilise the skills of their employees. Both over-education (worker under-utilisation) and wage rates that are below the marginal product are inconsistent with this approach to the labour market.

Nevertheless, many economists continue to argue that HCT remains fully consistent with the empirical evidence regarding overeducation. They state that it is possible that workers will be overeducated in the short run, while they are looking for a more appropriate job or while firms adapt their production processes to fully utilise the individual's human capital. HCT is therefore consistent with the existence of *short-term* mismatches.

Mincer (1974) develops an earning regression based on years of schooling, in which less formal measures of human capital, such as on-the-job training, are ignored. Individuals with more formal schooling may be compensating for a lack of work-related human capital, and the apparent lower earnings of these overeducated individuals may be due to an omitted variable problems (e.g., lack of control for less formal forms of human capital accumulation). Mincer's framework is presented as another explanation for overeducation consistent with the neoclassical view (McGuinness, 2006).

The HCT approach offers a third explanation for overeducation by considering the possibility that overeducated workers have less abilities compared with workers whose jobs are appropriately matched to their qualifications. In this explanation, lower wages are a reflection of lower productivity. If evidence of such skill differences is found, the bias in the estimated wage effect of overeducation would be picked up by the empirical framework.

Job Competition Model

The job competition model suggests that job characteristics may be the only factor determining earnings. Based on Lester C. Thurow's *Generating Inequality* (1975), the model has attracted considerable attention within the overeducation literature. Thurow's model characterises a labour market as competition for job opportunities based on individuals relative training costs, in contrast to labour market competition based on the wages individuals are willing to accept given their human capital.

This model emphasizes the importance of a person's relative position compared to other workers competing for jobs. Thurow (1975) postulates that when an individual observes his neighbour participating in education, he would be less likely to participate in education: in the HCT framework supply would be higher and the return less. However, under the Job Competition Model, the same individual would now be *more* likely to participate, for education becomes a "defensive necessity" to protect one's place in the job queue. The larger the numbers of educated persons in the economy, the more imperative it becomes for an individual to invest in education.

The Job Competition Model provides a clear explanation for educational overinvestment, and consequently for over education.

Assignment Models

The assignment literature offers a middle ground between the two extreme perspectives outlined previously. Despite some differences amongst them, all assignment models specify jobs or sectors available to workers, the relevant differences between workers, the technology relating job and worker characteristics to output, and the mechanisms that assign workers to jobs. Within this framework, the earning function no longer constitutes a directly observable relationship, but instead represents the equilibrium outcome to the solution of the assignment problem. Sattinger (1993) points out that relative wages have changed over time with earnings becoming more unequal. He argues that these changes are hard to explain in the standard neoclassical framework in which productivity and earnings are exclusively linked to education and experience, and thus independent of the availability and quality of jobs in the economy.

The general predictions of assignment models concerning the allocation of workers to jobs, and their subsequent earnings, are more important in the context of overeducation. Assignment models differ significantly from the job competition perspective by stressing that choice of job or sector creates an intermediate step between an individuals' characteristics and their earnings. The job allocation process is not merely a lottery; instead, income maximisation motivates workers to choose particular jobs over others. Higher wages for workers with particular characteristics therefore play an allocative role in the economy rather than being mere rewards for the possession of characteristics.

The distribution of workers is not random but based on their own choices and aimed at maximising income or utility. The central prediction from the assignment literature is that an adequate explanation of changes in the distribution of earnings implies considering both individual characteristics and job characteristics. Thus, overeducation is entirely consistent with an assignment interpretation by suggesting that marginal product and earnings will depend on both the individual and the job. In addition, these models imply that there is no reason to expect wage rates either to be wholly related to acquired schooling or other individual attributes (HCT), or to be wholly related to the nature of the job (Job Competition Model).

3. Methodology

The area of this study is the Federal Capital Territory because to hosts the seat of the Nigerian and government as well as the major ministries, departments and agencies that are dominated by public servants and public services. The surveyed public organizations are selected using convenience sample based on the criteria of accessibility and suitability. On the Overall, 72 government agencies were purposively selected cutting cross various Ministries, Departments and Agencies (MDAs) within the Three Arms Zone and this was adopted as the sample size. Structured questionnaire was distributed to each of the selected MDAs. The study employed the descriptive statistical techniques in order to effectively assess and explain the level of skills mismatch in selected public organizations in FCT. Additionally, the range of scaling in descending order from 5-1 in the following order Very Good (5); Good (4); Average (3); Poor (2); and Very Poor (1) was employed in order of significance or relevance for effective assessments.

4. Results

Of the 72 questionnaires that were administered to selected MDAs, 63 were retrieved, constituting 87.5% response rate which was used for the analysis.

Table 1: How good is the level of skills displayed by employees of your organization?

Skills	V. Good	Good	Average	Poor	V. Poor	Total	Mean	Stdev
Analytical/Conceptual	4.0	9.0	13.0	16.0	21.0	63	3.01	1.96
	6.3	14.3	20.6	25.4	33.3	100		
Technical	2.0	6.0	11.0	19.0	25.0	63	3.08	1.53
	3.2	9.5	17.5	30.2	39.7	100		
Numerical	6.0	8.0	13.0	16.0	20.0	63	3.02	1.41
	9.5	12.7	20.6	25.4	31.7	100		
Communication	8.0	18.0	20.0	11.0	6.0	63	3.11	2.09
	12.7	28.6	31.7	17.5	9.5	100		
Decision-making	6.0	7.0	12.0	16.0	22.0	63	2.89	1.02
	9.5	11.1	19.0	25.4	34.9	100		
ICT	2.0	9.0	11.0	15.0	26.0	63	2.76	1.16
	3.2	14.3	17.5	23.8	41.3	100		
Interpersonal	7.0	8.0	12.0	17.0	19.0	63	3.09	1.56
	11.1	12.7	19.0	27.0	30.2	100		
Problem-solving	2.0	6.0	11.0	19.0	25.0	63	3.08	1.53
	3.2	9.5	17.5	30.2	39.7	100		

Source: Field Survey, 2021

From Table1, 7 out of the listed set of skills displayed by employees were considered very poor or poor by the employers of the selected MDAs. These include analytical/conceptual skills (mean = 3.01, $SD = 1.96$) which was deemed as very poor and technical skills (mean = 3.08, $SD = 1.53$), numerical skills (mean = 3.02, $SD = 1.41$), communication skills (mean = 3.11 $SD = 2.09$), decision-making skills (mean = 2.89, $SD = 1.02$) and ICT skills (mean = 2.76, $SD = 1.16$) were also poorly displayed by the employees. Others include interpersonal skills (mean = 3.09, $SD = 1.56$) problem solving (mean = 3.08, $SD = 1.53$). The weighted average of 3.01 for all the set of skills listed clearly indicates that all the listed skills except for communication skill were poorly displayed by the sampled employees leading us to conclude that the overall displayed skills level is grossly low.

Table 2: Adequacy or mismatch of the various set of skills among employees of the sampled MDAs.

Skills	V. High	High	Average	Low	V. Low	Total	Mean	Stdev
Analytical/Conceptual	3.0	8.0	12.0	17.0	23.0	63	1.67	0.96
	4.8	12.7	19.0	27.0	36.5	100		
Technical	3.0	9.0	15.0	16.0	20.0	63	1.38	0.53
	4.8	14.3	23.8	25.4	31.7	100		
Numerical	2.0	5.0	13.0	20.0	23.0	63	1.72	0.61
	3.2	7.9	20.6	31.7	36.5	100		
Communication	11.0	13.0	18.0	12.0	9.0	63	3.01	1.09
	17.5	20.6	28.6	19.0	14.3	100		
Decision-making	2.0	7.0	13.0	19.0	22.0	63	2.89	1.02
	3.2	11.1	20.6	30.2	34.9	100		
ICT	5.0	6.0	14.0	17.0	21.0	63	1.76	0.66
	7.9	9.5	22.2	27.0	33.3	100		
Interpersonal	1.0	11.0	19.0	19.0	13.0	63	1.49	0.51
	1.6	17.5	30.2	30.2	20.6	100		
Problem-solving	4.0	7.0	15.0	16.0	21.0	63	1.53	0.73
	6.3	11.1	23.8	25.4	33.3	100		

Source: Field Survey, 2021

Table 2 showed that the adequacy skill of sampled employees was significantly low with wide margin of mismatch, and they were scored inadequate and low in every skill listed except for communication skill which shows a positive rating and some positive degree of adequacy. For analytical/conceptual skills, graduates displayed a mean score of 1.67 and $SD = 0.96$, technical skills (mean = 1.38, $SD = 0.53$), numerical skills (mean = 1.72, $SD = 0.61$) communication skills (mean = 3.01, $SD = 1.09$), decision making skills (mean = 2.89, $SD = 1.02$), ICT skills (mean = 1.76, $SD = 0.66$), interpersonal skills (mean = 1.49, $SD = 0.51$), and problem solving skills (mean = 1.53, $SD = 0.73$). On the whole, the weighted average of 1.59 is significantly low and generally poor indicating gross mismatch of each of the various set of skills with exception of communication skills which is adequate.

From the analysis, and in line with the objective of the study, the following findings are unearth: Nearly all the listed set of skills displayed by employees were considered very poor or poor by the employers of the selected MDAs. The adequacy of skills of sampled employees was significantly low with wide margin of mismatch, and similar to the above findings, the employees were scored inadequate and low in every skill listed except for communication skill which shows a positive rating and some positive degree of adequacy. Analytical/conceptual skills are the most poorly displayed by the sampled employees and the most with highest degree of mismatch. From the results of the analysis of objective two the employees of MDAs displayed inadequately, the skills listed. The weighted average of 1.59 revealed that the general performance of the sampled employees in terms of their possessed skills is not high enough, in fact, poor, even the low-rated skill by the employer. These findings are in tandem with several earlier findings; for example, NUC (National Universities Commission) (2004) reported that recent graduates from almost all disciplines have weaknesses in ICT, entrepreneurial skill, communication skill and managerial skills; and Adedeji (2012) who found out that there were varying degrees of mismatch between the various workplace tasks and required skills possessed by university graduates in Nigeria.

5. Conclusion and Recommendations

Based on the results and findings from the analysis, the study concludes that all the adopted set of employee skills except for the communication skill were poorly displayed and grossly inadequate resulting in varying levels of mismatch among individual skill sets, hence, the need for the following recommendations.

Base on the findings and conclusion as well as bearing the objectives of the study in mind, the study made the following recommendations: There is the need for the various higher institutions of learning such a universities, polytechnics etc to synchronize their curriculum with the labour market demand so as to minimize the level of skill mismatch and this can be done through emphasizing practical work, industrial attachment for all discipline, and real life simulations more than theory in the curriculum of the higher institution where these employees were trained. The respective MDAs should periodically assess and identify the level of adequacy of individual skill of their employees and organize periodic training/workshops/seminars so as to bridge the skills gap responsible for the mismatch. Finally, there is also the need for intermittent job rotation among employee to enable them learn other skills on the job as this will go a long way in reducing monotony and improve individual employee skills diversity

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