

Perception differential between TVET trainers and trainees on employability skills in Ethiopia: The case of garment Sector

○Christian S. Otchia (Kwansei Gakuin University)
Shoko Yamada (Nagoya University)

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1. Introduction

The vision of the Government of Ethiopia is to export up to 30 billion US dollars of the garment and textiles products by 2025 and consolidate Ethiopia as the leading apparel and textile manufacturing hub in Africa. As the country ranks the second largest Foreign Direct Investment destination among Least Developing Countries, the Government intends to realize its development goals through a strategy based on large-scale industrial parks. Achieving this goal means that productivity in Ethiopia must increase exponentially, given the current (as of 2016) textile and clothing exports of 114.6 million US dollars. In this context, the provision of a skilled workforce is an imperative, and there is also an urgent need to enhance the quality and the relevance of Technical and Vocational Education and Training (TVET). This paper uses original data to understand the process of garment production skills acquisition in the top seven public TVET institutes in Addis Ababa, Ethiopia. More specifically, it has two objectives. First, it develops garment skills acquisition scales based on the Ethiopian Occupational Standards items. Second, it compares trainees and TVET trainer's perception of skills acquisition to assess whether there are gaps in the expectations of the skills to acquire. The remainder of the article proceeds as follows. Section 2 presents the TVET system in Ethiopia and develops specific empirical predictions regarding skill acquisition. Section 3 describes the data collection tools. Section 4 presents the empirical results. Section 5 concludes.

2. TVET system in Ethiopia

Ethiopia is one of the few African countries which have gone through a fundamental reform of the TVET system according to the principles of competency-based training and industry-training partnership. Proclaimed in 2008, the general objective of TVET is to create a competent, motivated, employable, adaptable and innovative workforce capable to contribute to the socio-economic development of Ethiopia. So far, the TVET reform has been successful in promoting enrolments. Between 1997 and 2014, enrollments in TVET programs have grown from less than 3,000 to over two million, whereas the number of TVET institutions increased almost 80 times from 17 to more than 1,300. To materialize its goal, the government has opted for a large implication of many stakeholders, among which enterprises are supposed to play a key role (see Figure 1). First, the competency-based training is executed following the occupation standards developed by both trainers of vocational training institutions and representatives of the enterprises. Since the implementation of the reform, nearly 690 occupational standards, 380 curriculums, and 545 assessment tools have been developed. Another interesting point of this reform is that it pledges for a cooperative TVET delivery as a mean to increase relevance and facilitate the transition from school to work. The cooperative TVET delivery is a mode of training delivered by the cooperation of enterprises and training institutions, whereby 70 percent of the training content is provided in the enterprises and 30 percent in the vocational institution. Cooperative training is conducted based on the occupational standard and is organized in order to enable trainees to acquire practical competency for the theories learned at school. This requires cooperative training to be given to trainees on each competency. Our key prior that competencies which are important in the labor market or are difficult to acquire will be highly correlated

with particular features of cooperative training. To see this, consider the case where operating specialized industrial machines is highly valued in the labor market. With TVET institutes lacking adequate equipment, enterprises which provide access to modern machines or hand tools will be praised by both TVET trainers and trainees because they complement the basic knowledge learned in TVET colleges with industry-based skills. Similarly, if the cooperative training follows the unit of competency learned in TVET colleges, then it is likely that after completion, most of the trainees will be able to master the theoretical aspects of the competencies.

3. Methods

This study is part of a broader research project on Skills and Knowledge for the Youths (SKY project), which aims to develop an integrated tool for assessing multiple skills dimensions in a real workplace setting. The SKY assessment approach is unique in two important ways. First, it designed a vocational skills assessment module to measure competency, which requires a combination of vocational and problem-solving skills; then, it asked a group of TVET training providers and employers from different garment factories to concurrently evaluate the skills of workers. This approach serves two purposes: it evaluates the reliability of the test module, and it compares the perceived level of importance about specific aspects of skills between the supply side and the demand side of labor. Second, the SKY assessment module integrates a self-evaluation of the work ethics, as well as skills that are difficult to learn or to teach but most important for self-employment and factory jobs. In September 2016 SKY conducted a second round data collection among a sample of TVET Trainers and trainees from the top seven TVET colleges in Addis Ababa. Specifically, the survey collected data on competencies that are considered to be difficult to acquire by trainees and difficult to teach by trainers, skills that are important for self-employment and also for factory jobs. In addition, the survey gathered data on expectations, experiences, and satisfaction achieved with the cooperative training. While data were collected by separate questionnaires for the TVET trainers and trainees, the data collection tool was designed to make it possible to link them as a coherent set by asking the same questions to TVET trainers and trainees (see Table 1 for the structure of the questionnaires). Our sample is composed of 162 students and 53 trainers.

To explore how differences in the perception of employability skills lead to perception differences among different stakeholders, a common approach used in the literature is to develop separate scales for each stakeholder and assess their similarities or differences. While this approach can produce intuitive findings, it does not measure precisely the areas where the perception differences occur. We take a different approach: first, we build a skills acquisition scale for garment production based on the opinions of trainers and trainees. Our set of indicators include 38 items, composed of 14 difficult competencies, 14 important competencies, and 10 evaluation points of the cooperative training. Then, in the second stage, we use regression analysis to estimate the perception gaps between trainers and trainees using the garment skills development scales developed in the first step as dependent variables. The variable of interest is a dummy which takes 1 for trainee and 0 for trainer. We control for school, age, and gender.

4. Results

4.1. Garment skills development scale

As stated earlier, 30 percent of TVET is delivered by public TVET institutes and 70 percent as a cooperative training in partnership with enterprises. TVET delivery follows the occupational standard which was developed by enterprises and TVET institutions. Since the skills included in the analysis are obtained from the occupational standard, our prior is that skills which require advanced practical training such as sewing will be loaded in the same factor with cooperative training indicators, and competencies that are more theoretical or that requires initial practical exposure in TVET will be less correlated with cooperative training. Given these priors, it is ideal to conduct directly a confirmatory factor analysis (CFA) since the exploratory factor analysis (EFA)

is generally used when there is no a priori assumption about the underlying dimensionality of the construct. However, in order to develop a benchmark for garment skills acquisition scales, we apply a EFA within a CFA framework (Ender, 2012). In the first stage of the EFA, we obtained a Kaiser–Meyer–Olkin (KMO) value of 0.51, which was not satisfactory for an adequate factor analysis. The 38 items were grouped under 11 factors with a total explained variance of 0.58. We then removed 11 items based on EFA fit indices (factor loadings < 0.50, cross factor loading, and KMO < 0.15). The model with 27 items was found satisfactory as the EFA fit indices met the rules for an acceptable fit. We determined the number of latent factors to retain based on the magnitudes of the eigenvalues and the scree plot. Then, in the analysis, we used quadrimax with Kaiser normalization to rotate the factor loadings so that, by construction, each competency loads on one factor.

We report the results in Table 2. The most surprising aspect is the apparent isolation of cooperative training as all its items load into a single component (Factor 1). This suggests that cooperative training does not serve as a complement of the school-based TVET delivery as intended in the new reform. These results are in line with those reported in Yamada et al. (Forthcoming) showing that the lack of cooperation and dialogue between TVET institutions and enterprises reduces the efficiency and the spillover effects of the cooperative training. While there are more than 27,000 private enterprises which provide cooperative training for TVET students, cooperative training remains a challenge because the basis for enterprise-based cooperative training in Ethiopia is voluntarism and mutual interest. As a consequence, cooperative training may differ depending on the ability of the trainers or the dean, the location of the TVET, etc. Our survey data, for instance, indicate that the total level of satisfaction with cooperative training depends on TVET colleges, but in general, it is relatively low (3.12 on a 5 Likert scale). Another interesting finding from Table 2 is that the cluster of competencies related to supervisory skills (Factor 2), pattern making skills (Factor 3), and sewing skills (Factor 4) closely reflect the grouping highlighted in the occupational standard. It is important to highlight that finishing is clustered together with pattern making, cutting, body measurement, and embroidery, whereas in the garment production value chains, finishing tasks tend to be closer to sewing. This finding is interesting as it shows that finishing has a lot of similarities with basic garment production skills while sewing stands alone as a unique competency. In the next section, we use these four scales to assess the difference in their perception between TVET trainers and trainees.

4.2. Perception differential between TVET trainers and trainees

The perception differential between TVET trainers and trainees are presented in Figure 2. We find a significant perception differential between TVET trainers and trainees in sewing skills (Factor 4). In fact, this factor depicts the type of skills needed by operators and craftsman, and thus important for all TVET learners (especially Level 1 and 2). Our interpretation of this result is that trainees perceive these skills less important—compared to trainers—because most of them are aspiring for self-employment. Of 162 trainees surveyed, more than 60 percent mentioned that there are more likely to be self-employed after graduating the TVET course. This explanation is consistent with the fact that trainee’s perception for supervisory skills and pattern making skills is relatively higher than that of the trainers. Finally, the fact that we see no difference in the perception of cooperative training between TVET trainers and trainee confirms our findings that cooperative training has not successfully been an integrated part of the cooperative TVET delivery system.

5. Conclusion

The Ethiopian TVET system generates several interesting features for skills acquisition. One of them is that cooperative training and school-based training are complements as 70 percent of training is provided in the enterprises and 30 percent in TVET colleges. In this paper, we use a unique dataset on the perception of employability skills in garment production to develop skills development scales and assess the perception differentials between TVET trainers and trainees. The most compelling evidence on skills acquisition is that

cooperative training appears not to be a complement of school-based training. We find that finishing is closely related to pattern making, cutting, whereas sewing stands as a unique competency. The study has also shown that significant perception differentials in sewing skills exist between TVET trainers and trainees, as well as in supervisory skills and pattern making skills to a lesser extent. One of the most significant findings to emerge from this study is that there is perception differential in cooperative training.

6. References

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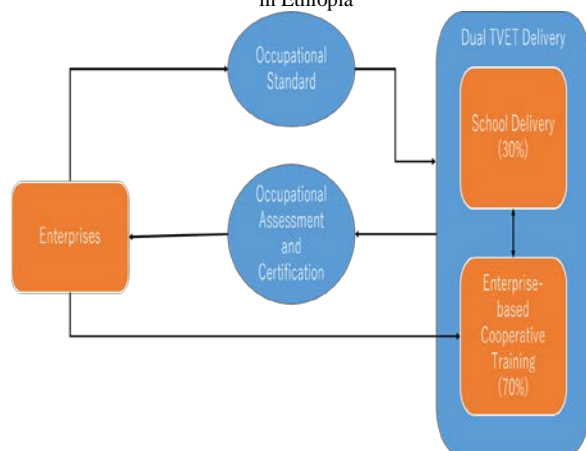
7. List of tables and figures

Table 1: Structure of questionnaires

	(a) Questionnaire for trainers	(b) Questionnaire for trainees
Background information	X	X
Home environment		X
Cooperative training	X	X
Employment	X	
Job aspiration		X
Skills given high priority in teaching	X	
Difficult skills to teach*	X	X
Important skills for self-employment	X	X
Important skills for factory jobs	X	X
Skills trainees don't have	X	
Skills in apparel production		X
Teaching methods	X	
Non-cognitive skills	X	X

Note: * For trainees, we asked the difficult skills to learn.

Figure 1: Outcome-based Organization of (Public) TVET system in Ethiopia

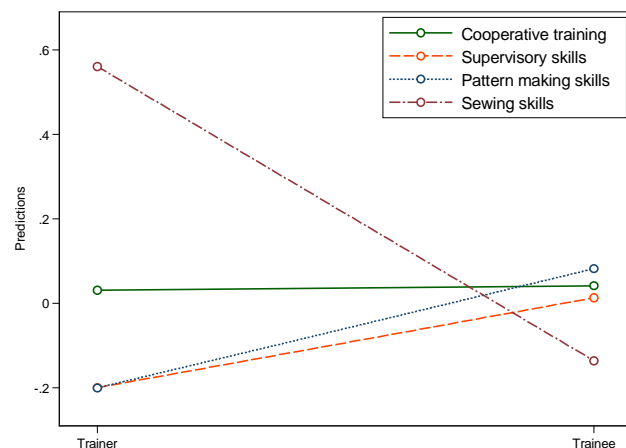


Source: Ministry of Education (2008), modified by authors.

Table 2: Garment skills development scale

Items	Factor 1		Factor 2		Factor 3		Factor 4	
	Items	Loading	Items	Loading	Items	Loading	Items	Loading
Factory trainers have a clear understanding of the objectives of the cooperative training		0.66	Imp-Making work plan	0.71	Imp-pattern making	0.61	Imp-sewing	0.62
Cooperative training is provided by a well trained factory trainer		0.63	Imp-Management	0.59	Diff-cut and lay fabric	0.58	Diff-Making work plan	0.52
Factories have modern machines and hand tools for practical training		0.65	Imp-Entrepreneurship	0.57	Diff-body	0.49	Diff-Leadership	0.48
Trainees have access to appropriate machines and equipment for the practical training		0.68	Imp-Teamwork	0.50	Imp-cut and lay fabric	0.48	Diff-Teamwork	0.29
CT helps trainees to learn the units of competence in a real world		0.72	Diff-Management	0.48	Imp-finishing	0.47	Imp-Quality control	0.29
After completing CT, most of trainees are more likely to find a job		0.61	Imp-Leadership	0.48	Imp-embroidery	0.38		
After completing CT, most of trainees are more likely to pass the competence based assessment		0.74			Diff-finishing	0.33		
After completing CT, most of trainees are more likely to master the theoretical aspects of the competencies		0.76			Imp-body	0.32		

Figure 2: Perception differentials of garment skills development



Note. The perception differentials are obtained from different regressions. All estimates control for age, gender, and school.