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Policy Brief:

Schooling, Skills, and Labor Market Outcomes in Africa: Evidence from Ghana and Kenya

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Key Messages

- **Individuals with higher levels of cognitive skills (reading proficiency) and socioemotional skills are more likely to enjoy better labor market outcomes.**
 1. Reading proficiency is a strong predictor of labor market outcomes. The returns for reading proficiency are higher for women than for men who have comparable educational attainment.
 2. Socioemotional skills are highly correlated with employment and earnings, with different correlations according to job type.
- **Socioemotional skills, such as those related to achieving goals (openness and conscientiousness), are strong predictors of the quality of employment and earnings, especially for women and youth.**
 1. Openness (i.e., appreciation for art, learning, and unusual ideas) is highly associated with higher earnings, the probability of being a high-skilled worker, and the probability of matching a job with the level of education.
 2. Workers with higher levels of conscientiousness (i.e., a tendency to be organized, responsible, and hardworking) and extraversion (i.e., sociability and dominance in social situations) are more likely to enjoy better earnings. Conscientiousness, in particular, is a strong predictor for women's earnings.
 3. A greater ability to manage emotions (i.e., predictability and consistency in emotional reactions, as well as an absence of rapid mood changes) is associated with a higher likelihood of being employed; however, this has no effect on earnings.
- **Years of schooling remains a strong predictor of labor market success and emerges as an important factor in generating both cognitive and behavioral skills.**

Context

School is a site for young people to accumulate a great deal of cognitive, socioemotional, and job-relevant skills. Researchers have shown a mutual reinforcement between cognitive and socioemotional skills. Having a combination of these skills can affect people's success as workers in diverse ways, such as their employment, wage, and health status. For instance, available evidence from developed countries indicates that cognitive skills are strong predictors of employment probabilities and labor market earnings (Hanushek & Woessman, 2008). According to Bowles, Gintis, and Osborne (2001), cognitive skills account for about 20 percent of the educational attainment effects on labor market outcomes, implying that as much as 80 percent of the link between skills acquisition and labor market outcomes is yet to be explained. Alternatively,

socioemotional skills, such as behaviors, personality traits, and attitudes, have emerged as equally or even more important predictors of future success in developed and emerging countries (Heckman, Stixrud, & Urzua, 2006). However, available measures of the scope and nature of these skills are limited, and an understanding of their implications for employment and earnings, especially in Africa, is incomplete.

The aim of this policy brief is to explore the relationship among schooling, cognitive skills, and socioemotional skills in two African countries—Ghana and Kenya. It also assesses the association of these skills with labor market outcomes, with a special focus on women and youth.

Methods

This paper makes use of data from the World Bank's Skills Towards Employability and Productivity (STEP) surveys. The STEP Skills Measurement program was initiated to generate internationally comparable data on skills available in developing countries; as such, it measures the cognitive, job-relevant, and socioemotional skills of adults aged 15 to 64 who live in urban areas, regardless of whether they work. The year of data collection for Ghana and Kenya is 2013. To focus on workers in the labor market, the sample is restricted to individuals aged 17 to 64 and those who are not currently in formal education. In addition, workers in the armed forces are excluded from the analysis. Eliminating these observations yields a combined analytic sample of 2,986 individuals for Ghana and 3,892 for Kenya.

The predictions in this research are mainly concerned with years of schooling, cognitive skills, and socioemotional skills. The direct measurement of reading proficiency is used as a measurement for cognitive skills. Reading proficiency is defined as the ability to perform various literacy activities, such as recognize the printed forms of common objects, comprehend sentences of varying levels of complexity, and comprehend the literal meaning of connected text. Socioemotional skills are measured by the Big Five, which is a well-accepted measure of the five major traits that define human personality across cultures. The Big Five taxonomy consists of openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability. Table 1 provides detailed information on socioemotional skills.

Table 1: Definition of behavioral skills

Openness (appreciation for art, learning, and unusual ideas)	Do you come up with ideas other people haven't thought of before?
	Are you very interested in learning new things?
	Do you enjoy beautiful things, like nature, art, and music?
Conscientiousness (tendency to be organized, responsible, and hardworking)	When doing a task, are you very careful?
	Do you prefer relaxation more than hard work?
	Do you work very well and quickly?
Extraversion (sociability and dominance in social situations)	Are you talkative?
	Do you like to keep your opinions to yourself?
	Do you prefer to keep quiet when you have an opinion?
Agreeableness (prosocial behaviors, cooperative orientation to others)	Are you outgoing and sociable, for example, do you make friends very easily?
	Do you forgive other people easily? Are you very polite to other people?
Emotional stability (predictability and consistency in emotional reactions; absence of rapid mood changes)	Are you generous to other people with your time or money?
	Are you relaxed during stressful situations? Do you tend to worry?
	Do you get nervous easily?

Table 2: Descriptive statistics (mean values)

	Ghana			Kenya		
	Full sample	Women	Youth	Full sample	Women	Youth
Years of schooling	8.18	7.31	8.62	10.32	9.89	10.68
Cognitive skills	135.31	117.38	146.98	174.13	165.59	180.14
Openness	2.52	2.51	2.53	2.85	2.83	2.86
Conscientiousness	3.21	3.13	3.20	3.22	3.18	3.20
Extraversion	3.08	3.02	3.11	3.00	2.95	3.02
Agreeableness	2.72	2.63	2.68	2.69	2.65	2.69
Emotional stability	3.04	3.02	3.03	2.86	2.85	2.84
Wageworker	0.36	0.23	0.43	0.56	0.48	0.60
Self-employed	0.59	0.72	0.49	0.41	0.49	0.38
High-skilled worker	0.16	0.09	0.17	0.19	0.15	0.20
Skill-job match	0.46	0.46	0.46	0.36	0.33	0.37
Earnings (log)	-0.98	-1.21	-0.99	-0.26	-0.38	-0.27

Findings

Table 2 reports the descriptive statistics for the analytic sample. There are quite substantial differences in skills and labor market outcomes between Ghana and Kenya, and these differences resonate well with the patterns found in sub-Saharan Africa. Table 2 indicates that average years of schooling is 10.32 years in urban Kenya and 8.18 years in urban Ghana. Kenya also scores higher in cognitive skills and skills related to achieving goals. For example, the average score on reading proficiency in urban Kenya is about 174, whereas the average score in Ghana is about 135. These differences are more pronounced among women. However, Ghana scores higher in skills related to working with others and managing emotions. Based on a scale of 1 to 4, Ghana scores 3.04 in emotional stability, whereas Kenya scores 2.86.

Another interesting pattern emerges with regard to the labor market structure. Self-employment is deemed to be an important feature of the labor market in urban Ghana, accounting for about 59 percent of the sample, as compared with 36 percent of the sample being wageworkers. In Kenya, in contrast, wageworkers account for about 56 percent, while the share of self-employed reaches 41 percent. In addition, self-employed is more pronounced among women in Ghana (72 percent) than in Kenya (49 percent).

Table 3 looks at the estimated relationships between skills and labor market outcomes in Ghana and Kenya combined. Column 1 presents the effect of cognitive and socioemotional skills on the probability of being a wageworker. The findings indicate that cognitive skills, extraversion, and emotional stability are positively correlated with this probability. When we restrict the sample to women, cognitive skills remain the only significant predictor, whereas in the sample for youth, the probability of being a wageworker is explained by cognitive skills and emotional stability.

Column 2 of Table 3 shows how skills are related to the likelihood of being a high-skilled worker. Reading proficiency is again a strong predictor for being a high-skilled worker. Socioemotional skills such as openness, agreeableness, and emotional stability also seem to be relevant for high-skilled occupations. The effect of openness and agreeableness are consistent for the women and youth subsamples. Although emotional stability has positive and significant effects for the youth, there is no significance for the subsample of women.

When looking at the association between skills and education–job match, the only significant relations are those of reading proficiency and openness (column 3, Table 3). These findings are relevant for both women and the youth.

Table 3: Summary of associations between disaggregated measures of skills and labor market outcomes in Ghana and Kenya, 2013

Dimension of skill	Skill	Group target	Wageworker	High-skilled worker	Skill-job match	Earnings
			Column 1	Column 2	Column 3	Column 4
Basic cognitive	Reading proficiency (ability to understand, evaluate, use, and engage with written text)	Full sample	+	+	+	+
		Women	+	+	+	+
		Youth	+	+	+	+
Achieving goals	Openness (appreciation for art, learning, and unusual ideas)	Full sample		+	+	+
		Women		+	+	
		Youth		+	+	+
Working with others	Conscientiousness (tendency to be organized, responsible, and hardworking)	Full sample				+
		Women				+
		Youth				
Working with others	Extraversion (sociability and dominance in social situations)	Full sample	+			+
		Women				+
		Youth				+
Managing emotions	Agreeableness (prosocial behaviors, cooperative orientation to others)	Full sample		+		
		Women		+		
		Youth		+		
Managing emotions	Emotional stability (predictability and consistency in emotional reactions; absence of rapid mood changes)	Full sample	+	+		
		Women				
		Youth	+	+		

The last column of Table 3 presents the returns to skills. Workers with higher reading proficiency are more likely to enjoy better earnings as compared with those with lower ability. Reading proficiency is also relevant among women and youth. With regard to socioemotional skills, the findings indicate that openness, conscientiousness, and extraversion are associated with higher earnings. Conscientiousness is particularly important as a strong predictor of earnings for women, whereas openness seems to be more relevant for youth.

Overall, the findings suggest that years of schooling remains a strong predictor of labor market success and mediates the effect of cognitive and socioemotional skills. When the years of schooling factor is included in the estimation, the effect of cognitive skills becomes smaller but remains significant. Controlling for the years of schooling also yields similar effects on socioemotional skills, with some factors losing their significance. This finding indicates the importance of education in generating both cognitive and socioemotional skills.

Policy Lessons

There is an urgent need among African policymakers to address the labor market issues caused by the lack of adequate skills for work; thus, improving cognitive skills and skills related to achieving goals should be a priority for boosting employment and earnings, especially for women and youth. The findings of this study have three practical implications:

- **Pillar 1:** Update school curriculum and vocational training programs to incorporate socioemotional skills development.
- **Pillar 2:** Reinforce the role of parenting, support out-of-school programs, and improve the work environment.
- **Pillar 3:** Design training programs to address specific labor market issues for targeted subgroups.

Pillar 1. Taken together, the findings suggest the importance of skills in promoting better labor market outcomes and higher earnings. Education, as measured by the years of schooling, emerges as an important factor in generating both cognitive and behavioral skills. The challenge now is to do the following:

1. Develop curriculum and training programs that contain specific activities to boost skills related to achieving goals and working with others.
2. Improve teachers' capabilities to teach socioemotional skills.
3. Continue efforts to improve access to and the quality of education.

Pillar 2. Other mechanisms, in addition to schooling, appear to be relevant in socioemotional skills development. Other types of measures could be as follows:

1. Make early childhood development programs more accessible to poor families and reinforce the role of parenting.

2. Promote participation in out-of-school programs and extracurricular activities.
3. Promote better working environments to foster skills related to working with others.

Pillar 3. While testing the role of cognitive and socioemotional skills among different subgroups, we found differential effects of socioemotional skills, with some of these skills playing no significant role in explaining labor market outcomes. The following are important practical implications:

1. Improve cognitive skills and those skills related to working with others and managing emotions in order to enhance employment for youth.
2. Focus on conscientiousness to improve earnings for women. Earning for youth can be improved with programs that target their ability to be innovative and to generate unusual ideas.

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